An Investigation of the Developmental Assumptions Underlying Age-based Legal Criteria in the Children's Court

by

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Submitted in partial fulfilment of the requirements for the degree of

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**Abstract**

Assessing culpability for criminal actions is a difficult task with many populations, but for minors (i.e. young people under the age of majority) the developmental, psycho-legal and philosophical considerations make it even more challenging. In Victoria, Australia, young people between the ages of 10 and 13 (inclusive) are protected by a common law presumption, *doli incapax*, which presumes these young people are not mature enough in their decision making and/or moral reasoning abilities to be held culpable for their criminal actions. This presumption can be rebutted, however, if it can be proven that the young person, at the time of the offence, knew their criminal actions were *seriously wrong* as opposed to *naughty*. In recent years, the ages at which the *doli incapax* presumption applies, the wording of the criteria, and the way it is assessed have all been subject to criticism. However, research rarely integrates psychological knowledge with such specific legal frameworks, and this disconnection is evident in relation to *doli incapax*.

Taking a psycholegal, mixed methods approach, this piece collects data from multiple sources, including psychometric measures that purport to measure developmental trends in decision making and moral reasoning. Two scenarios are depicting potentially criminal behaviour are used to prompt participants to choose a legal descriptor (from a list including *seriously wrong* and *naughty*), make decisions, and justify these choices at multiple points. The relationships and interrelationships between these data sources are investigated in order to better understand *doli incapax*, to scrutinise the utility of the presumption as a herding mechanism, and to inform future investigative models.

Findings from this study indicate that outcome-based measures are flawed indicators of developmental competence. Rather, the *process* by which young
people make decisions and moral judgements is more developmentally
informative than outcome alone, and highlights factors that police and forensic
psychologists should explore when determining the competence and thus
culpability of young offenders. Given these findings, this thesis shows that young
people’s development of key competencies is not as clear cut as the legal standard
indicates, and extending the ages at which young people are presumed to lack the
requisite competencies to be held culpable for their offending should be
considered.
Introduction

Adolescents occupy a unique cultural, social and legal space between children and adults. They are transitioning out of being protected from social and legal responsibility as children, and are increasingly expected to make mature, responsible decisions, as they approach adulthood. As young people transition into adulthood, they are progressively accorded rights and are subject to the responsibilities that accompany such rights. Each jurisdiction handles the provision of rights and responsibilities to its young people differently, depending on the social, cultural and historical context. Over time, each jurisdiction has developed a position regarding when (and under what conditions) their young people are eligible for the right to engage in work, drive a car, purchase alcohol, provide sexual consent, access medical treatment unaccompanied, and be held culpable for criminal behaviour, to name a few. Once a young person is accorded rights in a particular legal arena, they are subject to the legal responsibilities that accompany that right, and will usually be held accountable for any law-breaking actions they engage in after that point.

In many jurisdictions, age is used as a herding mechanism, indicating the minimum age at which the individual is eligible for a particular right (or liable for a particular responsibility). Once a young person reaches the minimum age, their individual competence is usually then assessed before they are granted the right or responsibility in question. For example, in the state of Victoria, Australia, young people are not allowed to drive unaccompanied until they reach 18 years of age. Once 18, they are eligible to participate in a driving test (provided they have met all other jurisdictional requirements to be eligible for a driver’s licence). This illustrates that while age is used as a herding mechanism to indicate eligibility (18 years and over), the competence of the individual is also assessed before they are
granted the right or responsibility, by acquiring a driver’s licence in this case. How stringent the criteria are that an individual needs to meet often depends on what is at stake. For example, the right to purchase and consume alcohol (legally) is granted upon reaching 18 years of age in Australia. This is a bright-line distinction, and assumes that the majority of people are competent and mature enough (physically and psychologically) by age 18 to purchase and drink alcohol responsibly. In arenas where the stakes are particularly high for young people, they must meet more stringent criteria before being afforded these rights and responsibilities.

Similar to other legal arenas, a minimum age must be reached in order to be eligible to access medical treatment unaccompanied or be held criminally responsible. However, because young people’s future opportunities could potentially be severed, through a lack of medical treatment access (potentially resulting in death or early parenthood), or criminal sanctions (possibly resulting in incarceration), the law again utilises an individual competency assessment before granting the right to medical treatment unaccompanied or holding a young person criminally responsible. Thus, the law recognises that young people develop at different rates and should not be disadvantaged by being denied the right to medical treatment if competent, or by being held criminally responsible for their actions when they are not yet competent. It is this transitional period where the provision of rights and responsibilities is not only contingent upon age, but also assessments of the competence, maturity, judgement and decision making abilities of the individual that this thesis is interested in.

Chapter One discusses the legal personhood of young people, exploring how the provision of rights and responsibilities is navigated by particular areas of the law in Australia, in contrast to select jurisdictions around
the world. Chapter One then focuses on the criminal culpability of young people, and how the transition into being fully responsible for criminal behaviour is handled in Australia. Throughout Australia, young people under the age of 10 are presumed irrefutably *doli incapax* (to lack the requisite state of mind, or *mens rea*, to be held accountable). Between the ages of 10 and 13 (inclusive), young people are still presumed *doli incapax*. In Victoria, this may be rebutted if the prosecution can show that the individual young person knew their actions were *seriously wrong* and not just *naughty* at the time of the offence¹. From the age of 14, young people are presumed *doli capax* (to possess the requisite *mens rea* to be held accountable), although this can be rebutted if the defence can show that the individual young person did not know their actions were *seriously wrong* at the time of the offence. Thus, the operation of the *doli incapax* presumption shifts at age 10 and again at age 14, meaning there is a legal assumption that young people are possibly (but unlikely to be) competent at 10 years of age and are presumed competent at 14 years of age.

Chapter 2 expands the discussion of *doli incapax*, exploring the social, cultural and historical context in which the presumption exists within Australia. In deconstructing the wording of *doli incapax*, it is argued that decision making and moral judgement abilities are key to an individual knowing whether their actions are *seriously wrong* or not. The abolition of *doli incapax* has been raised numerous times within Australia, usually following a violent or fatal crime committed by a person aged 10 to 14. In favour of abolition, it is often argued that young people today are more mature than previous generations, and thus should be held culpable from the age of 10. However, if the presumption of *doli incapax* were

¹Throughout Australia, young people aged 10 to 13 (inclusive) are presumed *doli incapax*. However, the criteria by which *doli incapax* can be rebutted between the ages of 10 and 13 varies across the states and territories of Australia.
abolished between the ages of 10 and 14, this would remove the formal legal recognition that young people develop moral reasoning and decision making abilities at variable rates. Further, the onus would rest with the defence to show the young person did not know their actions were seriously wrong at the time of the offence. Considering there are no known psychological investigations of developmental trends in decision making and moral reasoning with doli incapax specifically in mind, the present study aims to fill this gap.

In light of this, Chapter 3 evaluates relevant decision making and moral reasoning theory. Theories are broadly categorised as rationalist, dual-process, or psychosocial in nature. Briefly, rationalist theories believe decision making and moral reasoning is a logical, deliberate process whereby all potential decision options are considered before the decision or judgement is made. Rationalist theories largely ignore contextual or psychosocial influences that could skew decision making or moral reasoning, and have been criticised for characterising all decisions as involving a conscious, deliberate process. Dual-process theories concede that not all decisions are as well thought out as rationalist theories suggest. In addition to the rationalist process described above, dual-process theories posit a second process that is more automatic and enables one to make decisions quickly or with little cognitive processing. While dual-process theories provide an additional process by which decisions or judgements can be made, they give psychosocial factors little consideration, and also focus mostly on the process adults use, not young people specifically. By contrast, psychosocial theories highlight the contextual factors that particularly influence adolescents’ decision making and moral reasoning processes, including peer pressure, tendency to focus on short term gains rather than long term consequences, perceiving fewer risks, and not understanding the consequences or implications of their actions.
Considering that the present study is an initial psycholegal investigation, no single theoretical perspective is aligned with. Rather, all the theoretical perspectives together highlight that adolescents’ decision making and moral reasoning process is affected by numerous factors that are specific to their developmental period, and these frameworks assist with interpreting findings.

After outlining theory in Chapter 3, the research associated with rationalist, dual-process and psychosocial perspectives is critiqued in Chapter 4. Particular attention is paid to the methodology of the evaluated research, and the lack of studies that investigate decision making and moral reasoning with specific legal criteria in mind. Research is generally psychological (rather than psycho-legal) in nature, looking at the factors that affect decision making in young people. Research that does link antisocial decision making and moral reasoning often fails to incorporate legal criteria directly.

Following the evaluation of past research and theory, the rationale for the present psycholegal investigation is outlined in Chapter 5. This chapter highlights the novel method employed to investigate developmental trends in young people’s decision making and moral reasoning abilities with the doli incapax criteria in mind. Because this study is the first of its kind, it utilises a broad investigative framework to scrutinise several aspects of the doli incapax presumption: the use of the presumption as an age-based herding mechanism, the role of moral reasoning and decision making as developmental indicators of competence, and the utility of the terms seriously wrong and naughty as representations of competence. Finally, this thesis aimed to inform future investigative models so that ongoing debates regarding the use of doli incapax in Australia may be informed by pertinent empirical research.
In order to collect a wide range of data that looked at the *doli incapax* presumption and developmental trends from numerous angles, interviews were conducted with 245 young people aged 8, 10, 12, 14 and 16. Two scenarios based on real-life criminal cases asked participants to imagine they had the opportunity to drop rocks from a bridge onto a freeway overpass, and push a person who got them in trouble into a lake. At three intervals, participants reported decisions they would make in these situations, which directed their path through the scenarios, described the scenario using legal descriptors (chosen from a list including *seriously wrong* and *naughty*), and provided rationales for these decisions and choices. This method captured both decisional outcomes and the process young people used to reach that outcome. Alongside this novel, scenario-based measure, four psychometric instruments purporting to measure developmental trends in decision making and moral reasoning were employed.

Through investigating the relationships and interrelationships between these variables, the most consistent finding was that developmental trends were even more inconsistent than developmental theories account for. At times, there were no discernable age trends, with participants of all ages reporting similar decisional outcomes or justifying these choices using similar rationales. When age trends were seen, they did not follow a uniform trajectory, showing linear, curvilinear or seemingly random changes in participants’ reported decisions, choice of legal descriptors, and use of rationales. There was an emerging trend for older participants to cite rationales that indicated abstract reasoning, consequential thinking, and more developed moral reasoning abilities than younger participants, who were typically self-referential, concrete, and risk-focussed. However, this trend was not consistently found. Further, most of the developmental psychometric instruments failed to reliably capture developmental
trends. The one reliable psychometric measure found participants’ sociomoral reasoning abilities linearly improved with age.

The numerous implications of these findings are fully explored in the Discussion chapter. However, these findings raise questions about how development is conceptualised under *doli incapax*, how developmental trends can be reliably measured, and whether the ages at which young people are presumed *doli incapax* should shift. Given young people’s development of key psychological abilities is so variable, there is a clear need to maintain the *doli incapax* presumption so they are protected from the full force of the law. However, assessment tools for determining need to be strengthened to ensure only competent young people are being held culpable for their criminal behaviour. Finally, the need for psycholegal research pertaining specifically to *doli incapax* is highlighted. Without such research, the relevance of a psychological perspective in future debates regarding *doli incapax* is questionable.
Chapter 1

The Legal Personhood of Young People

This chapter explores how and when young people are given legal rights and responsibilities by various jurisdictions during the transition from childhood to adulthood. Young people typically become eligible for any given legal right or responsibility based on their age. For example, there is a minimum age associated with young people being able to work, gain a driver's licence, and (legally) purchase and consume alcohol in Australia. Such age-based distinctions are based on the assumption that most young people at the stipulated age are physically and psychologically mature enough to be granted such rights and responsibilities. In some legal domains, young people are required to demonstrate their competence in addition to meeting minimum age requirements (e.g. completing a driving test in order to be given a driver’s licence). In these cases, age is used to broadly divide young people before applying an individual competency assessment. In the case of working, driving and drinking, age is used as a bright-line distinction between the young people that are and those that are not eligible for those rights and responsibilities. That is, individuals younger than the stipulated age are not given the opportunity to demonstrate they are mature enough to work, drive or drink before that age.

By contrast, the right to access medical treatment unaccompanied can be granted, and young people can be held criminally culpable in Australia (and other jurisdictions) individually, before the age at which competency is presumed at a population level. Because the stakes are high in both of these domains, young people can be conditionally awarded the right to medical treatment or be held criminally responsible if it can be demonstrated they possess the requisite psychological maturity. This chapter explores the procedures by which rights and
responsibilities are afforded to young people in Australia, in contrast to select
countries around the world. More importantly, the assumed psychological
competencies that accompany the provision of these rights and responsibilities are
highlighted, especially in relation to criminal culpability, the focus of this thesis.

Age-Based Rights and Responsibilities

Young people are given specific rights and responsibilities when their
jurisdiction deems them to possess the requisite abilities to engage in a task. As
mentioned, age is often used as a proxy for ability and young people become
eligible for many rights and responsibilities once they reach a certain age.
However, there is no one age where young people are deemed “mature” in all legal
domains, instead the provision of rights and responsibilities is staggered
throughout adolescence, depending on the physical and psychological demands of
the task. For example, in most states of Australia, young people are generally able
to learn to drive a car under supervision from the age of 16 (from 15 years and 9
months in the Australian Capital Territory, and from 15 and 11 months in
Tasmania) and are eligible to drive unsupervised by 18 years of age (provided they
have met any other requirements such as logging supervised driving hours). The
assumption here is that not only have most young people reached sufficient
physical maturity to be able to operate a car by the age of 18, but they also possess
enough psychological maturity and cognitive skill to be able to make decisions and
think consequentially on the road, and provided they have practised driving while
supervised. However, this assumption is not absolute; young people do not simply
receive a licence once they turn 18, they only become eligible at that point and
must prove their competence by engaging in a driving test.

There is variation between Australian jurisdictions, and across countries, as
to when young people are afforded a variety of legal rights and responsibilities. For
example, the age at which young people become eligible to drive a car unaccompanied differs around the world. In the United States, young people become eligible to drive while supervised between 14 and 17 years of age, depending on the jurisdiction (Insurance Institute for Highway Safety, Highway Loss Data Institute, 2012). Similarly, there is variation between jurisdictions as to when young people are eligible to work (between the ages of 11 and 16 in Australia, depending on the type of work\(^2\)), when young people are eligible to drink alcohol (at 18 years of age in Australia\(^3\), 21 years of age in America\(^4\), 15 years in Angola and 25 years of age in Nepal\(^5\)), and when young people can legally consent to sexual relationships (16 years of age in some jurisdictions of Australia\(^6\) and 17 years in other Australian jurisdictions\(^7\)). The variation in age-based legal criteria between Australian jurisdictions and across countries shows that the provision of rights and responsibilities to young people is not clear cut. Any age-based distinction makes inherent assumptions about the psychological (and sometimes physical) maturity of both the young people prior to, at, and over that age. While the age-based legal distinctions may be informed by research into adolescent development, they are also reflective of how young people’s developmental trajectory is viewed socially and culturally in that particular jurisdiction, as well as how such rights and responsibilities have been awarded.
historically. The same is true for the two identified high stakes legal domains: accessing medical treatment unaccompanied and being held criminally culpable.

**Medical Treatment Decisions**

In Australia, a young person under the age of majority (which is 18 in all states apart from Queensland, where the age of majority is 17) may make their own medical treatment decisions if they are deemed to be a “mature-minor”. This conditional right is not enshrined in statute in most states of Australia (South Australia and New South Wales excluded), but exists in common law inherited from the United Kingdom (UK). When a young person is seeking medical treatment under the age of majority, the medical practitioner must assess whether the young person has achieved “sufficient understanding and intelligence to enable him or her to understand fully what is proposed”\(^8\), a standard which is often referred to as the *Gillick* criteria. There is no minimum age after which a minor is eligible to be deemed “mature”, with the above criteria seemingly applied to all young people under the age of majority. However, the common law wording provides little guidance on how to apply the legal criteria to individual cases.

Clinical bodies that advise medical practitioners on how they should assess young people for their medical treatment decision making competence state that the following areas should be assessed: whether the young person understands what the proposed medical treatment entails; the seriousness or gravity of the treatment; the risks associated with the treatment (such as potential side-effects); and the risks associated with refusing treatment (Australian Law Reform Commission, 2010; New South Wales Centre for the Advancement of Adolescent Health, 2008). Such guidelines help to elucidate some of the psychological

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\(^8\) *Gillick v West Norfolk Area Health Authority* [1986], endorsed by the High Court of Australia in *Re R (A Minor) Wardship: Medical Treatment* [1991].
competencies assumed by the *Gillick* criteria. Thus, to be deemed a “mature
minor”, young people need to demonstrate they can think about potential
consequences, generate alternate courses of action, and predict risk associated
with the potential consequences.

Gaining mature minor status for the purposes of medical treatment is done
through a similar process in other parts of the world. Under the age of 16 in the
UK, young people can be deemed competent to consent to medical treatment on an
individual basis if they meet the same *Gillick* criteria mentioned above. After the
age of 16, the direction of the presumption changes and young people are
presumed to have the capacity to provide their consent to medical treatment,
unless demonstrated otherwise (s.1.2 of the *Mental Capacity Act 2005* (UK)). Thus,
the bright-line distinction is set at age 16 in the UK, but competent young people
are eligible to access medical treatment before this age. In the US, the criteria
under which a young person can autonomously access medical treatment varies
from state to state, and also depends on the medical domain in which a young
person is seeking treatment. For example, in all states of the US, adolescents (over
the age of 12 or 14, depending on the state) are allowed to consent to medical
testing for Sexually Transmitted Diseases (STDs) (Hill, 2012). In contrast, the
ability to consent to select medical treatment for issues such as substance use,
sexual assault, and mental health is afforded to adolescents in some states, but not
others (Hill, 2012). Thus, how and when young people are deemed competent to
access unaccompanied medical treatment in the US is dependent on their age, the
jurisdiction in which they live, the type of treatment they are accessing, and their
psychological maturity.

Because young people are making medical treatment decisions that can
potentially affect their life trajectory as well as their ongoing confidence in and use
of the medical system, it is especially important to ensure they are legally competent to make such decisions. Although the bright-line age at which young people are assumed competent or mature enough to independently access medical treatment differs between countries, there are some broad similarities in the way that these jurisdictions handle young people before and after these ages. Before the stipulated age, young people may be eligible to access medical treatment if they can demonstrate they are competent to do so. This allows a balance between protecting young people from making potentially life-changing medical decisions until they are competent, and not restricting the medical access of the young people who are competent. Once they reach the age at which they are presumed competent enough to access independent medical treatment, their competency to do so is placed under less scrutiny. Similar principles apply to the way in which young people are deemed culpable for their criminal behaviour.

**Criminal Culpability**

Alongside medical treatment, juvenile justice is the other high-stakes legal arena, as it also has the potential to alter the young person’s life trajectory if they are subject to criminal sanctions. The balance in the juvenile justice arena is therefore between protecting young people who do not have the requisite competencies to fully understand the consequences of their criminal behaviour, and should therefore not be held culpable (or receive sanctions), and holding the young people who did understand the consequences of their actions to account. Before discussing the way in which such a balance is struck in Australia currently, it is important to place juvenile offending in context, and note key events that shaped the current legal process.

Criminal behaviour is more prevalent during adolescence than adulthood with prospective studies showing that offending rises steeply from the minimum
age of criminal responsibility (specific to that jurisdiction), peaks between 16 and 18 years of age, then declines steeply in early adulthood (Farrington, 1983; Farrington, 1986; Moffitt, 1993). While rates of some juvenile offending have increased during the 20th Century, juveniles have committed a higher proportion of crime relative to their adult counterparts as far back as the 18th Century (Arnett & Tabor, 1994; Greenberg, 1985; Hirschi & Gottfredson, 1983; Sanders, 1970). Although young people offend at a comparatively high rate, many young people will desist naturally upon reaching adulthood (Moffitt, 1993).

The peak in offending towards late adolescence, commonly termed the age-crime curve, can be explained by at least two latent classes of young people; adolescent-limited and life-course-persistent offenders (Moffitt, 1993)9. Life-course-persistent offenders typically demonstrate antisocial behaviour from a young age, begin offending earlier, commit significantly more offences than their adolescent-limited counterparts, and maintain their offending for longer periods of time (Moffitt, Caspi, Harrington & Milne, 2002). These individuals tend to offend at a consistently high rate from early adolescence through adulthood, so do not account for the peak in the age-crime curve in late adolescence. The peak has instead been attributed to adolescent-limited offenders, who typically begin offending in mid-adolescence, and desist by early adulthood. Moffitt (1993) identifies that while young people reach physical maturity in early adolescence, they are not afforded adult social roles until up to 10 years later, leaving what she terms a “maturity gap”. Moffitt argues that offending is seen by adolescent-limited offenders as a way of appropriating adult roles by asserting independence and

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9 It is acknowledged that longitudinal research has explicated more than these two latent groups of offending young people (see Farrington, 1986; Farrington, 2003; Moffitt & Caspi, 2001; Moffitt, et al., 2002; Nagin, Farrington & Moffitt, 1995; Odgers, Moffitt, Broadbent, Dickson, Hancox, Harrington...Caspi, 2008 for examples). Because this study does not intend to investigate these latent groups or utilise a longitudinal design, only adolescent-limited and life-course-persistent offenders are discussed for the sake of brevity.
autonomy, and gaining social capital. Because adolescent-limited offenders generally had pro-social childhoods, and typically participated well in education, many are expected to naturally desist from crime as they transition into legitimate adult roles and build social capital unless they are “snared” by something that ties them to an anti-social life trajectory, such as incarceration, drug use, early parenthood or interrupted education (Moffitt, 1993; Moffitt, et al., 2002). Juvenile Justice Systems therefore have the delicate task of ensuring young people are not unnecessarily “snared” by criminal sanctions if they will naturally desist from crime and become prosocial members of the community, while helping them to understand that criminal behaviour is unacceptable before they are given full legal rights and responsibilities at the age of majority (Cipriani, 2009).

The way in which such a task is approached by Western legal systems is linked to the social understanding of adolescents, and their offending behaviour. As this understanding has developed over time, so too has the way in which young people are processed by the justice system for their criminal actions. Broadly, there have been three main paradigm shifts in how Western jurisdictions view and process young offenders; justice, welfare, and recriminalisation. Historically, children from the age of seven were considered miniature adults and treated as such by the justice system. They were thought to possess the requisite competence, maturity, and decision making abilities to be afforded adult rights, such as the ability to join the workforce, live independently and enter into adult relationships, at age seven (Ainsworth, 1991). As such, young people were held to the same standards of criminal responsibility as adults from age seven, and were processed accordingly; in adult court. Utilising a justice paradigm, this criminal justice system prioritised punishment, and made only one bright-line, age-based legal distinction between childhood (birth to six years of age) and adulthood
(seven years and above). Adolescence was not seen as a separate developmental period, and the law aligned with this, making the assumption that by the age of seven, individuals had gained the requisite maturity to be held fully accountable under the law.

This understanding of development shifted during the Victorian Period (1837 – 1901). The ages at which children were considered naive, innocent and vulnerable grew to include children over the age of seven. This not only changed the ages at which young people were defined as children, but meant a bigger group of young people were now protected from adult responsibilities (Ainsworth, 1991). As the understanding of young people expanded, adolescence was acknowledged as an intermediate developmental phase between child and adulthood (Hall, 1904). Because childhood and adolescence were now regarded as developmental periods subjacent to adulthood, the legal treatment of children and adolescents came to reflect this (Scott & Steinberg, 2003). Due to their immaturity of judgement, and vulnerability compared to adults, children and adolescents were not seen as responsible for their criminal behaviour. Instead, child and adolescent crime was seen as a product of poor social circumstance and parental neglect, rather than the result of intentional, rational decisions (Bessant & Watts, 2008).

Because adolescent crime was thought to be driven by different factors than adult crime, youth-specific courts were introduced in jurisdictions across the world. Put simply, the philosophy of this Juvenile Justice System (JJS) was to protect adolescents from the disadvantaged circumstances that led them to commit crime, rather than subjecting them to punishment for their criminal actions, as adults are in the Criminal Justice System (CJS; Scott & Steinberg, 2003). Thus, judges and magistrates were given full legal discretion to do whatever they believed was best for the young person and act in the role of their parent (who was
presumed neglectful) under the *parens patriae* doctrine. This was designed to allow the state to protect its most vulnerable members by absolving them of all legal responsibility. However, rights and responsibilities go hand-in-hand, so because young people had no legal responsibility under the welfare paradigm, they were also afforded no legal rights. In practice, young people were often disadvantaged, instead of protected, by the early JJS, with many young people subjected to more severe sanctions than adults because they were not given due process rights including access to legal representation, engaging in a trial process, and being presumed innocent until proven guilty.

Several legal cases highlighted the pitfalls associated with a purely welfare-driven JJS, the most (in)famous of which is *In re Gault* [387 U.S.]. In 1964, Gerald Gault, who was 15 years old at the time, was taken into custody after allegedly making lewd phone calls to a neighbour. The court did not test the evidence against Gault, as he was not afforded due process rights. Rather, he was seen as a delinquent in need of reform, and was sentenced to juvenile reform school until he reached 21 years of age. Had he been an adult, Gault would have been fined or imprisoned for a maximum of two months. *In re Gault* [387 U.S.] and cases like it were the catalyst for change in juvenile justice process, with young people granted due process rights. However, rights come with responsibilities, and giving young people due process rights left them open to being found guilty and thus held responsible for their criminal behaviour.

Modern Juvenile Justice Systems thus have to balance both the justice and welfare paradigms by protecting young people from the full force of the law though more lenient sentencing compared to adults, while also sending a clear message that criminal actions have consequences. One of the principles underpinning the Children’s Court in Australia and Juvenile Justice Systems like it
around the world remains that the factors driving adolescent offending are fundamentally different to adult offending, and thus should be treated differently by the legal system (Melton, et al., 2007). Adults are thought to possess gold-standard decision making abilities and rationally weigh up the risks and benefits of engaging in crime under rational choice theory (Bentham, 1996). By contrast, adolescents are unreliable in their application of mature judgement to decision making situations, and are therefore less culpable for their criminal offences, as they lack the decision making experience and abilities of adults. Further, adolescent offenders are seen as much more amenable to treatment, and utilising rehabilitation to change their offending behaviour is prioritised over retribution or punishment (Scott & Grisso, 1997).

While the JJS and relevant academic literature may hold this viewpoint, the general public have less access to such sources, and largely rely on popular media to inform their view of young offenders. News stories regarding young offenders can be sensationalist, depicting young people as inherently dangerous, and characterising their offending behaviour as similar to that of adults. Such stories tend to paint the picture that the number and severity of offences committed by young people is worsening. However, juvenile crime rates in Australia have in fact remained stable or have reduced in recent years (Little & Karp, 2012; Richards, 2009), even though the public perceives juvenile crime to be an ever-increasing problem (Hamilton & Harvey, 2004). This perception that that juvenile crime is exceptionally high (and rising) means that there are often calls to “get tough” on juvenile crime, and recriminalise young offenders by introducing procedural juvenile justice reforms.

Singer (1996) argues that recriminalisation is “the creation and implementation of legal rules that place juveniles in the adult criminal justice
system” (p. 1), thereby deeming them “offenders” rather than “delinquents”. In this thesis, the term recriminalisation is used more broadly to describe the introduction of more punitive legal policies for processing young offenders, one of which is the increased transfer or waiver to adult court as described by Singer (1996). Examples of recriminalising juvenile offending in Australia include the implementation of mandatory sentences including imprisonment for young people who commit more than one property offence in the Northern Territory\textsuperscript{10}, and 12 months mandatory imprisonment or detention for young people who commit at least three home burglaries in Western Australia\textsuperscript{11}. Changes to the wording of \textit{doli incapax} when enshrined in legislation in Queensland\textsuperscript{12}, Western Australia\textsuperscript{13}, Northern Territory\textsuperscript{14}, and Tasmania\textsuperscript{15} have effectively made it easier for young offenders to be found criminally responsible, and are another example of removing procedural protections for young people, thereby recriminalising their offending.

Examples of recriminalisation exist in other jurisdictions, including increased transfer and waiver of juveniles to adult court in the United States (Bishop, 2000; Brannen et al., 2006; Myers, 2003) and the removal of the \textit{doli incapax} presumption in Britain (s.34 \textit{Crime and Disorder Act 1998}). Such policies are often introduced to appease the public’s call for “something to be done” about youth crime. However, by making arbitrary, punitive policies such as those listed above, a wider net of law enforcement is cast over young people, more young people come into contact with police and are prosecuted for their crimes, which in turn gives the appearance that youth crime is rising rather than reducing. Thus,

\textsuperscript{10} \textit{Juvenile Justice Amendment Act (No 2) 1996 (NT)}
\textsuperscript{11} s. 410 (4)(a) and s.410(4)(b) \textit{Criminal Code Act Compilation Act 1913 (WA)}
\textsuperscript{12} s.29 (2) \textit{Criminal Code Act 1899 (Qld)}
\textsuperscript{13} s.29 \textit{Criminal Code Act Compilation Act 1913 (WA)}
\textsuperscript{14} s.38(2) \textit{Criminal Code Act (NT)}. These laws have since been repealed: \textit{Mandatory Sentencing Repeal Act 2000 (NT)}
\textsuperscript{15} s.18(2) \textit{Criminal Code Act 1924 (Tas)}
recriminalisation of the JJS is not simply a shift back to a justice paradigm, but a
new and more procedural reimagining of juvenile justice (Singer, 1996).

When juvenile offending is recriminalised by increasing the ways that
young people can be processed as adults, in the case of transfer or waiver, or
holding young people more easily responsible for their criminal actions (Butts &
Mears, 2001; Hamric-Weis, 1995; Singer, 1996), the assumptions made about
young people’s capacities begin to look more like the assumptions made about
adults. That is, young people are seen as sufficiently competent to be held
accountable for their criminal behaviour in the same way as adults. Currently, the
tide is turning towards recriminalising young people in many Western
jurisdictions, viewing them as offenders (rather than delinquents), and thus
holding them to account for their criminal actions in ways similar to adults
(Bishop, 2000; Myers, 2003). This thesis focuses on one specific area of Australian
law that is under threat from recriminalisation: doli incapax. From a
recriminalisation point of view, presuming that young people between 10 and 13
years of age do not have the capacity to commit crime is viewed as “soft” on
juvenile crime.

**Doli Incapax**

With this current trend of recriminalisation in mind, the presumptions
about young people’s criminal culpability changes with the age-based milestones
of 10, 14 and 17 or 18 years of age. In all the Australian states and territories,
young people cannot be held criminally culpable for their actions until the age of
10\(^{16}\). Under the age of 10, there is an irrefutable presumption of doli incapax. A

\(^{16}\) s5 Children (Criminal Proceedings) Act 1987 (NSW); s29 Criminal Code Act Compilation Act 1913
(WA); s25 Criminal Code 2002 (ACT); s38(1) Criminal Code Act (NT); s29(1) Criminal Code Act 1899
(QLD); s344 Children, Youth and Families Act 2005 (VIC); s4M Crimes Act 1914, (Cth); s7.1 Criminal
Code Act 1995, (Cth); s5 Young Offenders Act 1993 (SA).
young person is presumed to be unable to form the requisite intent, or *mens rea*, to be held accountable for their actions. Australia has only relatively recently become uniform in their minimum age of criminal responsibility (MACR)\(^{17}\). Tasmania and the Australian Capital Territory were the last two jurisdictions to come into line with the national minimum, with Tasmania raising their minimum from seven years of age in 2000\(^{18}\) and the Australian Capital Territory raising their minimum from eight in 2003\(^{19}\).

The presumption of *doli incapax* extends past the minimum age of criminal responsibility of 10 to 13 year olds (inclusive), although at these ages the prosecution may rebut the presumption. Thus, after the age of 10, young people become eligible to be held criminally responsible for their actions. The closer the young person is to their 14\(^{th}\) birthday or the more “obviously wrong” the offence is, the easier it is for the prosecution to rebut *doli incapax*, and for the young person to therefore be held criminally culpable by the Children’s Court (Crofts, 2003).

While the 10 to 13 (inclusive) age range is uniform across Australia, *doli incapax* has been enshrined in statute in some jurisdictions (Australian Capital Territory, Northern Territory, Queensland, Tasmania, Western Australia, and the Commonwealth), but remains in common law in New South Wales, South Australia, and Victoria. The wording of the *doli incapax* presumption varies according to jurisdiction, but in states where it still exists in common law, the prosecution must show beyond a reasonable doubt that the young person in question knew their actions were *seriously wrong* and not just *naughty* or *mischievous* at the time of the offence (*C (A Minor) v DPP* [1995]). From the age of 14, young people are

\(^{17}\) Australia’s MACR is low by world standards; 12 is the median age set by jurisdictions around the world (Cipriani, 2009), and is also the minimum age recommended by the United Nations Committee of the Rights of the Child (2007).

\(^{18}\) s.18(1) *Criminal Code Act 1924* (Tas)

\(^{19}\) s.25 *Criminal Code Act 2002* (ACT)
presumed *doli capax*. The onus therefore shifts to the defence to prove beyond a reasonable doubt that the accused did not know their actions were *seriously wrong* at the time of the offence. The Victorian legal process is depicted pictorially in Figure 1 below. The ways in which *doli incapax* is assessed by the courts is discussed in more detail in the next chapter.
Figure 1. The Legal Process Relevant to Doli Incapax in Victoria.
Although \textit{doli incapax} remains in all Australian jurisdictions, the ongoing utility and applicability of the presumption is often questioned, typically when a young person aged 10 to 13 commits a serious violent offence (Crofts, 2003). This often triggers the media response discussed above, which can position the offence in question as representative of all juvenile crime, assert an epidemic of juvenile crime, then call for policy reform to “get tough” on juvenile crime (Bernard & Kurlychek, 2010). It is often argued that \textit{doli incapax} should be abolished as modern young people are more mature than previous generations, owing to better access to technology, as well as better education and nutrition (Doherty, 2001; \textit{DPP v W} [1999]; Tobin, 2008). However, these claims are not based on scientific findings and there is little direct research that investigates developmental trends in young people’s legally relevant abilities at ages relevant to \textit{doli incapax}. Calls to abolish \textit{doli incapax} are therefore based on popular rhetoric and personal beliefs instead of empirical knowledge. This thesis aims to take preliminary steps to bridge this gap, and to add empirical data to the ongoing debate about the criminal culpability of young people.

\textbf{Chapter Summary}

This chapter placed the criminal culpability of young people into a broader context of age-based legal rights and responsibilities. Young people are conditionally afforded numerous rights and responsibilities throughout adolescence. The law typically stipulates an age at which the young person becomes eligible for a specific right or responsibility, and often they are required to pass a subsequent individualised competence test before being afforded this right or responsibility. This allows for a transition-period between having no rights and responsibilities as a child, and having full rights and responsibilities as an
adult. It is a recognition that the young people not competent or mature enough to make life-changing decisions need to be protected, while also acknowledging that the young people who are competent or mature enough to make their own decisions should not be disadvantaged. This discussion highlighted that when and how young people become eligible for particular rights and responsibilities is jurisdiction-specific and makes key assumptions about the psychological (and sometimes physical) abilities necessary to be deemed competent. Medical treatment decision making and criminal culpability were identified as two high-stakes legal domains where young people are conditionally afforded rights or held responsible, respectively. Further, both domains make inherent assumptions about the psychological abilities required to be deemed competent.

As criminal culpability is the focus of this thesis, juvenile offending was put into context, with the age-crime curve emphasising that criminal behaviour rises during adolescence and declines in early adulthood. This forms part of why the offending behaviour of young people is viewed and processed differently from adult offending behaviour under the law. Young people are also seen by the justice system as more amenable to treatment and still in the process of developing the decision making and moral judgement abilities assumed of adults. The historical development of the Juvenile Justice System was traced through the justice and welfare paradigms, into the modern Juvenile Justice System where young people are provided due process rights and are eligible to be held responsible for their criminal behaviour, should they be deemed competent. In trying to balance these rights and responsibilities, a trend has emerged in some Western jurisdictions whereby young people are being recriminalised for offending behaviour. For example, procedural safeguards are being removed in the case of doli incapax,
young people are being given mandatory sentences, and in some jurisdictions procedural changes have made it easier for young people to be tried in adult court.

Finally, the common law presumption of doli incapax was identified as the focus of this thesis, and its current status in Australia was briefly outlined. The doli incapax presumption is periodically under threat of abolition, mostly when a young person commits a serious offence. The debate surrounding the utility and applicability of doli incapax lacks empirical grounding, and this thesis therefore aims to set a foundation for this gap to be addressed. The following chapter deconstructs doli incapax by placing the presumption in a historical context, discussing legal precedent related to doli incapax and ultimately arguing that decision making and moral judgement are psychological abilities fundamental in determining criminal culpability under doli incapax.
Chapter 2
Deconstructing Doli Incapax

The previous chapter discussed how and when young people are given rights and responsibilities as they transition through adolescence. It was highlighted that young people typically become eligible for a right or responsibility when they reach a certain age, after which an individual competency assessment is utilised to assess whether that young person is competent enough to be granted the right or be held responsible. This is true of holding young people criminally culpable for their offending behaviour. In Australia, young people are liable to be held criminally responsible from the age of 10, as long as it can be demonstrated by the prosecution that the young person in question is doli capax, or competent enough to be held criminally culpable. This applies until the age of 14, after which young people are presumed doli capax. The onus then shifts to the defence to show the young person is doli incapax in order to avoid being held criminally culpable. This process allows for some flexibility in how and when young people are held criminally responsible between the ages of 10 and 14, and recognises that young people develop the competencies key to criminal culpability at different rates during adolescence (Crofts, 2012a). However, it also makes the assumption that competencies key to understanding criminal behaviour as seriously wrong significantly improve at ages 10 and 14.

This chapter looks at the presumption of doli incapax in more detail by firstly putting it in a historical context, tracing it to Australia from English law. After this, common law and statutory iterations of the doli incapax criteria across Australia’s states and territories are presented, and the underlying assumptions that such criteria make about young people’s development are discussed. This thesis focuses on the common law wording of doli incapax, and the remainder of
the chapter deconstructs the presumption as it is outlined above. In deconstructing *doli incapax*, debates about the meaning of *seriously wrong* versus *naughty* are examined, as well as the types of evidence that is commonly used to rebut *doli incapax*, including fleeing the scene and making a false alibi. Finally, moral reasoning and decision making are identified as the psychological abilities presumed to underpin the common law *doli incapax* criteria, and these abilities form the focus of Chapters Three and Four.

**The Historical and Current Status of *Doli Incapax***

*Doli incapax* is a legal presumption that can be traced to Rome in 450 B.C. (Cipriani, 2009). Its basic notion is that young people of a certain age do not possess the requisite mental maturity to be considered legally culpable for their criminal behaviour. The *doli incapax* presumption as it currently functions in Australian law was inherited from English common law, where it had been present in some form since 688 A.D. (Cipriani, 2009). Historically, the principle stated that children under the age of seven did not possess the requisite mental state or *mens rea* to form intent and be held accountable for their criminal actions, even if it could be shown that they had committed the offence (or *actus reus*) in question (*C (A Minor) v DPP (1996) 1 AC 1 at 38*). In this early form, *doli incapax* was not rebuttable, and did not apply after the age of seven; young people above this age were held fully responsible for their criminal actions, as discussed in the previous chapter. Being presumed *doli incapax* under the age of seven and *doli capax* thereafter was consistent with social constructions of childhood and adulthood at the time. As social understandings of young people evolved, *doli incapax* also evolved to include a rebuttable age range between the ages of 7 and 14 (Cipriani, 2009).
As the *doli incapax* presumption was inherited from England, it was initially enshrined in common law, and remains in common law form in New South Wales, South Australia, and Victoria. The other Australian states and territories (Australian Capital Territory, Northern Territory, Queensland, Tasmania, Western Australia, and the Commonwealth) have enshrined *doli incapax* in statute, and the wording of the *doli incapax* criteria varies in each of these jurisdictions. However, in jurisdictions where *doli incapax* remains in common law, including Victoria, between the ages of 10 and 13 the prosecution must show that the young person knew what they were doing was *seriously wrong* and not just *naughty* or *mischievous* at the time of the offence (*C v DPP (1996)* 1 AC 1 at 38). It is the common law wording that will be the focus of this chapter, as the presumption is at greater risk of abolition in states that have yet to solidify *doli incapax* in statute, and because Victoria is the state in which the author resides.

Around the world, *doli incapax* is utilised in 55 of 192 United Nation Member States including Fiji, Singapore, Turkey, India, and Kenya (see Cipriani, 2009 for a full list). The ages at which *doli incapax* is applied varies greatly throughout the world, with France utilising *doli incapax* from 0 to 18, in lieu of a minimum age of criminal responsibility, Germany and Italy utilising *doli incapax* from 14 to 18 years of age, and Hong Kong, Vanuatu, New Zealand, and Trinidad and Tobago applying *doli incapax* from 10 to 13 (inclusive), as Australia does (Cipriani, 2009). Different parts of the world inherit *doli incapax* from different origins. Cipriani (2009) identifies that approximately 40 of the 55 countries that have a *doli incapax* presumption inherited it from English common law, typically in the process of British colonisation. Despite the varied origins of the presumption, *doli incapax* is designed to function in primarily the same way; to protect young people from being held criminally culpable for their actions when they may not
have understood them fully. As such, *doli incapax* is widely used across the world, and is representative of a consensus that because adolescent development is varied, flexibility is necessary when ascribing criminal responsibility to young people to ensure only those young people who are competent are held responsible (Crofts, 1998; 2003)

**Debates Regarding Doli Incapax**

As Western judicial systems have shifted to recriminalise the processing of young offenders, the utility of *doli incapax* has periodically been brought into question (Crofts, 2012b; Jacobson, 2012, Slater 2013). As mentioned in the previous chapter, the abolishment of *doli incapax* is often called for when a young person commits a serious violent offence (Cashmore, 2000; Cornwall, 2013; Green, 2008). Such an offence brings *doli incapax* into the mainstream media (where it is infrequently discussed), and can re-ignite the debate about needing to hold young people increasingly responsible for their offending behaviour. This “get tough” rhetoric typically depicts modern young people as more “mature” than previous generations, due to better nutrition, education and interaction with technology (Doherty, 2001; *DPP v W* [1999]; Tobin, 2008). Because of this perceived increase in maturity in recent generations, it is argued that young people should not receive concessions based on their developmental status, but should be held fully responsible for their criminal behaviour. That is, *doli incapax* should be removed from the law, or reduced to apply to a smaller age range (Jacobson, 2012).

Such an argument not only ignores the large body of psychological literature exploring the nuances of adolescent development (some of which is discussed in the following chapters), it is also based on a premise that simply having access to the conveniences of modern life results in young people
developing maturity earlier. In fact, in legal circles it has been argued that “better formal education and earlier sophistication do not guarantee that the child will more readily distinguish right from wrong” (C (A Minor) v DPP [1995] 2 WLR 392 at 396). Thus, the argument that young people possess the relevant competencies to be held culpable at a younger age than in previous generations is a claim often made without reference to relevant research, with the goal of recriminalising young people by altering or abolishing *doli incapax*. Even though the public debate surrounding *doli incapax* often lacks reference to empirical research, media coverage of such has the potential to affect lasting legislative change. The James Bulger case exemplifies the power of the media in leading a moral panic, which resulted in the abolition of *doli incapax* in Britain.

In 1993, two 10 year old boys, Robert Thompson and Jon Venables, abducted two-year-old James Bulger while he was shopping with his mother in Liverpool, England. They subsequently beat, tortured, and killed James Bulger, and left him on a set of train tracks where he was ultimately run over by an oncoming train and found two days later (Cornwall, 2013; Green, 2008). Understandably, the public were outraged at the behaviour of Thompson and Venables, and intense media coverage regarding the criminal culpability of the two 10 year olds, as well as young people in general, was sustained for a lengthy period of time. The case made the public aware of the *doli incapax* presumption, and triggered public concern that Thompson and Venables could be found *doli incapax* and therefore not responsible for their actions. In fact, Thompson and Venables were viewed as *doli capax*, charged with murder and were tried in the adult court system (Wolff, Alexander & McCall Smith, 2000). They were convicted in November of 1993, making them the youngest convicted murderers in Britain for 300 years, and were
detained “at Her Majesty’s pleasure” for a minimum of eight years (Cornwall, 2013; Wolf et al., 2000).^{20}

Although Thompson and Venables were deemed *doli capax* and held criminally culpable, the *Bulger* case placed *doli incapax* in the public eye, and the possibility that young people who committed offences could be exempt from criminal sanctions if found *doli incapax* sparked a broader debate about the ongoing utility of the presumption. The criticisms of *doli incapax* were either ideological in nature, or centred around the application of the presumption in practice. It was argued that *doli incapax* is illogical in practice, because “normal” children are more likely to rebut the presumption and be held criminally responsible for their actions than children from damaged backgrounds (Bandalli, 1998). Further, the presumption that young people under the age of 14 need protection from the full force of the law was positioned as archaic, and in need of review when applied to “modern” young people (Bandalli, 1998). These arguments will be discussed further below, but essentially the ongoing utility of *doli incapax* was questioned in light of the *Bulger* case.

The public debate regarding *doli incapax* placed pressure on political leaders to abolish the presumption. The then shadow Home Secretary Tony Blair utilised the public’s outrage to start a broader moral panic about the state of law and order in England, stating the Bulger case reflected that “[t]here is something very wrong and very sick at the heart of our society” (Daily Mirror, 22 February, 1993, as cited in Green, 2008). Subsequently, a White Paper entitled “No More Excuses” was prepared, in which it was argued that the ideological premise of *doli incapax* requiring the prosecution to demonstrate the young person is competent

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^{20} In 1994, this sentence was increased to 15 years following a petition signed by 278,000 calling for Thompson and Venables to never be released. The original sentence of eight years was reinstated in 1999 by the European Court of Human Rights (Cornwall, 2013).
before holding them culpable “flies in the face of common sense” (British Home Office, 1997) (see Hakkert, 1998 for a summary of this White Paper). This argument implied that young people possess the relevant competencies to be held culpable from the minimum age of criminal responsibility, well before the age of 14. Such an argument was not supported by empirical evidence, as it appealed to “common sense”. One of the problems with this “common sense” critique of *doli incapax* is that it does not consider the varying rates at which young people develop competence, especially during early adolescence (discussed further in the following chapters).

On the back of such intense media coverage of the James Bulger case, the ensuing public outrage, and a strong narrative of needing to “get tough” on youth crime, the rebuttable portion of the *doli incapax* presumption was removed in 1998, after Tony Blair’s government was elected in 1997 (s.34 *Crime and Disorder Act 1998*). By abolishing *doli incapax*, young people from the age of 10 are now presumed *doli capax* in England (and Wales, which is governed by the same laws). Thus, British law now assumes that from the age of 10, young people engage in criminal behaviour by making decisions that are comparably rational and logical to decisions of adults (Bandalli, 1998; Crofts, 2009). These assumptions are contrary to the current empirical understanding of young people’s abilities, which will be reviewed in Chapters Three and Four, and reflect public outrage at the behaviour of two young offenders, not an understanding of young people or even young offenders as a whole. Further, without *doli incapax*, England no longer recognises that the development of young people’s legally relevant competencies is variable during adolescence, and that some young people may not fully understand the seriousness of their criminal actions.
Similar changes have been made in neighbouring jurisdictions; Ireland followed England’s lead by abolishing *doli incapax* in 2006 (*Criminal Justice Act 2006*). Although Ireland have raised their minimum age of criminal responsibility from seven to 12 years of age (s.52 *Children Act 2001*), children aged 10 to 12 can be prosecuted for murder, rape and aggravated sexual assault under s.129 of the *Criminal Justice Act 2006*. Rather than using *doli incapax* to ensure young people under the age of 12 are uniformly exempt from criminal prosecution, the minimum age of criminal responsibility is conditional upon offence. The inconsistency in the assumptions that underlie *doli incapax* in this jurisdiction points to a political stance that young people who commit certain offences have forfeited their right to be irrefutably presumed *doli incapax*. The James Bulger case is an extreme but apt example of media coverage, public outrage and political action having a lasting impact on the processing of young offenders. Similar examples of proposed and enacted legislative reforms following sensationalist media coverage are evident in numerous jurisdictions around the world including Japan, Slovakia and Australia (see Cipriani, 2009 for a more comprehensive review of world-wide examples).

Ultimately, the debates that surround high-profile cases of juvenile offending have the potential to result in lasting legislative change.

An Australian case that sparked debate regarding *doli incapax* took place in New South Wales (NSW) in 1998, when a 10-year-old boy, referred to as LMW in the court proceedings, pushed six-year-old Corey Davis into the Georges River. Evidence was submitted that Corey Davis had told LMW that he could not swim before he was pushed into the lake. Upon pushing Davis into the lake, LMW left the scene reportedly to “get help” (*R v LMW* [1999] NSWSC 1128). When informally questioned by police at his home and the police station, LMW admitted to pushing Davis into the lake, and was subsequently charged with manslaughter, the
youngest person in Australian history at that time to have been tried for manslaughter (Cairney, 2001). In late 1999, LMW was acquitted by a Supreme Court Jury, owing to numerous factors including his impaired intellectual functioning, poor social skills and low academic achievement, which contributed to him being deemed *doli incapax* and thus not criminally culpable for his actions (Cairney, 2001; Phillips, 1999a; 1999b).

The *Davis* case sparked debate about the utility of the *doli incapax* presumption in the Australian context, just as the *Bulger* case sparked similar debate in England. Subsequently, the NSW Attorney-General’s Department Criminal Law Review Division published a discussion paper arguing that young people are able to discern right from wrong at an earlier age than in previous generations, and thus the rebuttable portion of *doli incapax* between 10 and 13 years of age (inclusive) should be amended to apply only to young people aged 10 to 11 years of age (inclusive) (Cashmore, 2000; Schetzer, 2000). The discussion paper argued that 12 years of age would be a suitable age for the direction of the presumption to change, as 12 years of age signals a transition from primary to high school in Australia, and would recognise that young people are more “sophisticated and mature” today than in previous generations (Schetzer, 2000).

In a similar vein to the argument put forward in England, the above rationale for reducing *doli incapax* does not consider the relevant developmental literature to inform a bright-line distinction at 12 years of age. Even without explicit reference to developmental literature, the argument makes inherent assumptions regarding development, including that transitioning to high school marks a threshold after which young people possess the legally relevant psychological abilities to be held culpable. Further, the psychological abilities that make young people more “sophisticated and mature” today than they have been in
previous generations are not operationalised. *Doli incapax* was ultimately not
lowered in NSW, and remains in the original common law form, governing
individuals 10 to 13 (inclusive). However, the *Davis* case is not an isolated event,
with other Australian jurisdictions experiencing similar cases. Thus, what the *Davis*
case and others like it highlight is that *doli incapax* can be debated and under
threat of abolition on the back of one serious offence committed by a young
person. Further, the debate surrounding *doli incapax* typically lacks empirical
evidence.

On the opposite of the debate, there are calls for the minimum age of
criminal responsibility to be raised from 10 to 12 years of age (Jacobson, 2012;
Jesuit Social Services, 2013; UN Committee on the Rights of the Child, 2007). As
mentioned, the worldwide standard for the minimum age of criminal responsibility
is 12 years of age, putting Australia’s minimum age of 10 well below this.
Proponents of this perspective state that young people aged 10 to 12 should be
irrefutably presumed *doli incapax*, as these young people are likely to be highly
disadvantaged, and in need of social support rather than legal sanctions. Such an
opinion was echoed by Megan Mitchell, the New South Wales Commissioner for
Children and Young People in 2011, where she argued the minimum age of
criminal responsibility should be raised to 12 years of age, with a view to later
raising it to 14 and then 16. Mitchell (2011) argues these legislative changes would
align with world standards, and the psychological literature relating to the brain
and psychosocial development of young people. More recently, the Victorian Law
Reform Commission asked for submissions regarding the way in which *doli
incapax* is tested within the legal system, in line with similar developmental issues
including mental impairment and unfitness to stand trial (Victorian Law Reform
Commission, 2013). Thus, debates surrounding doli incapax are ongoing and opinions as to legal reforms are divided.

**Juvenile Offending in Context**

Serious offences committed by young people aged 10 to 13 are uncommon, with young people aged 10 to 13 making up a relatively small proportion of the cases processed in the Children’s Court of Australia. Of the 27,847 cases adjudicated in Australia’s Children’s Courts in 2011-12, 7.4% (2,057) were for persons in the doli incapax age range between 10 and 13 (inclusive) (Australian Bureau of Statistics, 2013). Thus, not only is offending behaviour uncommon in early adolescents, but they commit a small proportion of juvenile crime when compared to older adolescents. This is consistent with the age-crime curve as discussed in Chapter One; offending behaviour is engaged in at a relatively low rate in early adolescence, peaks between the age of 16 and 18, and then declines from early adulthood.

In terms of serious offences, young people aged 10 to 18 in Victoria who commit one of seven death-related offences (murder, attempted murder, manslaughter, child homicide, defensive homicide, arson causing death, and culpable driving causing death) are transferred to adult court21. From 2000 to 2009, only 38 cases were transferred from the Victorian Children’s Court to an adult court (Little & Karp, 2012). This accounts for 0.05% of the offences processed in the Children’s Court from 2000 to 2009, indicating that young people commit death-related offences infrequently22. Of the 38 cases that were transferred to adult court, few involved young people under the age of 14, who

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21 ss.356(3) & 356(4) Children, Youth and Families Act 2005 (Vic)
22 The Little & Karp (2012) paper did not provide comparable statistics regarding the number of death-related offences committed by adults. By way of comparison, the Australian Bureau of Statistics reports that there were 96 convictions for murder, attempted murder, manslaughter, and driving causing death in the 2011-12 financial year.
were presumed *doli incapax*. In fact, none of those 38 young people were under the age of 12. Little and Karp did not present the number of these cases that successfully maintained their presumption of *doli incapax*. It may be that the young people who were found *doli incapax* were not convicted and would therefore not have been recorded.

While the *Bulger* and *Davis* cases are widely publicised cases of violence that sparked debate about *doli incapax*, more common offences committed by young people can also reignite the debate of how to handle the criminal culpability of juveniles. One example that commonly occurs across Australia is young people dropping rocks, generally from freeway overpasses, onto the traffic below. Instances of young people dropping rocks have been reported from as young as 10 years of age (Herald Sun, 2009a; news.com.au, 2009) up to 16 and 17 years of age, often committed by groups of young people (Dowsley, 2009; Herald Sun, 2009b; Herald Sun, 2012; Levy, 2012; McGregor, 2011). However, many incidents of rock throwing are reported without locating the person(s) responsible (3AW news, 2012; Herald Sun, 2011; Williams, 2009). Throwing objects at cars, trains and buses is a common occurrence; 1300 instances were reported in Perth in 2008-09, a rise from 864 in 2007-08 (Quigley, 2009; Taylor, 2009). Considering the rate at which rocks are thrown at various vehicles, and the potential for serious injury or death, many states have introduced legislation in order to specifically combat rock throwing, including New South Wales\(^{23}\), South Australia\(^{24}\), Northern Territory\(^{25}\), Queensland\(^{26}\), and Western Australia\(^{27}\). These instances of rock throwing, while common, serve as a reminder to the public that young people are committing

\(^{23}\) s.49A *Crimes Act 1990* (NSW)
\(^{24}\) s.32A *Criminal Law Consolidation Act 1935* (SA)
\(^{25}\) s.108A *Criminal Code Act 1983* (NT)
\(^{26}\) s.26 *Summary Offences Act 2005* (Qld)
\(^{27}\) s.256 *Road Traffic Code 2000* (WA)
reckless offences likely to endanger the lives of others, contributing to the perception that young people are increasingly violent, and fuelling the public opinion that criminal justice should "get tough" on these individuals.

Considering the high-profile nature of the *Davis* case and the numerous cases of rock throwing that contribute to the public perception of young people being dangerous, vignettes depicting dropping rocks and pushing someone into a lake are incorporated into the method of this study. Having placed *doli incapax* into a historical context, and highlighted the circumstances under which *doli incapax* is often critiqued or debated, the rest of this chapter deconstructs the wording and legal application of the presumption in more detail.

**Doli Incapax: Current Use and Common Debates in Australia**

In Victoria, and other states governed by common law, there are five main principles of *doli incapax*, as articulated by Lord Lowry in *C (A Minor) v DPP* [1996] 1 AC 1 and affirmed by Australian law in Newman J in *R v CRH* [1996]. The presumption is summarised by Johnston (2006) as follows:

1. The prosecution must rebut the presumption of *doli incapax* as an element of the prosecution case;
2. The child knew the act was seriously wrong as opposed to naughty;
3. The evidence relied upon by the prosecution must be strong and clear beyond all doubt or contradiction;
4. The evidence to prove the accused's guilty knowledge, as defined above, must not be the mere proof of doing the act charged, however horrifying or obviously wrong the act may be;
5. The older the child is the easier it will be for the prosecution to prove guilty knowledge (p.2).
The law assumes a linear acquisition of psychological abilities between the ages of 10 and 13, with *doli incapax* more easily rebutted the closer the young person is to their 14th birthday (Bandalli, 1998; *C v DPP (1996)* 1 AC 1 at 38). However, the wording of the common law presumption, even elaborated as above, leaves many questions unanswered, including how much easier it should be to rebut *doli incapax* as the young person gets older. The above wording also gives little guidance as to how to operationalise the terms *seriously wrong* and *naughty*, and how to evaluate them with respect to individual cases. How does *seriously wrong* differ from *naughty*? What is the difference between wrong and *seriously wrong*? Is it enough for a young person to know the difference between right and wrong? What is meant by the concepts of right, wrong, naughty and seriously wrong is unclear, and attempts to clarify their conceptual differences have been made in several examples of case law.

*Doli Incapax Terminology*

Early case law grappled with the concepts of *naughty, wrong* and *seriously wrong*. In *Stapleton v R (1952)* 86 CLR 358, the High Court stated that the *doli incapax* test was “whether the accused knew that what he was doing was *wrong according to the ordinary principles of reasonable people*” (italics added), and went on to state that an individual will only be held criminally responsible if the young person “is capable of remembering that the act is wrong, contrary to duty, and such that in any well-ordered society would subject the offender to punishment” at the time of the offence. In this context, rebutting *doli incapax* does not mean demonstrating the accused understood that their actions were illegal or contrary to the law, but rather that they understand the wrongness of a criminal act from a moral standpoint. Thus, understanding the seriousness or wrongness of an action
does not necessarily require knowledge that the action is illegal. However, the *doli incapax* standard in New Zealand states that the accused must know either that the act or omission constituting the offence charged was *wrong* or that it was *contrary to law*\(^{28}\) (italics added). Thus, an understanding that the actions are either illegal or morally wrong is required in New Zealand to be found *doli incapax*. Further, the New Zealand standard requires the young person in question knew their actions were *wrong*, rather than *seriously wrong* at the time of the offence, potentially making it easier to find young people *doli capax* in New Zealand than Australia.

In operationalising *seriously wrong*, Judge Salter in *R v Gorrie* [1918] stated that the prosecution “must satisfy the jury that when the boy did this he knew that he was doing what was wrong – not merely what was wrong but what was *gravely wrong, seriously wrong*\(^{29}\)” (italics added). From this comment, it is clear that *seriously wrong* is to be regarded as distinct from *wrong* in Australia; the accused must understand the gravity of their actions at a deeper level than being simply *wrong*. This sentiment was echoed by Lord Lowry in *C v DPP* [1995] when he qualified wrong as meaning “gravely wrong, seriously wrong...*evil or morally wrong*\(^{30}\)” (italics added). Even so, these qualifications do little to operationalise what is meant by the terms *seriously wrong* and *naughty*, and so the comparison between the two terms is relied upon: “I agree that the phrase ‘seriously wrong’ is conceptually obscure ...but, when the phrase is contested with ‘merely naughty or mischievous’, I think the meaning is reasonably clear” (Lord Lowry in *C v DPP* [1996] at 33D). So, *naughty* is distinct from *wrong* and *seriously wrong*, and *doli incapax* requires the demonstration, beyond a reasonable doubt, that the accused

\(^{28}\) s.272A(d) *Children, Young Persons, and Their Families (Youth Courts Jurisdiction and Orders) Amendment Act 2010*

\(^{29}\) 83 JP 136

\(^{30}\) 2 All ER 43 at 48
knew their actions were *seriously wrong* at the time of the offence, as distinct from both *wrong* and *naughty*. From this, it is clear that Judges frame the criteria used to assess *doli incapax* as a continuum, spanning from naughty, through wrong, to seriously wrong. However, this continuum of “wrongness” is not mathematical but conceptual in nature; that is, the difference between naughty, wrong, and seriously wrong is not necessarily proportionate.

**Statutory Versions of Doli Incapax in Australia**

In an effort to remove some of the mystery surrounding the common law wording of *doli incapax*, and ensure that *doli incapax* was uniformly applied to cases involving young people aged 10 to 13\(^{31}\), several Australian states and territories have enshrined *doli incapax* in statute. However, many of these jurisdictions have altered the wording of the presumption from its original form, thus changing the type of proof required to rebut *doli incapax*. In Queensland the *doli incapax* presumption states that:

A person under the age of 14 years is not criminally responsible for an act or omission, unless it is proved that at the time of doing the act or making the omission the person had capacity to know that the person *ought not* to do the act or make the omission\(^{32}\) (italics added).

The Queensland criteria are a full departure from the original common law presumption, retaining none of the original constructs of *seriously wrong* or *naughty*. The exact same wording as Queensland is seen in Western Australia\(^{33}\), and similar wording is used in the Northern Territory:

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\(^{31}\) *Doli incapax* is thought to be inconsistently applied in common law jurisdictions, especially rural and regional areas (Cashmore, 2000).

\(^{32}\) s.29(2) *Criminal Code Act 1899* (Qld)

\(^{33}\) s.29 *Criminal Code Act Compilation Act 1913* (WA)
A person under the age of 14 years is excused from criminal responsibility for an act, omission or event unless it is proved that at the time of doing the act, making the omission or causing the event he had capacity to know that he ought not to do the act, make the omission or cause the event\(^{34}\) (italics added)

and in Tasmania:

No act or omission done or made by a person under 14 years of age is an offence unless it be proved that he had sufficient capacity to know that the act or omission was one which he ought not do or make\(^{35}\) (italics added)

These jurisdictions therefore do not require the prosecution to show the accused knew their actions were seriously wrong at the time of the offence, rather that they had the capacity to know that they should not have committed the act. This vastly changes the standard that young people need to meet before being deemed doli capax, and essentially makes it easier for young people to be deemed culpable for their offending behaviour if the prosecution only have to show a capacity to know, rather than actual knowledge that the accused should not have committed the act. The assumptions underlying the legislative criteria in Queensland, Western Australia, Northern Territory and Tasmania are thoroughly different from those that underlie the common law wording. Because the wording of doli incapax in those states is broader, a young person’s capacity to know that they should not have committed the offence would presumably be linked to their broader cognitive functioning including memory.

\(^{34}\) s.38(2) Criminal Code Act (NT)

\(^{35}\) s.18(2) Criminal Code Act 1924 (Tas)
The Australian Capital Territory (ACT) has taken a different approach to enshrining *doli incapax* in legislation. The wording of the presumption in the ACT is that

a child aged 10 years or older, but under 14 years old, can only be criminally responsible for an offence if the child knows that his or her conduct is *wrong*\(^{36}\) (italics added).

This wording is clearly based on the common law wording, however the ACT make no distinction between wrong and seriously wrong, essentially lowering the level of proof required to find a young person criminally responsible in that they only have to have known their actions were *wrong* rather than *seriously wrong*, similar to New Zealand. Further, the wording in the ACT makes no reference to the young person knowing their conduct was wrong at the time of the offence. By the time a young person has been interviewed by the police, charged, and is appearing in court, it is likely that they know the alleged behaviour is *wrong*, or is at least perceived that way by the court system.

Securing *doli incapax* in legislation means that in those jurisdictions, *doli incapax* is now considered in every case involving a 10 to 13 year old, removing the potential for legal practitioners to fail to raise *doli incapax*. However, the alterations to the original common law wording mean that the jurisdictions discussed above have essentially lowered the threshold for deeming these individuals *doli capax*. This means that age is still utilised as a herding mechanism, making young people aged 10 to 13 eligible to be held responsible for their criminal behaviour, while the individual competency assessment that is *doli incapax* has been altered. Having placed the various forms of *doli incapax* in an

\(^{36}\) s.26(1) Criminal Code 2002 (ACT)
Australia-wide context, this thesis is concerned with the common law wording as utilised in South Australia, New South Wales and Victoria, that the prosecution must show the accused knew their actions were *seriously wrong* as opposed to *naughty* at the time of the offence.

**Evidence Used to Rebut Doli Incapax in Australia**

Along with how the constructs inherent in *doli incapax* are defined, the kind of evidence that is admissible in demonstrating the accused knew their actions were seriously wrong at the time of the offence, is another controversial area of law. Case law dictates that “asserting a false alibi, rendering a victim incapable of identifying the accused or preventing a victim from summoning assistance” can be used to rebut the presumption, together with any previous police involvement the accused has had and “evidence of the accused’s education or the surrounding circumstances of the offence, or with observation of the accused’s speech and demeanour” *(F (A Child) v DPP [1998] 101 A Crim R 113)*. There is some debate as to whether fleeing the scene is evidence of the accused understanding that their actions were seriously wrong. In the English case *C (A Minor) v DPP [1996]*, the presiding magistrate found the fact that *C* ran away when police saw him tampering with a motorcycle was evidence that he understood his actions to be seriously wrong, *doli incapax* was rebutted and *C* was convicted and fined *(Power, 2013)*. Note that this case occurred after the *Bulger* case, where dissent for *doli incapax* was growing. On appeal, Lord Jauncey commented that it is “common sense” to assume *C*’s leaving the scene indicated that he understood his actions were seriously wrong *(Re C (A Minor) [1995] 2 WLR 383)*. However, it is now widely accepted that “running away is usually equivocal...because flight from the
scene can as easily follow a naughty action as a wicked one” (C (A Minor) v DPP [1995]).

There is further disagreement within the case law as to whether the seriousness of the act itself can be used as evidence that the accused knew their actions were seriously wrong. Lord Lowry stated that “a guilty knowledge that he was doing wrong must be proved by the evidence, and cannot be presumed from the mere commission of the act”\(^\text{37}\). While the law recognises the young person has committed a crime (\textit{actus reus}), it must be shown that the individual understood their actions to be \textit{seriously wrong} thereby having the requisite \textit{mens rea} as well. However, it has since been argued by Cummins JA that “proof of the act as themselves may prove requisite knowledge if those acts establish beyond a reasonable doubt that the child knew that the act or acts themselves were seriously wrong”\(^\text{38}\). That is, if the young person knew the act was seriously wrong at the time of the offence, and they committed that act, \textit{doli incapax} can be successfully rebutted. Callaway JA made similar comments in the same trial, that “the act or acts constituting the offence, in conjunction with the child’s age, may be sufficient on their own to discharge the onus”.

Crofts (1998) argues that the type of act, rather than the seriousness, can be used to rebut the presumption. If the young person has had prior experience in paying for goods, for example, then it may be easier to show that the young person knew stealing was seriously wrong. Similarly, if the young person has previously been before the court on similar charges, it may be successfully argued they understood their actions were seriously wrong, but this may not apply if the current charges are wholly different. For example, if the young person is appearing

\(^{37}\) C v DPP [1995] 1 AC 1 at 38
\(^{38}\) R v ALH [2003] VSCA 129
before the court for shop theft, and has appeared for these charges previously it
would be easier to rebut doli incapax, as it could be shown they possess the
knowledge that shop theft is illegal. Alternatively, it would not be as easy to
demonstrate that the individual had prior knowledge their actions were seriously
wrong if the same young person was appearing for a violent offence, as they had
not previously fronted the court on similar charges.

In some cases, the “presumption of normality” has been utilised to rebut
doli incapax (Crofts, 1998). This is the presumption that a “normal” child of that
age would have known that the offence was seriously wrong. Thus, if the accused is
of normal development, it is reasonable to assume that they would have known the
offence was seriously wrong. However, Crofts (1998) makes that point that doli
incapax does not make this presumption, but instead presumes young people aged
10 to 13 to be collectively worse decision makers than individuals aged 14 and
over. Thus, “the average development of [young people] under 14 is not sufficient
to make them criminally responsible” (p.189). The prosecution must therefore
show that the accused is at the developmental level of 14 year olds, not a normally
developing 10 to 13 year old, in order to rebut the presumption (Crofts). If the
prosecution only have to show that the accused was developing normally, the
presumption is reversed and the defence then must show that their client was not
developing normally, thereby undermining the intended purpose of doli incapax
(Crofts). The ongoing debate about the kind of evidence that can be used to
establish doli capax highlights that this process is unstandardised. Nevertheless,
establishing a young person appreciated their actions were seriously wrong as
opposed to naughty is a complex process that is more involved than simply being
able to label their behaviour as seriously wrong or naughty after the fact.
Inherent Psychological Assumptions Made by *Doli Incapax*

Aside from the variation in how *doli incapax* is rebutted, the presumption itself makes key assumptions about the psychological abilities of the young people it governs. These abilities underlying *doli incapax* have been operationalised in numerous ways. Gross (1979) states that *doli incapax* requires young people to evaluate the wrongfulness of their actions in the moment, while foreseeing risks and potential harm. Bandalli (1998) states that it is a lack of maturity and understanding that makes an individual *doli incapax*. Sir Thomas Birmingham M.R. states that young people are protected from the full force of the law as they are liable to be vulnerable and impressionable, lacking the maturity to weigh the longer term against the shorter, lacking the insight to know how they will react and the imagination to know how others will react in certain situations, lacking the experience to measure the probable against the possible (*Re S (A Minor)(Independent Representation) [1993] 2 FLR 437 at 448*).

So, in order to be presumed *doli capax*, an individual must be able to morally reason in order to understand the wrongfulness of their actions, and they must possess decision making abilities to weigh short and long term consequences, foresee risks and potential harms, and project their reactions and the reactions of others into the future. This thesis therefore asserts that the psychological abilities of moral judgement and decision making are central to the presumption of *doli incapax*. From 10 to 13 years of age, the law assumes young people's moral judgement and decision making to be poorly developed, due to their age, lack of maturity, and lack of life experience. By age 14, the presumptive direction changes, and the law assumes these psychological abilities have reached a critical threshold.
and that the average 14 year old has “good enough” moral judgement and decision making abilities to be held responsible for their criminal actions. However, these are just the age-based presumptions used by the law to herd young people into two groups. From the age of 10, an individual assessment can be employed to determine the competence of a particular young person. This allows for variance within the two broader groups; some young people who are presumed *doli incapax* may be competent, and some who are presumed *doli capax* may lack competence. The following two chapters will explore the developmental theory then research in relation to moral judgement and decision making to inform the current psycho-legal investigation of *doli incapax*, which will be outlined in Chapter Five.

**Chapter Summary**

Young people aged 10 to 13 (inclusive) are conditionally held responsible for their criminal behaviour (deemed *doli capax*) based on their individual competence. Determining criminal culpability on an individual basis recognises variability in the rate young people develop the necessary competencies, including moral judgement and decision making. In order to deconstruct *doli incapax*, the presumption was examined from a historical, psychological, and Australian legal perspective in this chapter.

In Australia, *doli incapax* was inherited from English common law. The presumption has evolved as the social understanding of adolescent development has changed. More recently, debates about the ongoing utility of *doli incapax* in a modern legal context have typically been ignited when a young person commits a serious violent offence. England abolished *doli incapax* after such an incident, and similar debates are periodically engaged in within Australia, often following violent offences. In actual fact, serious violent offences are rarely committed by
young people aged 10 to 13. While the public are understandably shocked when such offences occur, seeking to recriminalise adolescent offending by altering or abolishing *doli incapax* has a lasting impact on the processing of all adolescent offending behaviour, including more common offences, such as rock throwing.

In Australia, some states and territories have enshrined *doli incapax* in statute, while the presumption remains in common law in other Australian jurisdictions. It was argued that the statutory versions of *doli incapax* across Australia have made it easier to be deemed *doli capax* and held criminally culpable by altering the original wording of *doli incapax*. As the common law wording of *doli incapax* is the focus of this thesis, the legal use of the terms *seriously wrong*, *wrong* and *naughty* was discussed. Such terms were argued to be distinct from one another and are thought to exist on a conceptual continuum. Further, case law dictates that evidence such as giving a false alibi, appearing to avoid being detected or identified as having committed the offence, and educational background are factors used to rebut *doli incapax*. By contrast, committing the act itself, fleeing the scene and demonstrating the young person is developing normally cannot be used to rebut *doli incapax*.

Through the above discussed *obiter dicta*, it was argued that there are two psychological abilities that underpin young people’s ability to determine seriously wrong from naughty in a potentially risky situation: moral judgement and decision making. The development of these abilities is key to being considered competent and therefore culpable for criminal behaviour. Discussions regarding the ongoing utility of *doli incapax* often fail to acknowledge that the presumption is fundamentally tied to psychological development. The next two chapters will discuss relevant developmental theory and then research in order to outline
current understandings of when young people acquire and how they apply moral
judgement and decision making abilities as they progress through adolescence.
Chapter 3

Competencies Underlying Doli Incapax: Theory of Decision Making and Moral Reasoning

So far, this thesis has focussed on how and when the law provides rights and holds young people responsible as they transition into adulthood. Chapter One established that holding young people criminally culpable is one high-stakes arena that deserves research attention. In particular, the competence-based provision of criminal culpability under *doli incapax* is frequently debated and under threat in Australian jurisdictions where it remains in common law (South Australia, New South Wales and Victoria). Chapter Two deconstructed the common law wording of *doli incapax* that governs 10 to 13 year olds (inclusive), requiring it be shown that the accused young person knew their actions were *seriously wrong* as distinct from *naughty* at the time of the offence, in order to be held criminally culpable. It was argued that the common law criteria makes inherent assumptions about the moral reasoning and decision making abilities of young people. Specifically, *doli incapax* presumes that young people between the ages of 10 and 13 should not be held responsible for their criminal behaviour in part because they lack competence in areas including moral reasoning and decision making. However, this presumption is rebuttable, and thus acknowledges that development is variable in early adolescence, and young people who are sufficiently competent should be held responsible for their criminal behaviour, while those who lack competence should be protected. By the age of 14, the law assumes that these key abilities have reached a critical threshold and the majority of young people are good enough at making decisions and moral judgements to be presumed criminally responsible for their actions.
This chapter and the next explore the development of moral judgement and decision making across legally-relevant ages in more detail. There is limited psychological research specifically concerning *doli incapax*, with the extant literature being largely written from a legal perspective. Considering this, Chapter Three and Four are designed to present pertinent psychological theory and research in order to guide this unique psycholegal investigation. Because this thesis marks a preliminary investigation into the area of *doli incapax*, the (lack of) previous research means that testing a particular theory in relation to age-based criteria governing the criminal culpability of young people would be premature. This thesis therefore does not aim to test any particular theory, rather the aim of this chapter is to distil the various theoretical perspectives relating to moral judgement and decision making in an effort to inform the design of this study and later assist in interpreting findings.

Moral judgement and decision making theories can be grouped into three broad categories; rationalist, dual-process, and psychosocial theories. Rationalist theories propose that moral judgements and decisions are made using a rational and logical process. The gold standard process according to rationalist theories would involve considering all decisional or judgement alternatives, weighing the costs and benefits of each, and choosing the option that maximises benefits and reduces costs. In a developmental sense, rationalist theories assume a linear acquisition of these competencies through adolescence. That is, children are assumed to make the least logical or rational decisions and judgements, with adolescents being more rational and logical in comparison, and adults more

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39 It is noted that numerous submissions have been made to legal bodies regarding the psychological literature that relates to *doli incapax* (see Mitchell, 2011 and Roufeil, Li, & Cameron, 2014 for examples), although these are not research pieces per se.

40 These broad categories are used as a means to group the literature. It should be noted that there is some overlap between these categories and editorial decisions have been made about where to place theories.
rational and logical again. These theories have been referred to as cognitive theories by some authors (Mann, Harmoni & Power, 1989; Steinberg, Cauffman, Woolard, Graham & Banich, 2009). Although the abilities described by these theories are cognitive, many of the components of dual-process and psychosocial theories and research are also cognitive abilities or influence cognitive processes. The term rationalist is therefore used in this thesis, as the assumption underpinning this body of work is that moral judgement and decision making abilities become increasingly rational as young people develop. On the whole, rationalist theories align well with the age-based assumptions made by the law, as both assume that decision making and moral judgement become increasingly logical and deliberative with age.

Dual-process theories conceptualise decision making differently than rationalist theories, and posit that there are generally two parallel processes at play when making decisions or moral judgements; an automatic, heuristic-based process which allows quick decisions or judgements to be made, and a deliberative, analytic process similar to that described by rationalist theories. These processes can be categorised as Type 1 and Type 2 processes respectively, and dual-process theories posit that Type 1 processes are generally preferred when making decisions and judgements, as they save time, effort, and cognitive resources. Dual-process theories are now widely accepted as a more accurate conceptualisation of decision making and moral reasoning than pure rationalist theories, as they can account for decisions and judgements that are made quickly or without engaging in a full rationalist decision or reasoning process. However, these theories (and the accompanying research) are in their infancy compared to the rationalist literature, and remain limited in their application to young people,
having been developed to describe the decision making and moral judgement abilities of adults.

By comparison, psychosocial theories recognise that young people often make more risky (and objectively worse) decisions than children and adults, owing to numerous social and emotional factors that uniquely influence their decisions and judgements (Scott, Repucci, & Woolard, 1995; Steinberg & Cauffman, 1996). These factors include peer influence, poor risk perception, increased sensation seeking, and impulsivity, among others. In contrast to rationalist theories, psychosocial theories predict that decision making and moral reasoning become objectively worse during adolescence, owing to the influence of psychosocial factors (Scott, et al., 1995; Steinberg & Cauffman, 1996). Both dual-process and psychosocial theories challenge the law’s view that the acquisition of key competencies is essentially linear from child to adulthood.

As mentioned, this thesis does not aim to test one of these theories in particular, nor does it aim to integrate the theories reviewed in this chapter. Rather, these theories represent different conceptualisations of the process by which decisions and moral judgements are made, with each theory exploring and explaining different aspects of each. This chapter will show that the process of moral judgement and decision making is more complex than the law assumes, and that the current age-based assumptions underlying doli incapax fail to consider numerous factors that are likely to impede the decisions and judgements of young people. The following chapter will evaluate the accompanying research before the present study is outlined in Chapter Five.
Rationalist Theories

The governing principles of early decision making and moral judgement theory were borne out of Jean Piaget’s extensive work on the logical reasoning abilities of children (Piaget, 1962). Piaget (1962) categorised the cognitive development of children and adolescents into four sequential stages. In the Sensori-motor stage, from birth to two years of age, Piaget argued that the child learns about objects in the environment, forming mental representations of objects. Once the child can represent objects in their mind, they have entered the Pre-operational stage. Children are said to be in Pre-operations from approximately two to seven years of age, until they have mastered the ability to internalise and mentally represent concepts, as well as objects, in their mind. After this time, Piaget proposed that children enter the first of two stages of Operations. Between approximately seven and 11 years of age children enter the Concrete Operational stage, where they are able to utilise their mental representations of the world around them and increasingly manipulate them in their mind. However, this skill is not universally applied to all tasks until the child reaches the Formal Operations stage, between approximately 11 and 14 or 15 years of age. Once in Formal Operations, the adolescent is able to generate hypothetical contingencies in their mind and systematically evaluate the consequences of each alternative by cognitively manipulating data. This ability is called hypothetico-deductive reasoning by Piaget and is key to being able to predict the outcomes of decisions.

While Piaget (1962) recognised that the logical reasoning abilities of young people continued to develop with practice into adulthood, his stage-based model of development asserts that by mid-adolescence, young people have attained the key abilities that are used by adults. In terms of *doli incapax*, Piaget’s theory aligns well with the presumption that by the age of 14, when Formal Operations is typically
reached, young people are able to make significantly better decisions than individuals who are younger and do not consistently use hypothetico-deductive reasoning. Further, *doli incapax* recognises the individual variability that Piaget theorised in the acquisition of Formal Operations; that some would attain those abilities at age 11, and others will take up to 14 or 15 years of age. The changes in *doli incapax* at ages 10 and 14 aligns well with this, and makes allowances for individual variability during these ages by assessing criminal culpability on an individual basis.

Piaget made a seminal contribution to the understanding of cognitive development. However, Piaget’s stage-based theory assumes that young people’s decision making is akin to adults’ by mid-adolescence, which does not recognise the qualitatively different social factors that influence the decision making and moral reasoning abilities of young people. For example, Piaget’s theory assumes that young people utilise the same decision making and moral reasoning processes as adults, and ignores the developmental factors that may get in the way of young people uniformly applying logical reasoning abilities to decision making situations, such as peer influence. The rationalist theories discussed below utilise the same foundation as Piaget’s work by presuming logical reasoning abilities underpin sound moral reasoning and decision making.

**Rationalist moral reasoning theories.** Before discussing early moral judgement theories, it is worth discussing what is meant by the terms moral judgement and moral reasoning respectively. Put simply, moral reasoning is the process by which moral judgements are made; moral judgements are the outcome of the moral reasoning process. Moral reasoning is the intentional, effortful process associated with consciously thinking before making a moral judgement as to whether something is right or wrong. As this chapter will demonstrate, not all theories
agree that moral reasoning is required to make a moral judgement, rather moral
judgements are conceptualised by some theories as more automatic than effortful.
Rationalist theories typically use the term moral reasoning, consistent with their
focus on the process people use to make their moral judgements, while dual-
process theories (reviewed later) typically utilise the term moral judgements, as
they propose not all moral judgements are made as the result of utilising a
reasoning process.

Kohlberg’s (1969) influential work is widely credited as beginning the field
of moral reasoning. Kohlberg proposed that moral development progresses
through three levels, which house two stages of moral development each:
Preconventional level (Stage 1 and 2), Conventional level (Stage 3 and 4) and
Postconventional level (Stage 5 and 6). Individuals at Stage 1 moral reasoning
apply moral rules in a concrete, rigid manner, focussing on punishment and
physical consequences, while also wholly respecting the authority of people in
positions of power (such as parents). By Stage 2, moral reasoning transitions to
thinking more about the individual getting their needs met, with little
consideration for what that means for others. Moral reasoning about other people
is restricted to thinking about fair trades (doing something for someone else only if
they do something for you). Again, reasoning at this level is preoccupied with
physical and pragmatic concerns rather than more abstract concepts (Kohlberg &
Hersh, 1977).

At the Conventional level, the moral reasoning employed by individuals at
Stage 3 broadens to consider the intention or thinking of the actor. Moral
reasoning still utilises stereotypical images of what is right and wrong, but
reasoning at this stage is characterised by a wider consideration of the
implications for the individuals’ family or community rather than just themselves.
At Stage 4, moral reasoning broadens again, with individuals at this stage considering the ramifications of their actions on both their family and the wider community, as well as respecting larger bodies of authority (such as the law). Once moral reasoning transitions to the Postconventional level at Stage 5 and 6, it expands again, focusing more on the rights and standards agreed upon by a whole society, while recognising that such rights and standards are socially constructed and may change (Stage 5). Finally, universal principles such as justice, equality, dignity and respect for all individuals guide moral reasoning in Stage 6 (Kohlberg & Hersh, 1977).

Unlike Piaget, Kohlberg does not estimate the ages at which each stage of moral development will be reached. Instead, Kohlberg and Hersh (1977) make the following assumptions: that individuals can only progress forwards through the stages, that once they have reached a stage, their reasoning ability encompasses all previous abilities from previous stages, and that their reasoning is always consistent with the stage of moral reasoning they are currently in (they will not regress in their moral reasoning abilities). These assumptions are highly rigid, as it assumes that young people will always use their most advanced moral reasoning abilities in all situations, regardless of environmental influences. Despite not accounting for the environmental influences that are unique to adolescence, Kohlberg’s model aligns well with the law, as it assumes young people become progressively more aware of the moral implications of their actions on the people around them the older they become.

Kohlberg asserted that mature moral reasoning begins at Stage 5 and 6, with Stages 1 to 4 representing immature moral reasoning. However, Kohlberg’s (1963) longitudinal research found that while some adolescents were able to morally reason at stage 5 or 6 during high school, when they were re-tested as
college-going adults approximately 20% produced moral reasons that were at a lower stage of moral development. This finding contradicted Kohlberg’s assertion that individuals do not regress through moral stages once they have been reached (Kohlberg & Kramer, 1969). In order to uphold the assumption that individuals only progress forwards through the stages, Kohlberg (1984) incorporated elements of Stage 5 and 6 reasoning into Stage 3 and 4 by splitting them into two levels: Moral Type A and Moral Type B. Moral Type A represents Stage 3 and 4 in their original form, and Moral Type B incorporates principle-driven moral reasons that would usually be found in Stage 5 and 6. For example, instead of referring to the importance of a friendship (Moral Type A), the Moral Type B individual would refer to human relationships as a broader construct.

Kohlberg made this revision to his stage-based theory to ensure his initial assumption that individuals progress sequentially through the moral stages without ever regressing. However, in practice it meant that individuals who may have previously been classified at Stage 5 or 6 were now classified at Stage 3 or 4, essentially lowering the threshold of mature moral development and resulting in very few individuals attaining Stage 5 or 6 (Gibbs, Basinger & Fuller, 1992). Considering the shortcomings of Kohlberg’s six stage model, Gibbs et al. (1992) proposed a condensed, four stage model of sociomoral reasoning, based on Kohlberg’s stages of moral development. Gibbs et al. argued that Stage 5 and 6 captured moral responses that were more philosophically articulate, but were not more morally mature than responses seen at Stages 3 and 4. Based on this reasoning, Gibbs et al. dropped Stages 5 and 6, reconceptualising Stages 1 and 2 as immature judgement, and Stages 3 and 4 as mature sociomoral judgement. As with Kohlberg, Gibbs et al. do not prescribe ages at which sociomoral judgement milestones are attained. However, Gibbs et al.’s research findings (discussed
further in Chapter Four) report that sociomoral judgement significantly improved with age.

It is unclear how Gibbs et al.’s (1992) model of sociomoral judgement aligns with the key ages surrounding the criminal culpability of young people, as maturity is defined differently in these two arenas; the law assumes that young people reach an age-based critical threshold of moral judgement by age 14 in Australia, and Gibbs et al. state that once individuals have reached Stage 3 and 4, they are employing mature moral reasoning. This disjuncture between the law and the available moral reasoning research is discussed further in the next chapter. Overall, rationalist theories of moral reasoning presume that competencies develop in a sequential fashion from childhood through to adulthood. Further, these early theories are interested in the reasons that people give for their moral judgements, and thus focus on moral reasoning process rather than outcome. That is, early theory and research was far more interested in why people made certain moral judgements, rather than just what those judgements were, something that is lost in later moral reasoning theories. The following chapter will also discuss how moral reasoning is measured under this framework.

**Rationalist decision making theories.** Early decision making theories are characterised by the assumption that decision making is a task requiring logic, reasoning, and mathematical weighing of possible decision paths. Many of these rationalist models propose there is one “good” process by which to make decisions, and if this process is not followed, poor decisions are likely to result. Similar to early moral judgement theory, under rationalist decision making models adults are seen as the gold standard of decision making. It was therefore thought that as young people matured, they became increasingly logical, rational, and adult-like in their decision making.
The theory of reasoned action and subsequent theory of planned behaviour (Ajzen, 1991; Fishbein & Ajzen, 1975) are two examples of early decision making theories. The theory of reasoned action states that an individual makes decisions based on their intentions; they intend to do something, and then do it. Intentions are influenced by the individual’s attitudes (whether they see the behaviour as positive or negative), and their subjective norms (the social pressure an individual feels to engage in a certain behaviour). The theory of reasoned action was originally designed to explain consumer purchasing behaviour. Under this theory, decisions are conceptualised as within the decision maker’s volitional control, and thus external factors that may impact on behaviour are not accounted for (Fishbein & Ajzen, 1975). For example, if an individual intends to buy a car, the theory of reasoned action does not account for whether they have enough money or whether the car they want is freely available. The theory of reasoned action is only concerned with what the individual intends to do.

In some ways, the law aligns with the idea that intention drives behaviour; individuals are generally thought to be rational actors that make a decision to engage in offending behaviour. However, the law also recognises exceptions to this; offences can be committed recklessly or due to negligence. Because many or most decisions have degrees of uncertainty, they therefore fall outside the purview of the theory of reasoned action (Sheppard, Jon, & Warshaw, 1988). Further, the theory of reasoned action is also limited by the assumption that there is only one possible decision path, rather than a range of decision alternatives that the individual can choose between (Ajzen & Fishbein, 1980).

To address some of these concerns, the theory of planned behaviour was proposed, which included the concept of perceived behavioural control; the extent to which an individual believes they have the resources (knowledge, skills etc.),
and opportunity to engage in a behaviour if they want to, somewhat similar to self-efficacy (Ajzen, 1985). Using shopping as an example, if the individual believes that they are going to have little opportunity to go shopping or that there are external barriers to going shopping (e.g. no money), then this will lower their intention to go shopping, and in turn reduce the likelihood that they engage in shopping behaviour. Alternatively, if the individual has the resources and opportunity to go shopping, then they are more likely to intend to shop and then do so. However, like the theory of reasoned action, the theory of planned behaviour is primarily applied to consumer decisions. The assumption made by the theory of planned behaviour that making decisions involves a deliberative, unidirectional process fails to recognise the impact of affect on more complex decisions, such as whether to engage in risky behaviour, including offending. Further, the theory of planned behaviour fails to acknowledge that there are often numerous decision alternatives that an individual must choose amongst, as does the theory of reasoned action. Aside from these issues, these theories presume decisions to be driven by intention and perceived behavioural control homogenously across the lifespan, with no consideration for how the decision making of young people may differ to that of adults.

In the late 1990s, decision making theory moved from trying to predict behavioural outcomes to examining the process that people use to reach decision outcomes. Still with the assumption that people are rational and logical when approaching decisions, the normative model of decision making sets out the following five stages that are necessary for competent decision making: (1) Determine all possible decision alternatives; (2) Determine all possible consequences of each decision alternative, including the conceivable risks and benefits of each; (3) Assess the advantages and disadvantages of each
consequence; (4) Evaluate the likelihood of each consequence occurring should any one of the possible decision alternatives be adopted; (5) Combining all of the previously considered information using a decision rule in order to establish the best course of action.

While this normative decision making model is useful as a theoretical springboard, its practical utility is questionable, as it assumes that all competent decision makers will generate and evaluate every possible decision alternative in a uniformly thorough way, coming to an objective conclusion about the “best” decision path. This may not be the case, as the generation of decision alternatives, and risks/benefits of these alternatives, are dependent on the individual’s subjective use of the decision making process, and hence are likely to differ from person to person (Beyth-Marom, Austin, Fischhoff, Palmgren & Jacobs-Quadrel, 1993). Further, as dual-process theories acknowledge, much decision making draws on previous experience and utilises mental “short-cuts” or heuristics in order to save time and cognitive resources (Gibbons, Houlihan & Gerrard, 2009; Klackzynski & Cottrell, 2004; Lapsley & Hill, 2008; Reyna & Brainerd, 2011). Thus, it is naïve to think that all five steps of the normative model of decision making will be utilised to make every decision.

Young people typically make risky decisions at higher rates than adults, which leads them to experience poorer outcomes, such as engaging in binge drinking, unprotected sex, and offending behaviour (Albert & Steinberg, 2011; Centers for Disease Control and Prevention, 2012; Eaton et al., 2006; Maynard, 1997; Reyna & Farley, 2006). Utilising the normative decision making models, many decisions made by young people may seem irrational and illogical to adults, considering the long-term consequences associated with such reckless behaviour. However, Furby and Beyth-Marom (1992) posit that adolescents make more risky
decisions and experience poorer decisional outcomes because they approach each stage of normative decision making differently to adults. Adolescents are presumed to identify different decision alternatives to adults, identify different consequences for those alternatives, weigh the risks and benefits in favour of the benefits, subjectively evaluate positives that adults may not consider to be positives, and therefore come to a different decisional outcome than an adult (Furby & Beyth-Marom, 1992). Thus, under the rationalist understanding of decision making, adolescents are not poor decision makers per se, their decision making process prioritises what is subjectively important to them, which is different to adults, and this leads them to make riskier decisions than adults.

This realisation marked a shift in decision making theory from being focussed on decisional outcomes to investigating process. Under this way of thinking, any decision (risky or not) could be considered rational, as long as a normative decision process was followed (Reyna & Farley, 2006). This model combats some of the limitations of previous rationalist theories, as young people may make allowances for psychosocial factors, such as peer influence, when making decisions using a rationalist process. However, there is little consideration of decision making process when assessing the criminal culpability of a young person. Demonstrating the accused was doli capax requires that they knew their actions were seriously wrong as opposed to naughty, and is not concerned with how the young person arrived at this understanding, only whether they did or did not understand their actions to be seriously wrong at the time.

Based on the same rationalist principles as the normative model of decision making, Janis and Mann (1977) recognised that stress greatly affects the cognitive processes an individual utilises while making decisions. Developed from conflict theory, Janis and Mann proposed that decisional stress is created when an
individual is uncertain about which decision alternative to choose. Further, decisional stress is thought to be directly proportional to the losses associated with the decision alternatives; the bigger the potential losses, the higher the decisional stress. High decisional stress is associated with physiological arousal and utilising “hot” cognitions, or patterns of thinking that are associated with making decisions based on emotion (Abelson, 1963). Hot cognitions contrast with “cold” cognitions, utilised when an individual engages in logical decision making at times of little or no decisional stress. Janis and Mann state that some decisional stress assists in motivating the individual to make decisions, and remaining vigilant in their assessment of decision alternatives. However, excessively low or high decisional stress means that individuals do not engage fully in the normative decision making process described above, and are likely to be less vigilant in their search for possible decision alternatives and the costs and benefits of these (Janis & Mann, 1977).

Janis and Mann (1977) articulate four ways in which stress can affect decision making: vigilance, hypervigilance, defensive avoidance, and complacency. The right amount of decisional stress results in vigilant decision making, which motivates the individual to search for all the available decision options, weigh them carefully and make a considered decision. Too much decisional stress can result in hypervigilance (also termed panic), which leads individuals to restrict their information search in order to make quick decisions. Alternatively, high decisional stress can lead to defensive avoidance, which is delaying or avoiding making decisions. Low decisional stress can result in complacency, where the individual decides to do nothing, or chooses the first, most salient decision alternative they think of. The positive aspect of Janis and Mann’s (1977) theory of decision making is that it begins to discuss not only the conditions under which
poor decision making process might be utilised (stressful conditions), but also recognises that decision making process might be affected in a number of possible ways. However, the conflict theory perspective still makes the assumption that “good” decision making is only engaged in when a thorough evaluation of decision options is undertaken, something that dual-process theories dispute.

**Rationalist theories summary.** As rationalist theories have developed, the way moral reasoning and decision making process is conceptualised has expanded to allow for individual or situational differences. Nevertheless, rationalist theories see making decisions and morally reasoning as a considered, logical, and deliberative process. The major pitfall of the rationalist models of moral reasoning and decision making is that they make rigid presumptions about how decision making and moral judgement abilities are acquired, including that there is a sequential course of development from childhood, through adolescence into adulthood, where the individual masters the cognitive competencies possessed by adults.

In a lot of ways, the law views the competencies of young people in this way. Under the age of 10, children are seem to possess too few rational decision making or moral reasoning skills to be held responsible for any offending. In recognition that the requisite competencies are developing at varied rates between the ages of 10 and 13, individuals are only held criminally culpable if they can demonstrate moral judgement and decision making capabilities by knowing their actions were *seriously wrong* at the time of the offence. Fourteen year olds are presumed rational and logical enough to be held culpable for their decisions or judgements that lead to offending. Further, the law presumes the accused formed the requisite intent or *mens rea* by engaging in a rational decision making and moral judgement process that led them to commit the crime. However, as the
following two sections will demonstrate, dual-process and psychosocial theories show that decision making and moral judgement is not always the deliberative, exhaustive process the law believes it to be, especially for young people.

**Dual-Process Theories**

Building on rationalist models, the fields of decision making and moral judgement have moved towards explaining these constructs using dual-process theories. While there are conceptual nuances within these theories, broadly speaking these models typically state that there are two types of processes that are used when making a decision or judgement: Type 1 processes which are automatic, mental short-cuts used to make quick decisions, requiring little cognitive processing, and Type 2 processes which engage working memory, are deliberate, logical, and require cognitive attention, similar to the process described by the rationalist models.\(^{41}\)

It is widely accepted within the dual-process literature that Type 1 processes are used most often to make decisions or judgements, as they are cognitively efficient. However, the many dual-process theories differ on how Type 1 and 2 processes interact with one another, and which process predominates under which circumstances. Some theories predict that individuals rely more on Type 1 processes as they get older and become more experienced at making decisions and judgements (Reyna & Brainerd, 2011). Other theories state that just the range of available Type 1 heuristics gets larger with age, but that these heuristics are not necessarily relied upon more often (Klaczynski & Cottrell, 2004). Some theories predict that either Type 1 or 2 processes will be utilised depending

\(^{41}\) The terms System 1 and System 2 processes are sometimes used as a way of collecting all the different dual-process theories and their differing processes under two umbrella terms (Stanovich & West, 2000; Evans, 2003). However, these terms are contentious in some circles, as systems are thought to refer to something broader than the cognitive constructs articulated by dual-process theories (Evans, 2009). Thus, the terms Type 1 and Type 2 are used here.
on the type of judgement being made (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Reyna, 2004), while others state that both Type 1 and 2 processes can be engaged at the same time (Klaczynski & Cottrell, 2004). Table 1 presents the terminology used by numerous theories to describe Type 1 and Type 2 processes.

Table 1. Dual Process Theories Organised into Type 1 and 2 Processes

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evans, 2009</td>
<td>Automatic</td>
<td>Controlled</td>
</tr>
<tr>
<td></td>
<td>Automatic</td>
<td>Deliberative</td>
</tr>
<tr>
<td></td>
<td>Heuristic-based</td>
<td>Analytic</td>
</tr>
<tr>
<td>Klaczynski &amp; Cottrell, 2004</td>
<td>Implicit</td>
<td>Explicit</td>
</tr>
<tr>
<td></td>
<td>Schema-based</td>
<td>Rule-based</td>
</tr>
<tr>
<td></td>
<td>Non-rational</td>
<td>Rational</td>
</tr>
<tr>
<td>Stanovich &amp; West, 1999; Amsel et al., 2008</td>
<td>Experiential</td>
<td>Analytic</td>
</tr>
<tr>
<td></td>
<td>Preconscious</td>
<td>Conscious</td>
</tr>
<tr>
<td>Evans, 2009</td>
<td>Limited processing</td>
<td>High processing capacity / Demands attentional cognitive resources</td>
</tr>
<tr>
<td></td>
<td>capacity / Demands few attentional cognitive resources</td>
<td></td>
</tr>
<tr>
<td>Klaczynski, 2000; 2001</td>
<td>Contextualised processing</td>
<td>Decontextualised processing</td>
</tr>
<tr>
<td>Klaczynski, 2001</td>
<td>Effortless</td>
<td>Effortful</td>
</tr>
<tr>
<td>Evans, 2009</td>
<td>Fast</td>
<td>Slow</td>
</tr>
<tr>
<td>Evans, 2009</td>
<td>High effort</td>
<td>Low effort</td>
</tr>
</tbody>
</table>

These conceptual differences highlight that the dual-process literature remains in disagreement about how Type 1 and 2 processes develop and interact,

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42 Table adapted from Stanovich and West (2000).
and the circumstances under which each process is activated. Further, dual-process theories are limited in their ability to describe developmental trends, as most were created to explain the decision making and moral judgements of adults, and therefore have little to offer on how these processes developed (Evans, 2011). Fuzzy-trace theory is the exception to this rule, as it offers a developmental theory (Reyna, 2004). Further, the prototype-willingness model has been applied to adolescents (Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008). Thus, these two theories are discussed here, as they have theoretical application to the age range of interest here (10 to 14 years of age). It should again be noted that this thesis does not aim to test any particular theory, rather these theories build a framework through which the results of this study can be viewed.

The prototype-willingness model (Gerrard et al., 2008) is designed to describe the various health-related risks that adolescents typically take, including engaging in unprotected sex and substance use. Gerrard et al (2008) build on the rationalist theory tradition, adding specifically to the theories of planned behaviour (Ajzen, 1985; Ajzen, 1991) and reasoned action (Fishbein & Ajzen, 1975), which presume that moral judgements can be made via a reasoned (Type 2) process in which positive attitudes and favourable subjective norms form intention, which in turn leads to decisions. Generally, Gerrard et al describe young people as risk averse when using this logical reasoning process. For example, if young people are asked whether they intend to engage in risky sexual behaviour in the future, they typically answer no (Brown & Eisenberg, 1995; Zabin, 1994). Despite expressing no intention to engage in risky behaviour, adolescent behaviour remains risky, indicating that young people often make decisions that increase their exposure to risk despite expressing opposite intentions. Thus, intentions are poor predictors of adolescent behaviour (something that is shown in
the research reviewed in Chapter Four). To address this shortcoming of rationalist theories, Gerrard et al propose that a second (Type 1) decision making process, the social-reaction path, is utilised when adolescents make spontaneous decisions. They argue that adolescent risk-taking behaviour is generally unplanned, and is often a response to environmental opportunities to engage in risky behaviour, which is why intentions have little relationship to behaviour. However, not all adolescents will engage in risky behaviour if the opportunity presents itself, they must have “behavioural willingness”, and be being open to engaging in a risky behaviour in order to do so.

In addition to behavioural willingness, the model also posits that young people have a mental image (or prototype) of the type of person their age that engages in risky behaviour. They propose that when deciding to engage in a risky behaviour or not, young people call upon these risk prototypes and mentally envision themselves engaging in the behaviour, which helps them to decide whether they would gain something from being closer to that image. For example, if a young person has a relatively positive view of a person that smokes cigarettes, and they are presented with a situation in which they can easily access cigarettes, they will likely engage in this behaviour in order to gain the perceived positive qualities associated with smoking, regardless of whether they originally intend not to smoke. In some ways, this idea of prototypes aligns with Moffitt's (1993) assertion that adolescent-limited individuals engage in offending behaviour in order to gain the social capital they perceive the life-course persistent individuals to obtain via their offending.

Thus, the prototype-willingness model predicts that being willing to engage in risky behaviour and having positive mental images (prototypes) of individuals who engage in such behaviour increases the likelihood of engaging in risky
behaviour when presented with an opportunity to do so. While this model was
developed to explain risky health decisions, and not offending behaviour, it is likely
that even if a young person knew that committing a violent offence is seriously
wrong, they may be open to dropping rocks from a freeway with friends, for
example, if they have positive prototypes, behavioural willingness and are
presented with the right environmental circumstances. While the doli incapax
criteria is interested in whether the young person knew their actions were
seriously wrong at the time of the offence, this criteria ignores the fact that the
individual may not access this knowledge while offending, subject to
environmental cues. The prototype-willingness model additionally predicts that as
young people enter adulthood they transition to more reasoned (Type 2) decision
making, making less risky decisions (Gerrard et al, 2008). While these predictions
relate to health behaviour, the premise that young people become more rational as
they get older aligns with the law’s expectations of young people, although the
prototype-willingness model predicts this transition occurs later (at the age of
majority) than doli incapax predicts (by mid-adolescence).

The fuzzy-trace theory (Reyna, 2004), another prominent dual-process
decision making theory, was developed from research on memory, reasoning and
decision making. The two processes described by fuzzy-trace are gist (Type 1) and
verbatim (Type 2) memory traces, which encode and store the salient features of
an experience separately. Gist (or fuzzy) memory traces capture the overall
meaning or gist of an experience as well as the emotion, while verbatim traces
capture specific details. For any given experience, both a gist and verbatim
memory representation can be encoded, and similarly either can be retrieved then
used as a reference in making decisions, depending on the demands of the task.

Fuzzy-trace theory posits that as people gain more experience with a decision
making task, they tend to rely more on gist or fuzzy (Type 1) processing, because
this saves time and cognitive resources (Rivers, Reyna, & Mills, 2008). Thus, fuzzy-
trace theory predicts that as young people progress through adolescence, they gain
more experience with making decisions and increasingly utilise gist processing the
older they get.

In practice, fuzzy-trace theory states that people can either make decisions
at a verbatim, quantitative level, paying attention to the surface-level specifics
associated with a decision, or they can pay attention to the qualitative, gist details,
which are quickly activated, broad-strokes understandings of the situation. For
example, when faced with the choice between skipping school and telling your
parents (thereby risking punishment), and skipping school without telling your
parents, the adolescent utilising verbatim processing would choose the seemingly
less-risky option of not telling their parents. A gist processing of this situation, by
comparison would apply a broader, underlying rule such as “risky versus not
risky” and would likely avoid skipping school all together, as both options leave the
individual at risk for punishment (Rivers et al., 2008). Thus, in making risky
decisions, fuzzy-trace theory states that adolescents will quantitatively weigh the
specific details of the risk associated with the decision options (verbatim, Type 2
processing), while adults will try and avoid all risk if possible, by qualitatively
applying the “some risk versus no risk” gist (Rivers et al., 2008).

There are several implications of fuzzy-trace theory for understanding the
criminal culpability of young people. Broadly speaking, the theory states that
young people are unlikely to be able to foresee the long-term consequences of their
offending behaviour, as they are focussing on the superficial details of a decision
making situation. Their fuzzy or gist representations are based on little decision
making experience, and are therefore likely to lead to inaccurate perceptions of
risk, compared to adults who have more decision making experience. This trajectory is consistent with the peak in offending behaviour during late adolescence (Farrington, 1983; Farrington, 1986; Moffitt, 1993).

**Dual-process theories summary.** As discussed, dual-process theories of moral judgement and decision making have built on traditional rationalist theories by positing that not all decisions are made using a deliberative, logical process. Rather, dual-process theories argue that two parallel processes operate when making judgements or decisions; one automatic, intuitive, and heuristic or gist-based (Type 1), which saves cognitive resources and allows judgements and decisions to be made quickly, and the other rational, logical, and deliberative (Type 2), similar to rationalist theories.

Broadly speaking, the law ignores Type 1 processes, presuming that, as young people develop, their moral judgement and decision making abilities increasingly resemble Type 2 processes. When compared to the *doli incapax* criteria more specifically, the law is arguably not concerned with the process used by young people, but rather only the outcome measure of whether the young person knew their actions were *seriously wrong* at the time of the offence. Thus, the current *doli incapax* criteria ignore the key theoretical advances made in how psychology understands moral judgement and decision making. However, as there is limited developmental dual-process theory, it is unclear how the developmental trajectories of those key competencies align with age-based legal criteria.

**Psychosocial Theories**

Traditional rationalist theories as well as dual-process theories of moral judgement and decision making focus purely on the cognitive processes that develop in young people as they transition into adulthood. Psychosocial theories,
by contrast, focus on the impact of social and emotional factors on cognitive
decision making and moral reasoning processes during adolescence. Young people
face unique social and emotional challenges, which have an effect on how they
perceive and process situations requiring moral judgement and decision making.
The psychosocial literature typically refers to “mature judgement” which
encompasses both moral and decision making elements. As such, the psychosocial
literature is discussed here as a whole, rather than being broken into moral
reasoning and decision making respectively.

Scott, Repucci, and Woolard (1995) proposed an early psychosocial theory,
and asserted that young people’s judgement is impaired by three psychosocial
factors: (1) Temporal perspective, which is the favouring of short term gains over
long term consequences; (2) Attitude towards and perception of risk; (3)
Conformity and compliance in relation to both peers and parents. Scott et al.,
(1995) argue that young people tend to assess the risks and benefits of short term
consequences while discounting long term consequences. Further, young people
tend to focus more on the potential for gain, rather than protecting themselves
against loss (Furby & Beyth-Marom, 1992). Many risky behaviours, including
offending, can be rewarding in the short term, which may lead to young people
making risky judgements. Even if young people recognise the risks associated with
a judgement, they often believe that the risks will not happen to them (Elkind,
1967; Gerrard et al., 2008). Thus, the judgements young people make are likely to
be optimistic and discount the potential long term risks of their decisions.

Alongside these factors, young people also become increasingly influenced
by their peers during adolescence, as they assert independence from their parents.
Scott et al., state young people’s peers can influence the judgements they make
directly (overt peer pressure) or indirectly (choosing behaviour consistent with
peer norms). While young people gain autonomy during their adolescence, they remain somewhat dependent on their parents, and Scott et al. theorise that parental norms likely influence young peoples’ judgements as well.

Steinberg and Cauffman (1996) attempted to further operationalise Scott et al.’s (1995) theory with their model of psychosocial factors. Based on a review of the literature, Steinberg and Cauffman stated that young people lack the psychosocial skills of responsibility, temperance and perspective, which are three overarching dispositions that develop during adolescence and work in conjunction with rationalist competencies such as understanding and reasoning to account for mature decision making.

Responsibility is the extent to which the individual has a clear sense of identity, and is autonomous and self-reliant in their decision making. Steinberg and Cauffman (1996) posit that as young people become increasingly autonomous and independent from the influence of both parents and peers, their judgement becomes increasingly mature. They argue that young people make an increased number of risky decisions because they lack temperance in their judgements, meaning their decisions are affected by physiological changes that lead them to be more impulsive, sensation seeking, and get easily caught up in their emotions. Perspective refers to the adolescents’ ability to consider the long term consequences of their decisions from points of view other than their own. Thus, according to Steinberg and Cauffman, mature judgements are made when an individual can think about the long term consequences of their decisions, how their decision may affect others, and identify the costs and benefits of a course of action.

Steinberg and Cauffman (1996) posit that responsibility, temperance and perspective are applied differentially by young people, depending on the social and emotional context of the situation. Further, they theorise that individuals will have
a disposition to respond in a certain way under certain conditions, based on their stage of development and decision making experience, rather than a fixed ability to apply these skills in all situations under all conditions. This model of psychosocial decision making has implications for our understanding of \textit{doli incapax}. When a young person has committed an offence, they have often made a series of relatively quick decisions. From the research on juvenile offending, we know that most adolescents commit offences with peers (Braithwaite, 1989; Farrington, 2003; Warr, 2002). Thus, it may be possible that a young offender could have the ability to make “good” decisions when not in a situation characterised by psychosocial influences, but may have failed to exercise sound decision making process at the time of the offence.

Both Steinberg and Cauffman’s (1996) and Scott et al.’s (1995) psychosocial theories posit that judgement and decision making abilities mature as young people gain experience and transition into adult social roles. As young people practice making decisions and moral judgements, they develop the skills to make competent decisions without being impaired by the psychosocial factors listed above. Thus, psychosocial theories posit that adolescents take more risks relative to children and adults due to psychosocial factors including prioritising short term gains over long term consequences, optimistic risk perception, valuing peer approval, lacking autonomy in decision making, and being impulsive and sensation seeking. As Chapter Four will outline, when psychosocial factors are researched, the developmental trajectory of moral judgement and decision making changes to a u-shaped progression, with younger and older adolescents demonstrating mature judgements and decisions, while the decisions of middle adolescents are negatively impacted by the psychosocial factors listed above. This dip in judgement
and decision maturity in mid-adolescence is consistent with the maturity gap articulated by Moffitt (1993).

**Chapter Summary**

*Doli incapa* assigns criminal culpability based on whether the accused knew their actions were *seriously wrong* as opposed to *naughty* at the time of the offence. The wording of the criteria makes key assumptions about the moral judgement and decision making abilities of the young person in question. This chapter therefore explored how moral reasoning and decision making are understood from several theoretical perspectives, while highlighting how the psychological understanding of moral reasoning and decision making compares and contrasts with the legal understanding of such abilities.

The chapter began by reviewing rationalist theories, which view decision making and moral reasoning as a logical, considered, and deliberative process, which becomes increasingly better with age. As such, adults are seen as the gold standard of decision making and moral reasoning, with children and subsequently adolescents linearly improving their rationalist abilities as they get older. Dual-process theories build upon the rationalist idea that all decisions and judgements are made using a deliberative (Type 2) process, by recognising that many decisions and judgements are made using an automatic, intuitive (Type 1) process, as this saves cognitive resources. Psychosocial theories highlight the unique emotional and social factors that impair young people’s decisions and judgements. These include their tendency to sensation seek, be impulsive, prioritise short term gains over long term consequences, become caught up in their emotions or “hot” cognitions perceive risks as unlikely to happen to them, and comply with peer over
parent norms in the moment, thereby lacking autonomy and self-reliance in their
decision making (Scott et al., 1995; Steinberg & Cauffman, 1996).

By exploring rationalist, dual-process, and psychosocial theories of moral
reasoning and decision making throughout this chapter, it was argued that there is
a divide between the psychological and legal paradigms; the law wants to make
age-based distinctions about when young people gain mature moral reasoning and
decision making abilities, however psychological theories often do not typically
make predictions about competency based on age. This divide between
psychological theory and legal practice indicates a need for psycholegal research
that integrates both perspectives. The next chapter will build upon the theories
reviewed in this chapter by discussing decision making and moral judgement
research, fleshing out some of the developmental trends that the theories reviewed
here speak to, and critically evaluating the research methods used to investigate
these abilities. Following this, Chapter Five details the specifics of the current
study.
Chapter 4

Decision Making and Moral Judgement: Research

After identifying in Chapter Two that the ability to morally reason and make competent decisions are key to being found *doli capax*, the previous chapter discussed major decision making and moral reasoning theories. Three main theoretical perspectives were explored: rationalist, dual-process and psychosocial theories. This chapter aims to present relevant moral reasoning and decision making research findings to explore what is known about the development of these abilities in young people. This chapter will first present rationalist research that shows logical reasoning abilities generally reach adult equivalence by mid adolescence. Relevant dual-process research is then discussed (although kept brief as this area is in its infancy). Finally, psychosocial research is discussed that demonstrates the decision making and moral reasoning abilities of young people are impaired by psychosocial factors until late adolescence or young adulthood. Through discussing the relevant research, methodological strengths and weaknesses are noted, and the lack of psycholegal research that investigates decision making and moral reasoning with respect to legal frameworks (particularly *doli incapax*) is highlighted. Details of the present study are then outlined in Chapter Five.

Rationalist Research

As mentioned in the previous chapter, the hallmark of rationalist theories is that young people are thought to progressively gain the ability to make considered, logical judgements and decisions as they develop through adolescence into adulthood. That is, young people’s decision making and moral reasoning is thought

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43 These broad categories are used as a means to group the literature. It should be noted that there is overlap between these categories and editorial decisions have been made about where to place research.
to become less biased and utilise a more rigorous process as age increases. Under rationalist theories, adults are seen as the gold standard, and thus much of the research that falls under this umbrella compares young people to adults. While some rationalist theories articulate stages through which people develop (such as Gibbs et al., 1992; Kohlberg, 1969; and Piaget, 1962), such theories do not typically predict ages at which these stages are reached (Piaget, 1962 is the exception to this). Rationalist decision making and moral reasoning research has approached the questions of how and when these competencies develop in different ways. Much of the decision making research compares young people’s abilities to adults’ in order to find the age at which these two groups are no longer significantly different. The moral reasoning research typically compares delinquent and non-delinquent young people, or looks at moral reasoning in conjunction with self-reported delinquency, with the assumption that delinquency is the product of a lack of moral development. Thus, age based trends are investigated less frequently in the moral reasoning research than the decision making research.

**Rationalist moral reasoning research.** Studies of moral reasoning have a long tradition of utilising moral dilemmas, where the interests of the individual are pitted against the interests of another person or group of people in a vignette (Basinger, Gibbs, & Fuller, 1995; Christensen & Gomila, 2012; Eisenberg, Lennon & Roth, 1983; Greene, 2009; Kohlberg, 1984; Walker, Gustafson, & Henning, 2001). Dilemma-based measures can usually be classed as either “production” or “recognition” in format. Production measures are designed to elicit participants’ reasoning as to why they would make a particular moral judgement, and typically use open-ended questions to elicit qualitative responses. Recognition measures, such as the Defining Issues Test (Rest, 1979; 1986; Rest, Narvaez, Bebeau, & Thoma, 1999), ask participants to choose a moral reason from a number of
predetermined options. Recognition measures are somewhat flawed in that they do not require the participant to possess advanced reasoning skills in order to pick an advanced reasoning option. Thus, recognition measures often overestimate participants’ moral reasoning abilities (Narvaez, 2010). Given that this study is a preliminary investigation linking doli incapa with moral reasoning and decision making, production measures are favoured, as they more accurately measure young people’s unprompted reasoning abilities and ask young people to articulate their moral reasoning process.

Piaget (1932) can be credited with beginning to investigate the moral development of young children. Through the use of pairs of moral stories with over 100 children, Piaget found that younger children tended to mention damage as a measure of how wrong an act was. This tendency transitioned between the ages of 6 and 10, with children becoming more likely to mention intent as a measure of how wrong an act was. Thus, Piaget argued that children initially start with an objective sense of what is morally wrong (damage) and move to a subjective sense with age as they mention the intent or motives of the individuals involved. However, the vignettes used by Piaget (1932) did not depict behaviour that would be considered illegal.

In an effort to shed light on whether children under the age of 7 (minimum age of criminal responsibility) should be held legally accountable for their offending behaviour, Keasey and Sales (1977) then built upon Piaget’s work by using vignettes that depicted legal or criminal situations. Keasey and Sales presented 60 children aged five to seven with four pairs of stories depicting arson, battery, larceny and homicide. The story pairs varied according both to the amount of damage caused and the level of intent displayed by the characters. Their findings mirrored that of Piaget’s (1932) findings, with children’s preference for
mentioning intent rather than damage increasing with age. Keasey and Sales argue that because “most children under 7 years of age can entertain the requisite intent to commit a criminal act” (p. 56) the presumption that young people under the age of seven are doli incapax is not scientifically supported. However, this study did not use a comparison group of older children and therefore could not track developmental trends after the age of seven, which they acknowledged.

As mentioned in Chapter Three, Kohlberg’s (1969) model of moral development proposed that individuals sequentially progress through six stages during which sociomoral values are gradually internalised. Kohlberg thought Stage 5 and 6 reasoning indicated “mature” moral judgement. However, few participants reached Stage 5 or 6, and if they did, they often regressed when tested again at a later date. Kohlberg’s later work amended Stage 3 and 4 to include aspects of Stage 5 and 6 reasoning (referred to as Moral Type B) to ensure the fundamental assumption that people only progressed forwards through moral stages was not violated. Kohlberg’s moral reasoning research was conducted using the Moral Judgment Interview (MJI) (Colby & Kohlberg, 1987; Colby et al., 1983), a production measure where participants were presented with nine moral dilemmas that pit key moral values against one another, including the value of human life, the law, authority, contractual agreements, and conscience. Participants were then asked an open-ended question about their moral decision, such as “why/why not” (Colby & Kohlberg, 1987, p.1). Participants’ qualitative responses to the process-based questions were then coded according to meaningful, theory-based categories (see Colby & Kohlberg, 1987; Colby et al., 1983). Dilemmas were presented in a verbal interview format, and Colby and Kohlberg stated an explicit preference that interviews be recorded and transcribed in order to capture participants’ full responses and allow the interviewer to ask clarifying questions
when participants’ responses are vague. The Moral Judgement Interview has been widely used, and has very good reliability and validity, with test-retest correlations over 0.95 and internal consistency alphas over 0.9 (Colby & Kohlberg, 1987).

In terms of age-based trends, Colby and Kohlberg (1987) began with a cohort of 84 boys aged 10, 13 and 16 who were administered the MJII as a cross sectional sample and then followed up at three to four year intervals. Due to attrition, the longitudinal results relate to 58 participants from the original sample. Developmental trends showed that at age 10, most individuals were utilising moral reasoning between Stages 1 and 2 (denoted as Stage1(2)\textsuperscript{44}). The number of participants utilising immature reasoning at Stages 1 and 2 steadily declined from age 10. Thus, at Australia’s minimum age of criminal responsibility, these results indicate that moral judgement is only beginning to develop. In early adolescence (age 13-14), towards the upper limit of the doli incapax presumption, moral judgement was dominated by Stage 2 and Stage 3 reasoning. From the age of 10, use of Stage 3 reasoning steadily increased, but was not the uniformly preferred moral judgement stage until between the ages of 16 and 18. By Kohlberg’s standards, even those at the age of majority (18) were generally utilising “immature” moral judgement, as mature moral judgement was thought to begin from Stage 5. After the age of 18, no participants utilised Stage 2 reasoning (or below), and the use of Stage 4 reasoning increased continually from age 20 until age 36 where the data collection ceases. No participants utilised Stage 5 reasoning until at least 20-22 years of age, and less than 10% of the sample utilised Stage 5 reasoning.

\textsuperscript{44} The transition between stages in both the Moral Judgement Interview (Colby & Kohlberg, 1987; Colby et al., 1983) and the Socio-moral Reflection Measure (Gibbs et al., 1992) (discussed later) is presented by noting the main stage at which the person is reasoning, followed by the secondary stage in brackets. For example, the transition between Stage 1 and Stage 2 reasoning includes Stage 1(2) reasoning, where the person is utilising mostly Stage 1 reasoning, with elements of Stage 2, and Stage 2(1) reasoning, where the person is utilising mostly Stage 2 reasoning, still with elements of Stage 1 reasoning.
reasoning at all (up to age 36). Further, no participants recorded Stage 6 reasoning. Thus, less than 10% of participants ever reached “mature” moral development under Kohlberg’s model.

Using the same age groups (10, 13, and 16) as well as the Moral Judgement Interview, Baek (2002) investigated the moral development of 128 young people cross-sectionally sampled in equal numbers from Korea and Britain. Baek found across both countries that younger participants demonstrated immature moral judgement, with seven year olds using Stage 1(2) most often and 10 year olds using Stage 2 most often, consistent with Colby and Kohlberg’s (1987) findings. So, below and at the age of minimum criminal responsibility, young people are typically utilising immature moral judgement. Also consistent with Colby and Kohlberg’s findings, 13 year olds, who are still presumed doli incapax under Australian law, utilised Stage 2 (3) reasoning on average when making moral judgements, while 16 year olds used Stage 3 moral reasoning most often. These findings support the assertion that mature moral reasoning abilities develop linearly during adolescence. Baek did comment, however, that the wording of the questions and probes of the MJI needed to be simplified for the seven year olds, perhaps putting them at a disadvantage simply due to comprehension, rather than moral reasoning ability. Colby and Kohlberg’s (1987) and Baek’s studies together indicate that moral reasoning abilities do not reach maturity under Kohlberg’s model at age 14, as doli incapax presumes. Further, both Baek and Colby and Kohlberg’s (1987) studies utilise age groups that are separated by a number of years, making it difficult to pin-point the age at which young people’s moral reasoning abilities significantly improve. Research therefore needs to use age groups that are closer together for greater specificity.
Nisan and Kohlberg (1982) found similar developmental trends using the Moral Judgement Interview in their sample of 109 Turkish males, however they found that rural participants utilised moral reasoning at a significantly lower stage than their urban counterparts at each at the included age ranges: 10 to 12, 13 to 15, 16 to 18, and 19 years of age and over. Between the ages of 10 and 12, rural participants used Stage 2(1) reasoning on average, while urban participants used Stage 2. This one stage lead by urban participants was maintained between the ages of 13 and 15, with rural participants using Stage 2 reasoning on average and urban participants using Stage 2(3) reasoning. Further, between the ages of 16 and 18, rural participants’ moral judgments averaged at Stage 3(2) and urban participants’ moral judgements averaged at Stage 3. Consistent with previous findings, participants in Nisan and Kohlberg’s study were immature in their moral development until between 16 and 18 years of age, well after the *doli capax* threshold of 14 years of age.

Similar trends in the Moral Judgement Interview are seen in Snarey, Reimer and Kohlberg’s (1985) longitudinal study of 64 Israeli kibbutz adolescents aged 12 to 26. At age 12, 61% of participants were utilising stage 2(3) moral reasoning. The majority of participants shifted to utilising mostly Stage 3 reasoning between the ages of 13 and 17, and by 18 years of age moral judgement was most commonly at the 3(4) level. Thus, these and the above discussed findings collectively indicate that Stage 5 and 6 moral reasoning were not a prominent feature of young peoples’ moral reasoning, and would mean that mature moral reasoning was attained only by a small portion of the population during adulthood. Thus, mature moral reasoning would not occur until well after 14 years of age when *doli incapax* assumes mature moral reasoning to begin.
This research could collectively be taken to demonstrate that the law grossly over-estimates young people’s moral judgement abilities, and therefore young people are being presumed mature when their moral judgement abilities remain immature. However, the fact that very few participants reached “mature” (Stage 5 or 6) moral development points to the possibility that Kohlberg’s conceptualisation of mature moral development may simply measure intelligence or education, rather than moral reasoning ability alone, making Stages 5 and 6 obsolete (Gibbs et al., 1992; Lee & Olszewski-Kubilius, 2006). In addition to these conceptual shortcomings of Kohlberg’s theory, the Moral Judgement Interview has been criticised for the potential for interviews to be expansive and lengthy, and for the coding scheme being cumbersome to use (Gibbs et al., 1992). However, the Moral Judgement Interview is a widely used production measure, which collects rich, qualitative data about the cognitive process individuals use when making moral judgements. Such information cannot be collected by a quantitative measure.

Considering these advantages and disadvantages of the Moral Judgement Interview (MJII), there was a movement to consolidate the measure and create a more efficient way of collecting rich, qualitative data regarding moral reasoning. Gibbs et al. (1992) undertook both a conceptual and methodological revision of Kohlberg’s moral stages and the MJII, creating the Sociomoral Reflection Measure – Short Form (SRM-SF). Specifically, they modified Kohlberg’s original moral stages, removing Stages 5 and 6, and instead deeming mature moral reasoning to begin from Stage 3. Instead of utilising full moral dilemmas as in the MJII, the SRM-SF (a modification of the original Sociomoral Reflection Measure) (Gibbs & Widaman, 1982) utilises single sentences to orient the participant to a moral concern, including contract and truth, property and law, and legal justice, and then asks for
a qualitative account of their moral reasoning. Gibbs et al argue that the SRM-SF maintains the essence of the MJI by measuring sociomoral judgement in a more efficient way, while continuing to elicit spontaneous qualitative moral reasons from participants. Further, they argue that by using a single sentence rather than a full dilemma, participants are able to rely on their personal experiences, allowing for subjectivities in their reasoning process (Stams et al., 2006). If the studies utilising the MJI applied Gibbs et al.’s four stage conceptualisation instead, young people would utilise mature moral reasoning on average between 13 and 16 years of age. This is more consistent with the age-based legal distinctions set out by doli incapax. In terms of psychometric properties, test-retest reliability of the SRM-SF is reported as 0.88 by Gibbs et al and internal consistency is reported as a Cronbach’s alpha of 0.92. Further, the SRM-SF correlated well with the MJI (r=0.69, p<0.0001), and when the standard training protocol was followed, inter-rater reliability was above 0.90 (Basinger et al., 1995; Stevenson, Hall, & Innes, 2004). However, these psychometric properties are not broken down by age group, and thus is unclear whether reliability varies depending on age.

Gibbs et al. (1992) administered the SRM-SF to 384 participants in six age groups: fourth graders ($M_{age}=10$), sixth graders ($M_{age}=12$), eighth graders ($M_{age}=14$), high school students ($M_{age}=17$), university students ($M_{age}=19$), and adults ($M_{age}=50$). Sociomoral reasoning ability was found to significantly improve as age increased, with high school students (17 years old on average) being the first age group consistently utilising mature moral reasoning. This study improves on previous moral judgement research by including numerous age groups at close

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45 It is acknowledged that Gibbs et al (1992) revised and shortened the Moral Judgement Interview (Colby & Kohlberg, 1987; Colby et al., 1987) when making the Socio-Moral Reflection Measure – Short Form. Even though these two measures utilise a different number of stages, they are considered comparable for the current purposes, given they originate from the same model.
intervals, which could potentially show the ages at which young people’s moral reasoning significantly improves. However, Gibbs et al. provide only mean age, and do not report the range of ages included in each age group, and further do not report post hoc tests to show where significant age differences lie. Although Gibbs et al. reported these findings to demonstrate the psychometric properties of the SRM-SF, these pieces of information are key to understanding developmental trends.

Numerous studies have compared the moral reasoning abilities of individuals who offend with individuals who do not offend, with the hypothesis that offenders will have significantly poorer moral reasoning abilities. In an Australian study, Stevenson et al., (2004) used the Sociomoral Reflection Measure – Short Form (SRM-SF) to compare the sociomoral reasoning of 99 incarcerated violent offenders (M_{age}=31) and 101 “non-offender” university students (M_{age}=27). Stevenson et al. found that a higher proportion of offenders (n=35) utilised immature moral judgement compared to non-offenders (n=7). However, this study was conducted using adult participants that were not matched on any specific characteristics, apart from being roughly the same age. Thus, the gap in moral reasoning ability may have been more apparent had an adolescent sample been used.

Also utilising the SRM-SF to compare moral reasoning between offenders and non-offenders, Palmer and Hollin (1998) compared the sociomoral development of 126 convicted male offenders with 322 non-offenders (210 females and 122 males) that were accessed through schools and universities. All participants were aged between 13 and 22, with a mean of 17, however the age groups were collapsed (age was not a variable of interest), so developmental trends cannot be discussed. The non-offenders had significantly more mature
sociomoral judgement skills, mostly using Stage 3 sociomoral reasoning, while the
offenders typically used Stage 2 reasoning. Building on these findings, Palmer and
Hollin (2001) investigated sociomoral reasoning using the SRM-SF and its
relationship to self-reported delinquency among 94 school-attending adolescents
aged between 12 and 18. Self-reported delinquency was found to be negatively
correlated with moral development, which is consistent with other studies where
delinquency is associated with poorer moral reasoning skills (Blasi, 1980; Larden,
Melin, Holst, & Langstrom, 2006; Nelson, Smith, & Dodd, 1990). Unfortunately, this
study again treated all adolescents as one group, and thus failed to explore
developmental trends. So, while the mean moral reasoning stage was 3, meeting
the mature threshold, the age at which this threshold was reached is unclear. The
significantly lower moral judgement abilities of offenders compared to non-
offenders has been echoed in two narrative reviews of the moral reasoning
literature (Blasi, 1980; Nelson et al., 1990) and a meta-analysis (Stams et al., 2006).

Overall, these studies using the SRM-SF (Gibbs et al., 1992) suggest that
poor moral reasoning abilities increase the risk of being involved in offending
behaviour. Krcmar and Valkenburg (1999) investigated young people’s moral
reasoning abilities in scenarios related to violence. Following the tradition of moral
dilemmas to elicit both moral reasoning outcomes and process, they designed and
validated the Moral Interpretation of Interpersonal Violence (MIIV) Scale, which in
its final form presents participants with two vignettes depicting justified violence
(injuring people who stole or intimidated) and two depicting unjustified violence
(injuring people for no good reason). Krcmar and Valkenburg administered the
MIIV scale to 156 children and young people between the ages of 6 and 12. The
young people were played a recording of the scenarios, then rated how wrong they
thought the use of violence was on a seven-point scale from very, very wrong to
very, very right, which was accompanied by a simple drawing of a face with varying degrees of a frown (wrong) or smile (right). Participants were then asked to provide rationales for why they thought that was very, very wrong to very, very right (based on their previous response). Their responses to this open-ended question were coded using an existing coding scheme developed by Eisenberg-Berg (1979). Participants were grouped into three age ranges (6-8 year olds, 9-10 year olds, 11-12 year olds), although no significant age effects were found. The authors attributed this finding to small sample size, which is entirely plausible. However, it may also be that collapsing age groups meant significant differences were hidden. Although the use of an open-ended question designed to understand moral reasoning process was a useful addition, Krcmar and Valkenburg did not report age-based trends in these responses. Additional findings showed that participants judged violence that was justified to be less wrong than violence that was unjustified. This finding may have implications for doli incapax, as young people who feel their offending is justified may be less likely to see it as seriously wrong.

More recently, research has emerged that endeavours to make moral reasoning tasks even more engaging and relevant for young people. For example, Dooley, Beauchamp, and Anderson (2010) incorporated situational photos alongside age-appropriate vignettes to increase the emotional valence and engagement of young people. Using a sample of 51 11 to 19 year olds, they administered 16 vignettes that were designed to mirror every-day adolescent moral dilemmas (such as deciding whether to cheat at a game of pool). They then asked a series of open-ended questions to better understand the moral reasoning

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46 Instead, they investigated the relationship between these rationales and participants’ rate of viewing violent television programs.
process young people used when navigating the vignettes. Because Dooley et al. (2010) were only conducting an initial investigation of their novel method, they did not report age-trends. However, they did show that moral maturity was positively correlated with prosocial behaviour and negatively correlated with antisocial behaviour. Even though these findings were preliminary, participants reported some familiarity with the vignettes they were presented with, they reported enjoying the task, and being emotionally engaged throughout (Dooley et al., 2010). These findings provide support for similarly novel ways of investigating moral reasoning.

Overall, the rationalist moral reasoning literature is limited in its application to this thesis in that age is not usually the main variable of interest, and thus developmental trends are largely unknown. When age was a variable of interest, most studies collapsed several age groups, making developmental changes at ages relevant to *doli incapax* difficult to discern. Further, most studies included mid to late adolescents, and thus there is limited data on the moral reasoning abilities of young people around the Australian minimum age of criminal responsibility (10 years of age). While the research indicates that “mature” moral development occurs somewhere between mid to late adolescence, studies utilising more age groups at closer intervals are necessary.

**Rationalist decision making research.** Unlike the dilemma-based production measures used in moral reasoning research, rationalist decision making research typically utilises quantitative, questionnaire-based measures, or mathematical tasks to investigate how young people make decisions or weigh decisional risks. Many rationalist researchers have concluded that adolescent decision making

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47 It is acknowledged that this was not the purpose of the above discussed studies. However, it means that the current understanding of developmental changes in moral reasoning abilities at ages relevant to *doli incapax* are relatively unknown.
ability is equivalent to that of adults’ by mid-adolescence (Belter & Grisso, 1984; Fischoff, 1992; Furby & Beyth-Marom, 1992; Lewis, 1981; Weithorn & Campbell, 1982). Although *doli incapax* does not assume adult equivalence by age 14, it does presume that moral reasoning and decision making abilities significantly improve at age 14.

An extensive body of literature has investigated young people’s tendency to make risky decisions using gambling tasks such as the Iowa Gambling Task (IGT). Recent research using the IGT administers the task electronically, making it resemble a computer game. Participants are presented with four decks of cards, with the goal of increasing the amount of money in their virtual account. Two of the decks of cards will lead to net increases in winnings over time (advantageous decks), while two decks of cards will lead to net losses over time (disadvantageous decks). However, the disadvantageous decks, while they result in overall losses, have the potential to reward participants with infrequent large winnings, while the advantageous decks reward participants more frequently and consistently with smaller winnings. Broadly, the literature using the IGT has found a linear increase in choosing advantageous decks and thus maximising net winnings as young people get older (Crone, Bunge, Latenstein, & van der Molen, 2005; Hooper, Luciana, Conklin, & Yarger, 2004), with young adults (aged 18-25) typically preferring the advantageous decks (Crone & van der Molen, 2004; Crone, Vendel & van der Molen, 2003). The use of the IGT is not confined to the rationalist research tradition, with both psychosocial (see Cauffman, et al., 2010 for an example) and neuropsychological (see for example Cassotti, Houdi, & Moutier, 2011; Christakou,
Brammer, Giampietro, & Ruiba, 2009) research traditions using the measure also48.

Similar to the developmental moral reasoning literature, the developmental research using the IGT is limited in its application to this thesis by using disparate age ranges, which makes it difficult to track developmental trends and identify key ages at which decisions and judgements improve. Cauffman et al., (2010) addressed this limitation by administering the IGT to 901 participants aged 10 to 30. Using age as an outcome variable, Cauffman et al found that participants’ net winnings did not differ from the age of 14 onwards. However, when the amount of “good” (picking from the advantageous decks when possible) and “bad” plays (avoiding disadvantageous decks when possible) were compared, 14 to 17 year olds learned significantly faster than both younger and older participants to pick from advantageous decks, while adolescents as a whole learned significantly faster than adults to avoid disadvantageous decks. Looking more broadly at developmental trends, picking from advantageous decks peaked in late adolescence, before declining in adulthood, indicating increased risk taking into late adolescence. Avoiding disadvantageous decks increased linearly across all age groups, indicating that as age increases decision making is tempered by avoiding risks rather than approaching rewards. This study highlights that while the decision outcomes of young people may look the same as adults by the time they are 14, when the process they used to get to the outcome (which decks they chose from) is examined, young people utilise risky process until they reach late adolescence, at approximately 18 years of age.

48 It is argued here that the IGT itself engages a cognitive process of weighing risks and rewards, which is why it is presented under the subheading of rationalist research. Thus, while some research has utilised the IGT when looking at the effect of affect on decision making, the IGT itself is not a measure of affective decision making. The IGT is therefore distinct from psychosocial measures which specifically aim to investigate the effect of social and emotional factors on decision making.
While mathematical tasks such as the Iowa Gambling Task are widely used and provide informative data on risk taking, they have been criticised for lacking application to everyday decision making. If young people are faced with the decision to engage in offending behaviour, they are unlikely to be making such a decision free from emotional activation, contextual influences, or decisional stress. As mentioned in the previous chapter, Janis and Mann (1977) considered the effects of stress on decision making (Mann, Harmoni, Power, Beswick, & Ormond, 1988). Under a manageable amount of decisional stress, people are thought to make good decisions when they conduct a thorough information search (vigilance) and have confidence in their decision making abilities (decision self esteem). If decisional stress is too high, individuals might defer their decision making to others (cop-out), or pick the first decision alternative they think of (panic49). If decisional stress is too low, Janis and Mann thought individuals became apathetic in their decision making (complacency)50. Research stemming from Janis and Mann’s conflict theory initially investigated the decision making abilities of adults before turning to adolescents (Friedman & Mann, 1993; Mann et al., 1988; Ormond, Luszcz, Mann & Beswick, 1991).

Mann et al., (1988) delivered and evaluated a decision making training program for Australian young people in Year 8 and Year 10 of high school, designed to increase effective decision making. In both studies the Adolescent Decision Making Questionnaire (ADMQ), which measures the five decision making styles described above, was used to compare a group of students who had engaged in the decision making training program with another group of students who did

49 Referred to as hypervigilance in earlier works by Janis and Mann (1977).
50 It should be noted that Janis and Mann’s research progressed, the number of decision making styles and the labels for their decision making styles developed. The above mentioned five styles are outlined here as they are the most recent styles and form the basis for of their decision making measure.
not engage in the training. In the first study, 40 students (mean age 12.4 years) who received the decision making training were compared to 51 students (mean age 12.9 years) who had not received the training, and in the second study 152 students (mean age 15.3 years) who received the training and were compared to 220 students (mean age 15.3 years) who did not receive the training. In both studies, participants who had completed the training showed better decision self-esteem and vigilance, as well as lower panic, cop-out and complacency compared to those who had not completed the training, meaning that their decision making got better overall. Unfortunately, this study did not compare these age groups, so developmental trends are unclear, although the means provided by Mann et al. indicate that the older participants utilised effective decision making styles more often than younger participants, regardless of training.

Using the same measure of decision making (ADMQ), Ormond et al., (1991) compared the decision making styles of 43 “early adolescents” aged between 12 and 14 years and 41 “middle adolescents” aged between 15 and 17 years of age. Results showed that middle adolescents used more adaptive decision making styles (vigilance and decision self-esteem) and less maladaptive decision styles (panic, complacency and cop-out) than the early adolescent group. While this study indicates that decision making gets better with age, it contradicts the idea that young people’s decision making is equivalent to adults by age 14 or 15, as decision making continued to improve past this age. While Ormond et al.’s findings show continued improvement in decision making abilities up until the age of majority, the threshold at which the decision making abilities of young people are “good enough” to be held criminally culpable for their actions is still up for debate. Further, this study is limited in its application to this thesis by collapsing age
groups, making it difficult to discern the age at which significant improvements are made in decision making ability.

Rationalist decision making research has been criticised for only measuring logical, conscious decision making abilities in research contexts and therefore not capturing decision making in real-life settings (Cauffman & Steinberg, 1995; 2000). Although Mann et al.’s (1988) Adolescent Decision Making Questionnaire investigates adaptive and maladaptive decision making styles, it does so in a traditional paper-and-pencil, multiple-choice format. It has therefore been argued that the decision making abilities captured in research contexts may over-estimate the abilities of young people, as they are not being tested in decision making contexts where psychosocial factors such as emotions, time or peer pressure may impair decisions, and decisions made have real consequences. To put decision making into a more realistic context, some studies utilised decision making vignettes (similar to those used in moral reasoning research) to assess the maturity of individuals’ decision making process in high-stakes legal arenas, such as medical decision making.

Weithorn and Campbell (1982) used hypothetical medical treatment decision making dilemmas (about treatment options for diabetes, epilepsy, depression, and enuresis) to examine the types of decision outcomes participants aged nine, 14, 18 and 21 would generate, along with the reasons for their decisions. The nine year old participants stood out as significantly poorer than the other age groups at generating and reasoning through their decisions in all dilemmas. While they were able to produce salient reasons for their decisions, they usually only identified one or two reasons, while older age groups were able to identify significantly more rationales and typically considered both the pros and cons of a decision. By contrast, 14 year olds did not generally differ in their
decisions from the 18 and 21 year olds, except for a significant difference in hypothesically accepting an epilepsy treatment which would cause dental problems and bodily hair growth (significantly more 14 year olds chose not to have the treatment). Weithorn and Campbell attributed this age-related difference to the complexity of the medical decision making contexts and the inability of the nine year old participants to accurately evaluate the risks and benefits of their decision alternatives. However, the coding scheme used for the qualitative responses was developed by adults, and may have therefore been unsuitable to code the responses nine year olds gave. While this study highlights the relative similarities in reported decision making process of 14 year olds and legally defined adults, it also highlights that investigation into these areas needs to be driven by age-appropriate frameworks. If scenarios are not age-appropriate, age-based differences may be the result of participants not understanding the scenario rather than a genuine difference in ability. As with previously discussed research, the age groups included in this study were widely spaced, making it difficult to discern the exact age at which decision making ability significantly improved.

Young people’s ability to recognise and protect their legal rights was investigated by Halpern-Felsher and Cauffman (2001), who looked at the spontaneous advice that adolescents offered a hypothetical peer who was facing three dilemmas; whether to undergo a cosmetic surgery procedure, whether to participate in an experimental trial for a new acne medication, and which parent to live with after a divorce. These scenarios were aimed at investigating the consequential thinking and decision making abilities of adolescents in 6th, 8th, 10th and 12th grades (approximately 12, 14, 16 and 18 years of age) in the medical, informed consent and family legal domains, respectively. A control group of college-going adults was also included. In the medical domain, adults
spontaneously generated significantly more decision alternatives and considered significantly more of the associated risks and benefits for their hypothetical peer than all younger age groups. However, decision making competence was not consistent across all scenarios, with all age groups generating more detailed responses in relation to the family decision making scenario. Halpern-Felsher and Cauffman argue that this is a product of the familiarity with real-life divorce situations amongst all age groups, compared with the relative inexperience with medical or informed consent decision making situations. Considering this, poor decision making outcomes may be due to inexperience with the decision making situation itself, again indicating that scenarios must be age and experience appropriate in order to reliably investigate decision making abilities.

One criticism that decision making studies such as these consistently attracted was that they asked participants to make hypothetical judgements about what they anticipate their actions to be in a particular situation (e.g. Cauffman & Steinberg, 1995; Scott et al., 1995). It has been argued that this method does not provide a realistic decision making environment, as the participant’s decisions have no real-world consequences. As such, all of the results described above may only be measurements of the participant’s cognitive ability to imagine themselves in that situation, rather than providing an accurate indication of their real-life decision making competence. Further, vignettes have been criticised for telling participants the decisions they made leading up to a scenario, so that some participants can’t relate or bring their own experience to the vignette. More broadly, vignettes have been criticised for not engaging “hot” cognitions as a real life decision making situation would (Cauffman & Steinberg, 1995). That is, vignette-based measures do not replicate the psychosocial factors that would likely be at play when young people make decisions in real-life situations.
Two studies are often cited as tackling this methodological problem by researching participants in the midst of their decision making process. Both Lewis (1980) and Ambuel and Rappaport (1992) investigated competence to consent to an abortion by interviewing adolescent and adult participants about their decision making process while they were waiting to receive the results of a pregnancy test. Of 45 participants, Lewis (1980) found no difference between the minors (between 13 and 17 years of age) and the adults (18 to 25 years of age) in terms of their knowledge of the relevant laws, the types of people they had consulted about their pregnancy and the advice they anticipated from these people. However, collapsing age groups 13 to 17 may have hidden any age-based differences between these ages. Further, because several age groups were collapsed, this makes it difficult to discern exactly when young people’s abilities changed.

In a similar study, Ambuel and Rappaport (1992) investigated the decision making process of 75 participants aged 13 to 21, and whether they were considering abortion. All participants that considered abortion as an option displayed adult-equivalent competence. Adolescents aged 15 years or younger who did not consider abortion an option appeared significantly less competent compared to the other participants, based on their amount of volition and their cognitive problem solving skills. Thus, these findings indicate that, from mid-adolescence, young people’s decision making abilities are equivalent to adults’ if they are able to generate and evaluate the risks and benefits of many decision alternatives. While these two studies are held up as excellent examples of in situ decision making research, it should be recognised that this method is ethically impossible to implement in some decision making contexts, such as attempting to examine the decision making process of adolescents when engaging in criminal behaviour.
Rationalist research summary. The above studies demonstrate that offending in adolescence is associated with significantly poorer moral reasoning abilities (compared to non-offending peers), and that rationalist decision making abilities in adolescents is comparable to adults by mid-adolescence. However, decision making research in particular is limited by often focussing solely on decision outcome, and failing to ask about the cognitive process young people use when making decisions, whereas rationalist moral reasoning research often investigates process. By focussing solely on the decision outcomes of young people and comparing them to adults, the equivalence of adolescent and adult decision making abilities by mid-adolescence has been overstated according to some (Scott, et al., 1995). Moral dilemmas have been criticised for asking participants to navigate scenarios that are potentially unfamiliar, or telling participants they have made decisions leading up to the scenario that they may not agree with, researching decision making and moral reasoning in situ is often not ethically possible. Thus, moral and decision making dilemmas where participants are asked both to make a decision or judgement and to justify these in open-ended questions are perhaps the best available way to investigate both outcome and process.

The comparison between rationalist research and the ages at which doli incapax presumes significant improvements in moral reasoning and decision making abilities (10 and 14 years of age) is limited because age is not always a variable of interest. If age is of interest, either a broad range of ages are collapsed, or the age groups used are too widely spaced, so that specific age-based improvements in ability are not captured. The assumption made by doli incapax that young people are similar to adults by mid-adolescence is supported by some rationalist decision making research, although research indicates moral reasoning may not be mature until late adolescence. However, the decision making research
that utilised more realistic, vignette-based or real-time methodologies showed that
decision making still improved past mid-adolescence. Further, much of the
research outlined above is not psycholegal in nature, so while it can be related to
the age-based distinctions made under *doli incapax*, there is a need for research
that incorporates the *doli incapax* criteria directly.

**Dual-Process Research**

Dual-process theories posit that Type 1 (automatic, fast) decisions and
judgements are made using different neurological processes to Type 2
(deliberative, considered) decisions and judgements. Thus, much of the extant
dual-process research takes a neuropsychological approach. Thus, a large portion
of the research utilises brain scanning techniques (such as functional Magnetic
Resonance Imaging) to measure differences in response times on decisional and
judgement tasks. Importantly, the findings from such research support the notion
that different neural pathways are activated when making Type 1 and Type 2
decisions respectively (Greene, Morelli, Lowenberg, Nystrom & Cohen, 2008;
Greene et al., 2001). However, the information brain scan techniques provide, as
well as variables such as response time, are not of interest to this study. Thus,
reviewing this dual-process literature in detail would add little to the
conceptualisation of the present study and the later interpretation of results. That
said, the theoretical notion that not all decisions and judgements are made using a
rationalist, deliberative process is an important addition to rationalist
conceptualisations, which is why dual-process theory was discussed in Chapter
Three.

Because many dual-process theories were created to explain adult moral
reasoning and decision making, the dual-process research is limited in explaining
developmental trends, as much of the research is conducted with adult participants (Greene et al., 2001; Greene et al., 2008). The research using adolescent participants collapses several age groups together, or uses single age groups that are widely spaced (Klaczynski, 2001; Klaczynski & Cottrell, 2004), meaning that the age at which significant improvements in decision making and moral reasoning are not able to be pinpointed. The dual-process moral judgement literature continues the rationalist trend of utilising dilemmas. However, because dual-process research is concerned with moral judgement outcomes, or neural pathways, open-ended questions investigating moral reasoning process are rarely included. Considering the depth of understanding qualitative data can provide, the dual-process literature is limited by this exclusion.

Because two dual-process theories were discussed in Chapter Three (the prototype-willingness model, and fuzzy-trace theory), pertinent findings relating to these theories, are discussed here. As mentioned, the prototype-willingness model posits that young people will often express risk averse sentiments when asked if they would engage in risky health behaviour (such as unprotected sex and drug use). However, young people continue to engage in risky health behaviours at high rates compared to adults. Thus, the prototype-willingness model argues that young people may not plan to engage in risky behaviour, but may do so in the moment if two underlying factors are present. First, they must be willing to engage in the risky behaviour, under the right conditions. Second, they must have positive mental representations (prototypes) of individuals who engage in risky behaviour.

The prototype-willingness model is supported by research findings that show that until the age of 17 or 18, behavioural willingness correlates better with self-reported behavioural outcomes than intention does for both substance and condom use (Pomery, Gibbons, Reis-Bergan, & Gerrard, 2009; Spijkerman, van den
Eijnden, & Engels, 2005; van Empelen & Kok, 2006). However, the prototype-willingness model is limited as it applies only to risky health behaviour, and has not yet been applied to delinquent or offending behaviour. While this study does not endeavour to fill this gap, the behavioural willingness model may be applicable to adolescent delinquent behaviour in that young people may report no intention to offend, and then do so under particular conditions. However, no further research regarding the prototype-willingness model is discussed given the lack of psycholegal application of the model.

As described in the previous chapter, fuzzy-trace theory states that people can either make decisions at a verbatim level, paying attention to the surface-level specifics associated with a decision, or they can pay attention to the gist details, which are quickly activated, broad-strokes understandings of the situation (Reyna, 2004). Fuzzy-trace theory also posits that as age increases, heuristics become more accurate as individuals gain decision making experience. Research has shown that people make different decisions depending on how a risk is presented or framed. One such example used by Tversky and Kahneman (1981) asked 152 university students to imagine that the United States is preparing for an unusual disease to kill 600 people, and two alternative programs to combat the disease have been proposed. Framed in terms of gains, one program has a 1/3 probability that 600 people will be saved, and a 2/3 probability that no people will be saved. The other program, framed in terms of losses, has a 1/3 probability that no one will die and a 2/3 probability that 600 people will die. Both of these programs carry the exact same ratio of risk, but risk is framed differently. Although rationalist models would predict that participants would have no preference between the options based on how they are framed, as both options present the same logical risk, participants preferred the risk framed in terms of gains, with
almost 75% of participants choosing the first option. However, the individual’s mathematical abilities are likely to impact these findings. Further, this finding is limited in its application to this thesis by the use of an adult sample.

Reyna and Ellis (1994) furthered this research by investigating the effect of framing risk in terms of gains or losses on a sample of 111 young people made up of 28 preschool children (mean age 4.7 years) 40 second graders (mean age 8.9 years) and 43 fifth graders (mean age 11.1 years). Participants engaged in a task where they could win toys by spinning a wheel similar to those in board games. The wheel was colour coded into either 1/2, 2/3 or 3/4, and toys were placed in clear bags on the corresponding section of the wheel. On each spin, participants were told the chance they had to win nothing (gain frame) or lose something (loss frame). Each of the three age groups approached this task differently. The preschool participants did not show any significant differences in their decisions based on the frame, and typically chose the option with the highest possible gain numerically (often the risky option). Fuzzy-trace theory interprets this finding to demonstrate that young participants gauge risk based on verbatim, quantitative details.

The framing of risk only affected second grade students when the differences between outcomes were largest, in the highest risk condition, where they tended to choose the risky option with the potential for the greatest gains. Again, fuzzy-trace theory would put this down to quantitative processing of gains rather than gist processing of risk. The fifth grade participants showed a similar pattern to the second graders by choosing in favour of gains in the high risk condition, but also demonstrated some ability to favour guaranteed smaller gains and avoid risky decisions even if they had the potential to lead to big pay offs, which is consistent with how adults typically make decisions in these situations.
(Levin, Gaeth, Schreiber, & Lauriola, 2002; Reyna, et al., 2011). Reyna and Brainerd (2011) state that this pattern of utilising risk-averse gists to make decisions emerges and starts to dominate decision making between early and late adolescence.

**Dual-process research summary.** The research reviewed here shows that developmental dual process literature is in its infancy, especially with respect to fully understanding how Type 1 and 2 processes develop, and at what age they are typically mastered. What the research does indicate is that there are two distinct cognitive processes (Type 1 and Type 2) at play when making decisions and moral judgements (see Greene et al., 2008; Greene et al., 2001 for discussions on this point), and that young people become more risk averse as they get older. While the above discussed research shows general developmental trends, age is again not the main variable of interest (decisional outcome is), and thus exact ages at which key decision making abilities are acquired have not yet been established.

Further, similar to the rationalist decision making research, the fuzzy-trace research utilises mathematical tasks that tend to lack real-world elements (Jansen, van Duijvenvoorde, & Huizenga, 2012). While mathematical tasks tell us about weighing costs and benefits, as well as the fallacies that exist within our decisions, they do not present individuals with everyday decisions or place their decision within a situational context in the way that moral dilemmas do. Further, young people's mathematical abilities would improve with age, which may account for these findings in part. Nevertheless, the above research broadly shows that as children get older they are increasingly able to predict the long term effects of their decisions and thus avoid risky decisions (Cassotti, Houdé, & Moutier, 2011; Crone & van der Molen, 2007; Hooper et al., 2004; Huizenga, Crone, & Jansen, 2007).

Although Smith, Xiao, and Bechara (2012) found that the ability to make less risky
decisions dipped in adolescence compared to childhood and adulthood, consistent with psychosocial theories of adolescent risk taking. However, by failing to replicate real-world decision making and moral reasoning conditions, the dual-process research also gives little consideration to the influence of psychosocial factors on the decision making and moral reasoning processes of young people. Because of the significant shortcomings in the dual-process research, and the lack of application to the present study, dual-process research is not discussed further.

**Psychosocial Research**

In contrast to the assumptions made by rationalist theories, which presume a sequential increase in the use of deliberate, logical decision making and moral reasoning processes with age, psychosocial theories predict that adolescents will make poorer (more risky) judgements and decisions relative to children and adults. As mentioned in Chapter Three, there are a number of social and emotional factors that impair the decisions and judgements of adolescents, which fall under the psychosocial umbrella. These include prioritising short term gains over long term consequences, optimistic risk perception, valuing peer approval, lacking autonomy in decision making, and being impulsive and sensation seeking (Scott et al., 1995; Steinberg & Cauffman, 1996). These factors have been explored using traditional research designs, and more recent brain imaging techniques have shed light on the neurological underpinnings of psychosocial immaturity.

**Peer influence.** The effect of peers on young people’s decision making and moral judgement has been explored by numerous researchers. Broadly speaking, the peer influence research has utilised a dilemma-based design and found that peers have the most negative impact on the decisions of young people during mid-adolescence compared to early or late adolescence (Berndt, 1979; Brown, 1990;
Erickson, Crosnoe, & Dornbusch, 2000; Krohnick & Judd, 1982; Steinberg & Silverberg, 1986). However, this body of research has been criticised for asking participants to imagine their responses if they were in the company of peers, potentially yielding different results to if the participants were actually with their peers. Gardner and Steinberg (2005) filled this gap and examined the influence of real-life peer presence on risky decision making. Their study required participants at ages 13-16, 18-22 and 24+ to play a computer game where they had to decide whether to stop their car on a computer screen upon seeing a yellow traffic light, or take a risk by continuing through the intersection, potentially causing an accident. Participants played the game alone or in the company of two peers of the same gender. Participants were also administered the Youth Decision Making Questionnaire (YDMQ; adapted from Ford, Wentzel, Wood, Stevens, & Seisfels, 1989 by Cauffman & Steinberg, 2000), where they read vignettes and had to decide if they would engage in the depicted risky behaviour across three conditions; where they would definitely be caught, would definitely not be caught, and were unsure if they would be caught or not.

Overall, all age groups took more risks in both the driving task and as measured by the YDMQ while with peers than alone, with peer presence having the biggest effects on the middle (13-16) and late (18-22) adolescent groups, compared to adults (Gardner & Steinberg, 2005). Most notably in the car game, late adolescents’ risky behaviours increased by 50% when in the presence of peers, while adults showed no significant difference in their risky behaviour with peers compared to driving alone. This is consistent with other research demonstrating that propensity to engage in delinquent behaviour during adolescence is increased by socialising with delinquent peers (Monahan, Steinberg, & Cauffman, 2009). Methodologically, the Gardner and Steinberg study is a good attempt at looking at
the effect of psychosocial decision making factors in real-time and creating naturalistic decision making environments by including real-life peers. However, the relative lack of experience with driving of middle adolescents is likely to have confounded the results. This highlights the importance of using tasks that are age appropriate when measuring decision making ability.

O’Brien, Albert, Chein, and Steinberg (2011) used a similar real-life method to investigate the effect of peer presence on delay discounting. In the delay discounting task, individuals were posed a series of questions in the style of “would you rather have $200 today or $1000 in six months?” the lower amount of money is varied, as is the time frame. A preference for taking lower amounts of money immediately over waiting a period of time for a larger sum of money is considered indicative of risky decision making. Participants were 100 undergraduate psychology students aged 18 to 20 who were asked to bring two same-aged peers to the experiment. The peer condition saw one randomly selected participant complete the delay discounting task while their two peers watched them (N = 45), and the individual condition participants completed this task alone (N = 55). Results showed that in the peer condition, participants made significantly more immediate-reward decisions than when peers were not present. That is, they prioritised short term over long term gains. While there were no significant effects of age, possibly because a small age range was used in the study, these findings provide some indication that risk evaluation is significantly impaired when peers are present, even for late-adolescents.

Steinberg and Monahan (2007) identified that much of the research concerning young people’s susceptibility to peer influence investigates decision making in antisocial situations. They questioned whether the inverted U-shaped curve seen in young people’s susceptibility to peer influence during adolescence
was due to the use of only antisocial scenarios, rather than prosocial or neutral scenarios. Steinberg and Monahan therefore investigated resistance to peer influence generally (without reference to a particular antisocial or prosocial context) in a cross-sectional sample of participants aged 10 to 30 using a newly developed measure named Resistance to Peer Influence. Their findings indicated that resistance to peer influence was poor between the ages of 10 and 14, linearly improved between the ages of 14 and 18, and remained stable from 18 to 30, which is broadly consistent with the age-based distinctions made under Australian law. This finding is in contrast to previous findings which show young people have difficulty resisting peer influence during mid-adolescence. However, it is likely that when young people are making antisocial decisions, they are more susceptible to peer influence than when they are making neutral decisions, as they are more likely to be emotionaly activated.

Steinberg and Monahan's (2007) finding broadly aligns with rationalist research, which presumes decision making gets progressively better with age. Further, these findings highlight that young people's decision making and moral reasoning abilities are not affected by peer presence when in neutral situations. However, these abilities are negatively impacted when they make decisions and judgements with peers, in high-stakes situations (such as whether to engage in antisocial behaviour). This is consistent with research that indicates young people can be competent decision makers in one context, but may not transfer these skills when making decisions in other contexts, indicating they lack task variability (Amsel, Cottrell, Sullivan, & Bowden, 2005; Crone & van der Molen, 2004; Dempster, 1992; Hooper et al., 2004; Overton, 1990; Overton & Byrnes, 1991; Reyna & Brainerd, 1994; Steinberg, 2004).
**Risk perception.** Research has also investigated how the perception of risk influences the decisions and judgements of young people. Research has found a disjuncture between how young people perceive risk for themselves compared to others. Generally, adolescents tend to overestimate the likelihood that same-aged peers will experience negative outcomes as a result of risky behaviour, compared to the statistical likelihood of experiencing these outcomes (Cohn, Macfarlane, Yanez, & Imai, 1995; Fischhoff & Quadrel, 1991). Although young people tend to overestimate the risks associated with a decision for people their age, they have an optimistic bias when it comes to themselves. For example, they might overestimate the chances of contracting a Sexually Transmitted Infection (STI) when engaging in sexual intercourse generally, but underestimate their personal risk of experiencing those consequences.

Research has further shown that these perceptions change as a function of experience. When adolescents who had experience in making risky decisions were studied, they perceived less risk associated with risky behaviours compared to young people who did not have experience with risky behaviours (Benthin, Slovic, & Severson, 1993). Thus, it is possible that young people who have more experience with making risky decisions and have not experienced the possible negative consequences, have a biased perception that the risks are smaller, better known, and more controllable than individuals who had minimal experience with risky decisions (Cohn, et al., 1995).

**Future orientation.** Considering that young people have been alive for a shorter period of time than adults, it has been argued by some that their estimation of the future is skewed compared to adults (Gardner, 1993). For example, if an adolescent was asked to project themselves 10 years into the future, that may be almost double their lifespan; the same length of time would be perceived
differently by a 40 year old adult. Steinberg, Graham et al. (2009) argue that there are three major components to future orientation: time perspective, which is whether the individual thinks about the future; anticipation of future consequences, which is the ability to think about the likely long term ramifications of current decisions; and planning ahead, which is whether the individual plans before making decisions.

Steinberg et al investigated these abilities using a self-report measure of future orientation designed for the purposes of the study, as well as the same delay discounting task as described in O’Brien et al. (2011) above. Participants were 929 individuals aged between 10 and 30 recruited from five different US states. Results showed that from 15 years of age there was a linear increase in future planning, but there was a decline in future planning between the ages of 10 and 15. While time perspective and anticipation of future consequences showed a significant linear increase with age overall, when broken down by age, a curvilinear relationship was evident; young people aged 12 to 15 were significantly lower on these abilities than participants younger or older than them. The delay discounting task revealed that only young people aged between 13 and 16 were significantly more oriented toward receiving immediate rather than delayed rewards compared to participants younger and older than them. Thus, there appears to be a dip in future orientation and delay discounting until approximately 16 years of age, after which young people are better able to project consequences into the future, think about the long term ramifications of their actions, and prioritise long term over short term gains. Compared to Gardner and Steinberg’s (2005) findings regarding risk taking, the negative influence of future orientation on decision making appears to cease at a younger age than risk taking.
**Multiple psychosocial factors.** The psychosocial research discussed so far investigates one or two psychosocial factors that affect the decisions and judgements of young people in isolation. There are also some key studies that build upon the theories that were discussed in Chapter Three, and therefore look at a range of psychosocial factors simultaneously. Fried and Reppucci (2001) endeavoured to utilise Scott et al.’s (1995) maturity of judgement model in investigating the role of psychosocial abilities in decision making in participants aged between 13 and 18. This study used a video stimulus (a scene from the movie *Sleepers*) in lieu of a decisional vignette. The video stimulus depicted four boys planning a robbery that resulted in the implied death of a man. On four occasions, the video was stopped and participants were asked about possible consequences, risks and benefits, and peer influence. Written measures of temporal perspective (the future subscale of the Stanford Time Perspective Inventory, Zimbardo, 1990), peer influence (Berndt, 1979) and risk perception (Benthin et al., 1993) were also administered as indictors of maturity of judgement. The researchers found that of their 56 participants, maturity of judgement was higher in both younger and older adolescents, who produced more mature decisions than mid-adolescents. The authors theorised that this drop in mature decision making by mid-adolescence coincides with a peak in adolescent offending, consistent with the age-crime curve (Farrington, 1986; Moffitt, 1993) because individuals in mid-adolescence are yet to develop psychosocial abilities necessary for competent decision making. They further theorised that prior to this dip, young people were likely mimicking rigid decisional rules they had learnt from parents and other adult role models.

In a similar vein, Cauffman and Steinberg (2000) explored the relationship between antisocial decision making and their three psychosocial factors (responsibility, perspective and temperance) in 1015 participants in five age
brackets: 13, 15, 17, 19 and 21+ years of age. As mentioned in Chapter Three, responsibility refers to how autonomous an individual’s decisions are relative to social influences of their parents and peers, perspective refers to the individual's ability to consider the long term consequences of their actions, and temperance refers to how impulsive or sensation seeking the individual is. They utilised the Psychosocial Maturity Inventory (Greenberger, Josselson, Knerr, & Knerr, 1974) to measure Responsibility, two measures of Perspective; the Consideration of Future Consequences Scale (Strathman, Gleicher, Boninger, & Edwards, 1994) and the future subscale of the Stanford Time Perspective Inventory (Zimbardo, 1990), and some subscales of the Weinberger Adjustment Inventory (Weinberger & Schwartz, 1990) were used to measure Perspective, with others used to measure Temperance. All these measures had good psychometric properties. The combined scores on measures of responsibility, perspective and temperance were added to represent psychosocial maturity. Finally, the Youth Decision-Making Questionnaire (adapted from Ford et al., 1989) was utilised to measure anti-social decision making across three conditions: when antisocial behaviour would have definite consequences, definitely no consequences, or uncertain consequences.

Cauffman and Stenberg’s (2000) results showed that psychosocial maturity improved as age increased. In all age groups, individuals with more psychosocial maturity exhibited less antisocial decision making than individuals with lower psychosocial maturity. The most impressive finding from this study was that psychosocial maturity predicted the likelihood of antisocial decision making better than age alone. Further, the psychosocial abilities began to resemble the abilities of adults between the ages of 16 and 19. Thus, the average adolescent is more myopic and less responsible and temperate than the average adult, with significant differences between the age groups until approximately the age of 19 (Cauffman &
Steinberg). With relation to *doli incapax*, this study shows that decision making remains impaired beyond the age of 14 when Australian law presumes young people to be significantly better decision makers than individuals younger than them. This study is also an excellent example of using well-spaced age groups to highlight significant changes in age-related competencies.

Modecki (2008) built on these research findings by investigating the responsibility, perspective, temperance, and antisocial behaviour of four groups of participants. A questionnaire made up of the same psychosocial measures as Cauffman and Steinberg (2000) was administered to 136 adolescents aged between 14 and 17, 255 college students aged between 18 and 21, 145 young adults aged between 22 and 27, and 146 adults aged between 28 and 40. Findings demonstrated that adolescents’ responsibility and perspective were significantly poorer than the older age groups, meaning that they were less able to make decisions free from peer influence and less able to consider the long term consequences of their actions. In terms of temperance, only adults were significantly more temperate compared to the other age groups, indicating their decision making was significantly less impulsive and sensation seeking. Antisocial decision making was significantly related to age, with adolescents (14-17 years old) making the highest number of antisocial decisions when there were definite negative consequences for their actions, and young adults (22-27) making the most antisocial decisions when there were no and uncertain consequences for their antisocial decisions.

Hierarchical regression was conducted using age, gender, race, education level, socio-economic status and antisocial decision making in the first step, and maturity of judgement in the second step found that maturity of judgement was the most powerful predictor of self-reported delinquency. Thus, psychosocial
factors better predicted maturity of judgement than age alone, highlighting the importance of looking at competency and not simply age with relation to legal culpability. These findings indicate that the psychosocial factors of responsibility and perspective impair decision making at least until the age of majority at 18 years of age, while emotional temperance continues to develop beyond that up until late 20s.

In order to look at the effect of decision making process, Modecki (2009) built upon the above findings by qualitatively investigating the amount of psychosocial content that participants expressed when making antisocial decisions. Three age groups were utilised; an adolescent group of 201 young people aged 12 to 17, a young-adult group of 273 participants aged 18 to 23, and an adult group of 261 parents of the young-adult group aged between 35 and 63. In contrast to Modecki (2008), where broader measures of responsibility, perspective and temperance were used, more specific measures of psychosocial factors were utilised including measures of the consideration of future consequences (the Future Outlook Inventory; Cauffman & Woolard, 1999), risk perception (the Risk Perception Scale; Siegel et al., 1994; and the Arnett Inventory of Sensation Seeking; Arnett, 1994), and resistance to peer influence Resistance to Peer Influence Scale; Steinberg & Monohan, 2007). In keeping with Modecki (2008) and Cauffman and Steinberg (2000), two vignettes were used from the Youth Decision Making Questionnaire (adapted by Cauffman & Steinberg from Ford et al’s 1989 measure). Qualitative questions were added to these vignettes to elicit the reasons for and against engaging in antisocial behaviour, and were coded according to theory-driven psychosocial categories in favour of antisocial behaviour (peer influence, sensation seeking, anger, and short-term benefits) and against antisocial behaviour (fear, perceived risk, legal, moral, short and long term consequences).
Adolescents (12-17 years old) were significantly more sensation seeking, had poorer risk perception and less future orientation, and were significantly more influenced by peers, compared to adults. Young adults (18-23 years old) were only significantly poorer compared to adults on the measure of peer resistance, and did not differ to the other age groups on any of the other psychosocial factors. These results suggest that peer influence continues to impair decisions up until the early 20s. When the age groups were compared on how much psychosocial content was present in their qualitative responses, adolescents and young adults had significantly more psychosocial content in favour of antisocial decision making, compared to adults. When just adolescents and young adults were compared for their psychosocial content, adolescents responded with significantly more short term benefits and significantly less peer influence than their young adult counterparts. However, as with other developmental studies, Modecki (2009) collapsed a range of ages. Although differences between age groups are able to be investigated, using such age ranges means developmental trends cannot be tracked with great specificity.

**Psychosocial research summary.** Together, the above psychosocial research demonstrates that peers, time perspective, and risk evaluation continue to impair judgements and decisions past mid-adolescence. This contrasts with rationalist research findings, which showed that young people’s logical reasoning abilities are often equivalents to adults’ by mid-adolescence. Instead of judgements and decisions becoming increasingly logical and rational with age, psychosocial research shows that risky decision making follows an inverted-u shape curve, peaking in mid-adolescence. This period of poor judgement is associated with valuing peer approval, optimistic perceptions of risk and consequences, prioritising short term gains over long term consequences, optimistic risk
perception, lacking autonomy in decision making, and being impulsive and sensation seeking. The law fails to take psychosocial factors into account, and begins to assume young people are competent at age 14, right when the psychosocial research indicates young people's decisions become increasingly risky. As such, the above reviewed psychosocial research suggests that criminal responsibility should be mitigated in light of these findings (Scott et al., 1995; Steinberg & Scott, 2003; Modecki, 2008; 2009). For age-based legal criteria, these findings suggest that young people remain immature for longer than is currently recognised.

**Neuropsychological research**

The psychosocial research discussed above is supported by neuropsychological research that has emerged in recent years utilising brain imaging techniques. Although such methodology is not utilised in the present study, the available research provides key insights into the physiology underpinning the effects of psychosocial factors. This research has found that subcortical regions, in particular the limbic system, which is associated with evaluating rewards, processing emotion and learning, matures relatively early in the adolescent brain. This is consistent with adolescents being hypersensitive to rewards compared to children and adults (Galvan et al, 2006).

While the limbic system is developed by early adolescence, the prefrontal cortex, part of the frontal lobes responsible for executive functions such as the ability to plan in advance, think about long term consequences, think about the costs and benefits of an action, and control impulses, is still developing into late adolescence and early adulthood (Gogtay et al., 2004 ). What this means is that young people are still developing the ability to plan in advance, think about long
term consequences, think about the costs and benefits of an action, and cognitively control impulses up until their brains fully develop in their early 20s. Because subcortical structures (e.g. accumbens) develop before cortical structures (e.g. prefrontal cortex), adolescents are thought to rely more heavily on subcortical processes when making decisions or judgements, leading them to make riskier decisions.

Alongside these structural changes, functional changes are also taking place in the adolescent brain. White matter or myelination between areas of the brain continues to increase, essentially making it easier for regions of the brain to communicate with one another (Lenroot et al., 2007). It is thought that this increase in the connectivity of brain structures allows young people to better navigate complex decision making and judgement situations by allowing the prefrontal cortex to intervene and mediate the limbic system’s urge to make risky, reward-driven decisions (Steinberg, 2008).

Taken together, this emerging research echoes the findings of the psychosocial research reviewed above; adolescents have a brain-based tendency to seek rewards due to the maturity of the limbic system relative to the frontal lobes. Further, the lack of neural connectivity between brain regions means that the frontal lobes may not be triggered as readily when adolescents are faced with unfamiliar decision situations. The neurological research indicates that by age 15 or 16, reward-seeking as driven by the limbic system peaks and begins to decline as young people transition into adulthood and the prefrontal cortex matures (Steinberg, 2008). This developmental trend roughly lines up with the age-crime curve as described in Chapter Two, and sheds light on the biological basis of risk taking during adolescence. As this body of research is in its infancy, the link between the respective brain changes described above and adolescent risk taking
behaviour is somewhat speculative, although Steinberg (2008) argues that maturity of judgement theories which do not align with what is known about brain development are likely incorrect.

**Chapter Summary**

This chapter first reviewed rationalist decision making and moral reasoning research. Although the decision making research indicated that young people’s rationalist decision making abilities are equivalent to adults’ by mid-adolescence, study limitations including the use of mathematical tasks and lack of qualitative questions to investigate process mean young people’s decision making abilities may be overestimated. Rationalist moral reasoning research, conversely, has a long tradition of using moral dilemmas and asking both outcome and process-based questions. The use of dilemmas and accompanying questions that require participants to produce moral reasons arguably measure moral reasoning more accurately. This increased accuracy may account for why young people’s moral reasoning abilities were not found to be “mature” until late adolescence.

In reviewing the dual-process research, it was highlighted that there has been minimal investigation of young people to date using this paradigm, and thus how dual-process abilities develop during adolescence is unknown. Nevertheless, the available dual-process research confirmed that separate neurological pathways are activated when using Type 1 and 2 processes respectively. Although the dual-process arena lacks extensive developmental research, young people appear to favour decisions when they are framed in terms of gains. That is, young people are more interested in short term than long term gains. Methodologically, dual-process research is largely outcome based, and infers the decision or moral reasoning
process by using variables such as response time to indicate whether Type 1 or Type 2 processes were utilised.

Last, this chapter showed that psychosocial factors continue to influence young people’s decision making and moral reasoning abilities into late adolescence or early adulthood, which is consistent with recent brain maturation findings. While the psychosocial research is subject to some of the same above methodological criticisms, novel methodologies have been utilised such as including real-life peers, using video rather than paper-based vignette stimuli, and asking participants qualitative questions in order to tap decision making and moral reasoning process. Mostly, the biggest methodological advantage of psychosocial research over rationalist or dual-process is the use of young people at sensitive enough age intervals to be able to investigate age-based trends. However, much of the research discussed in this chapter did not use participants whose ages spanned the 10 to 13 age range of doli incapax, used widely spaced age groups, or alternatively used wide age ranges that meant developmental trends were lost. An additional difficulty with comparing studies was that the definitions of “adolescent” “young adult” and “adult” varied depending on the researcher.

While links can be drawn between the psychological research discussed above and the age-based distinctions set out by doli incapax, what is lacking in the extant literature is psycholegal research that investigates moral reasoning and decision making while incorporating the legal standard of doli incapax. As the following chapter describes, the present study draws upon the content in the previous chapter in constructing a design that may be more able to address the psycholegal questions in Victoria.
Chapter 5

The Present Study

Whether a young person should be held criminally culpable is one of the most important developmental questions that can be asked in the legal system. In Victoria, age is used as a “herding” mechanism by the law. Under the age of 10, young people are presumed irrefutably doli incapax (to lack the requisite state of mind, or mens rea, to be held accountable). Between the ages of 10 and 13, young people are still presumed doli incapax, although this may be rebutted if the prosecution can show that the individual young person knew their actions were seriously wrong and not just naughty at the time of the offence. From the age of 14, young people are presumed doli capax (to possess the requisite mens rea to be held accountable), although this can be rebutted if the defence can show that the individual young person did not know their actions were seriously wrong at the time of the offence. Thus, the operation of the doli incapax presumption shifts at age 10 and again at age 14, meaning there is a legal assumption that young people are possibly (but unlikely to be) competent at 10 years of age and are presumed competent at 14 years of age (see Figure 2 for a visual representation of the possible legal process at different ages). Despite using individual competency assessments between the ages of 10 to 13, the law presumes that competence develops linearly as age increases, which is why doli incapax is easier to rebut the closer a young person is to the age of 14 (Bandalli, 1998; C v DPP (1996) 1 AC1 at 38).
Figure 2. The Legal Process Relevant to Doli Incapax in Victoria.

- Young person is irrefutably presumed to lack the requisite competence to be held accountable for offending.
- Young person deemed to have not understood their actions were seriously wrong and not just naughty at the time of the offence.
- Deemed doli incapax and therefore not held culpable for their offending behaviour.
- Deemed doli capax and therefore held culpable for their offending behaviour.

- Young person presumed competent on a group level. Individual competency assessment required if defence is to rebut this presumption.
- Young person deemed to have understood their actions were seriously wrong and not just naughty at the time of the offence.
- Deemed doli capax and therefore held culpable for their offending behaviour.

- Young person presumed incompetent on a group level. Individual competency assessment required if prosecution is to rebut this presumption.
- Young person deemed to have not understood their actions were seriously wrong and not just naughty at the time of the offence.
- Deemed doli incapax and therefore not held culpable for their offending behaviour.

- Young person has criminal act alleged against them (Actus reus).

- Under the age of 10
- 10, 11, 12 and 13 year olds
- 14 year olds to age of majority (18 years)
As discussed in Chapter Two, both moral reasoning and decision making abilities are central to *doli incapax*. Moral reasoning abilities are required to assess your actions to be *seriously wrong* rather than *naughty*, and decision making abilities are necessary to weigh short and long term consequences, foresee risks and project decision alternatives into the future. Thus, the *doli incapax* presumption acknowledges that these abilities develop at varying rates between the ages of 10 and 13. By the age of 14, young people are presumed to be able to morally assess situations and predict the outcomes of their decisions well enough to be held accountable for their criminal actions.

A large body of psychological theory and research has investigated the development of moral reasoning and decision making abilities in young people (see Chapters Three and Four). Rationalist research has found young people’s logical reasoning and deliberative decision making abilities are equal to adults by mid-adolescence (Belter & Grisso, 1984; Fischoff, 1992; Lewis, 1981; Weithorn & Campbell, 1982). However, it is acknowledged that while young people may have the same decisional outcomes as adults, they may consider different factors and utilise a different process to adults when making such decisions (Furby and Beyth-Marom, 1992). The dual-process literature recognised that not all decisions and judgements are made by considering all possible options, and rationally weighing the costs and benefits of each before reaching an outcome. Rather, many decisions and judgements are made quickly, drawing on experience in order to save cognitive resources (Amsel et al., 2008; Evans, 2009; Klaczynski & Cottrell, 2004; Stanovich & West, 1999). This leaves young people open to making poor decisions and judgements, due to their relative lack of experience. Psychosocial research demonstrates that numerous social and emotional factors influence the decision making and moral reasoning abilities of young people until late adolescence or
early adulthood. Taken together, these findings do not align well with the legal standard of *doli incapax*, which presumes moral reasoning and decision making abilities to be at adult levels by age 14.

This thesis therefore argues that the age ranges at which *doli incapax* apply are a product of history, meaning they were not developed from a sound research base. Thus, presuming 14 year olds to be sufficiently competent and therefore culpable for their criminal behaviour may be out dated, or inaccurate to begin with. Similarly, the terms *seriously wrong* and *naughty*, which act as one indicator of competence when assessing *doli incapax*, have been developed through common law judgements over time, and also lack empirical support. The terms *seriously wrong* and *naughty* are a loosely defined and subjective in their meaning, and are an unstandardised way of indicating competence. Whether the terms *seriously wrong* and *naughty* act as an accurate proxy for competence is also in need of investigation. The purpose of this thesis was therefore to bring empirical data to these areas of ambiguity by looking at young people’s performance on legally-relevant tasks at ages before, during, and after when the *doli incapax* presumption changes (at 10 and 14 years).

In order to explore the legal assumptions associated with age, this study included participants younger than 10 and older than 14. Specifically, five age groups were included; 8, 10, 12, 14, and 16 year olds. These age groups allow both the minimum age of criminal responsibility (10 years of age) and the age at which the presumptive direction of *doli incapax* changes (14 years of age) to be questioned. Research that has investigated developmental trends in legally-relevant abilities (see Chapter Four) sometimes used age groups that were too far apart (e.g. 10, 16, and 21 year olds), or collapsed multiple ages by using wide age ranges (e.g. 10 to 13 year olds, 14 to 18 year olds). Because this thesis seeks to
challenge the current age-based legal distinctions, having age groups close together was necessary. This will provide greater specificity in identifying the ages at which psychological abilities significantly improve. In order to run preliminary analyses, this study aimed to gather at least 20 male and 20 female participants for each age group, meaning a minimum total sample size of 200 was required.

Considering this thesis marks an initial attempt to explore the developmental assumptions made by doli incapax, a stimulus tool was developed for the purposes of this study. The tool, named Competencies Associated with Doli Incapax (CADI), uses two vignettes to gather data on both decision and judgement outcomes, as well as the process young people reported they used to reach those outcomes\(^{51}\). The two vignettes are based on real-life crimes committed by young people in Australia; dropping rocks from freeway overpasses onto cars below, and pushing a peer into a lake (as mentioned in Chapter One). Given vignette-based measures have been criticised for not being age-appropriate, or for being too directive (Cauffman & Steinberg, 1995; Scott et al., 1995), the CADI vignettes use language that is suitable for eight to 16 year olds. Additionally, the CADI has a novel “choose-your-own-adventure” format, allowing participants to report key choices they would make throughout the scenarios and provide qualitative justifications for these decisions. Further, the CADI is responsive to participants’ choices, with their reported decisions directing their path through the scenarios. This was designed to address the static, directive nature of previous scenario-based measures. At set points, participants are asked to label these vignettes using doli incapax terms (including seriously wrong and naughty), and to qualitatively explain their label choice. Further, photos (similar to those used by Dooley et al.,

\(^{51}\) It should be noted that this thesis does not aim to develop a psychometric measure that measures culpability as defined by the law. It is argued that it would be premature to develop such a psychometric measure given the dearth of psycholegal research directly related to doli incapax.
2010) accompany each stage of the tool, to enhance the emotional involvement of participants, and to standardise these aspects, which would otherwise be left up to participants’ imagination.

The CADI is designed to gather data on how young people use and understand the *doli incapax* criteria and make decisions in relation to legally-relevant vignettes. It was also important to include psychometric instruments that purport to measure moral reasoning and decision making, as these are the constructs that underpin *doli incapax*. This thesis aimed to include two measures of moral reasoning and two measures of decision making to ensure the measurement of these constructs was robust. In terms of measuring moral reasoning or moral judgement, the first decision was whether to utilise a production or recognition measure. As mentioned in Chapter Four, recognition measures where participants typically choose statements they think represent their moral reasoning ability can often inflate results (Narvaez, 2010). Considering this, it was decided that a production measure would be utilised in this study to more accurately measure participants’ moral reasoning, and to understand participants’ reasoning process. That is, measures that included a qualitative component were of interest, as were measures that contained both a quantitative (outcome-based) and qualitative component (process-based).

Although the Moral Judgement Interview (Colby & Kohlberg, 1987; Colby et al., 1983) is a well-respected production measure of moral reasoning, and has been widely used (Baek, 2002; Colby & Kohlberg, 1987; Colby et al., 1983; Nisan & Kohlberg; Snarey et al., 1985; Walker et al., 2001), it has been criticised for taking too long to administer and for having a cumbersome coding scheme (Gibbs et al., 1992). Given the number of participants required for this study, and the number of measures administered to each participant, the Moral Judgement Interview was
deemed too long for inclusion in this study. The Sociomoral Reflection Measure-Short Form (SRM-SF) (Gibbs et al., 1992) provides a shorter, more succinct production measure option, as it utilises single sentences to orient participants to a moral question (see Chapter Three for a full description). Gibbs et al (1992) argue that using a single sentence allows participants to incorporate their own assumptions, interpretations, and experiences into their responses. Further, this format also reduces administration time. Most previous research using the SRM-SF has administered the measure to participants as young as 12 or 13 (Palmer & Hollin, 1998; 2001). However, Krcmar and Valkenburg (1999) used this measure with children between six and 12 years of age. Although this means the SRM-SF has had limited application with eight and 10 year olds, alternate options of production measures were limited. The shorter administration time, excellent reliability (see Method chapter) and comparatively easier coding scheme meant this measure was included in the present study.

With general measurement of moral reasoning taken care of by the SRM-SF, additional measures that either measured moral reasoning in a novel way or looked at moral reasoning in situations relevant to this thesis were investigated. Considering the age range utilised in this study, measures that could engage the younger participants and enhance their involvement were investigated. As Dooley, et al. (2010) argue, one problem with traditional, dilemma-based measures of moral reasoning is that they assume the dilemmas (which are thought up by adults) are relevant to young people. Dooley et al. were sceptical that young people would be utilising their everyday moral reasoning abilities if the dilemmas they were presented with were unfamiliar and removed from their everyday experience. Thus, they designed a measure that incorporated more real-life elements. Specifically, Dooley et al. wrote short dilemmas, about young people, and
accompanied these with photos of young people in the situation to minimise the information participants needed to hold in working memory. Dooley et al.’s measure incorporated two elements: an outcome-based element looking at whether the participant would engage in the morally questionable behaviour or not, and a process-based element where participants were asked to justify their moral decision. Their findings indicated that young people were familiar with these situations, and were engaged by the format. Unfortunately, the researchers were not ready to distribute this measure at the time materials were gathered for the present study. However, their novel way of exploring moral reasoning informed the development of the CADI.

As discussed in Chapter Four, Krcmar and Valkenburg (1999) investigated young people’s use of moral reasoning and moral development when navigating vignettes related to the use of justified and unjustified violence. They developed a measure, the Moral Interpretation of Interpersonal Violence (MIIV) Scale, which presents participants with four vignettes, two depicting violence that is justified (to protect someone or right a wrong) and two depicting unjustified violence (where the use of violence was disproportionate and unnecessary). The MIIV Scale contained both outcome and process-based questions; participants were asked to describe how right or wrong the actions of the person depicted in the vignette were, and then to justify this judgement. Krcmar and Valkenburg administered their measure to children and young people between the ages of 6 and 12. As mentioned, age-appropriate measures were difficult to source, so validity with children at the bottom end of our age range was one of the reasons this measure was included in the present study. More generally, the MIIVS was chosen for the current study because of the use of vignettes describing violent behaviour. Considering that many of the cases that explore *doli incapax* in the most depth are
for serious violent offences, the MIV scale enables the current research to gain an understanding of participants’ moral reasoning processes when violence is an issue.

Finding age-appropriate measures of decision making that incorporated an outcome and process element was difficult, as noted in Chapter Four. Many decision making measures were purely outcome based, often only producing categorical data. The Youth Decision Making Questionnaire (YDMQ) was originally developed by Ford et al. (1989), then modified and used to measure anti-social decision making by Cauffman and Steinberg (2000) as well as Modecki (2008). Given that antisocial decision making is linked to offending behaviour, and the YDMQ has been widely used, it was included in the current study. The measure had been used with participants only as young as 12 (Cauffman & Steinberg, 2000), which was a limitation of including it in the present study. Given the exploratory nature of this investigation, however, it was seen as an opportunity to provide some preliminary data on the applicability of the YDMQ with eight and 10 year olds.

With the Youth Decision Making Questionnaire measuring anti-social decision making, a general measure of decision making was sought to further illuminate age-based trends. As mentioned in previous chapters, the Iowa Gambling Task is a commonly used task that looks at participants' ability to weigh risks and rewards associated with decision making (see for example Crone et al., 2005 and Hooper et al., 2004). Cauffman et al. (2010), among other researchers (such as Cassotti et al., 2011), utilised a computerised version of the task, which potentially made the Iowa Gambling Task more engaging to young people. The researchers were contacted and kindly provided the computerised version of the Iowa Gambling Task. However, it was decided that the format (paper and pencil or
computerised) should be consistent across measures, to standardise administration and avoid confusing participants.

The Adolescent Decision Making Questionnaire (ADMQ) (Mann et al., 1988) was the final psychometric measure included in the present study. Based on conflict theory (discussed in Chapter Three), this measure was chosen for its ability to capture how young people make decisions under stress. When young people make the decision to engage in illegal behaviour (or not) in situ, they are often doing so under stress, including pressure from their peers, or pressure to make a quick decision. Thus, the ADMQ was included to capture participants’ reported decision making styles when under decisional conflict. Again, this measure had been used with school-attending participants from 12 years of age, which was a limitation of including it, but it also presented an opportunity to see how the ADMQ performs with younger age groups.

The above psychometric instruments identified for inclusion in this study (Sociomoral Reflection Measure – Short Form, Moral Interpretation of Interpersonal Violence Scale, Youth Decision Making Questionnaire, Adolescent Decision Making Questionnaire) come from the rationalist research tradition. Given the preliminary nature of this study, the inclusion of rationalist rather than psychosocial measures of moral reasoning and decision making is seen as a starting point for future research that can subsequently factor in psychosocial factors. It was still important to discuss psychosocial theory and research, as psychosocial factors may be useful in interpreting findings from the CADI, given the preliminary nature of this study.

As stated, the broad aim of this study was to add empirical data to the debates surrounding doli incapax, particularly whether the ages at which the doli incapax presumption changes (10 and 14) are empirically supported, and whether
the terms *seriously wrong* and *naughty* act as useful indicators of decision making and moral reasoning abilities. Due to the lack of previous psycholegal research that directly incorporates the *doli incapax* criteria, it would be premature to employ a traditional framework with directional hypotheses to explore the aims of this study. This thesis therefore utilises a broad investigative framework, which allows developmental trends to be explored without restricting the analyses to only examine the age differences set out by the law, or the developmental trajectory predicted by one theoretical model. This investigation is therefore guided by broad aims, a visual depiction of which are available in Figure 3 below.

For obvious reasons, only individuals (above the age of 10) who are alleged to have committed a criminal offence (*actus reus*) are eligible to enter the justice system. Because this study allowed participants to report whether they would engage or not engage in illegal behaviour, it has the opportunity to compare these individuals, something the law does not have the opportunity to do. The law does not make age-based assumptions about young people’s propensity to engage in illegal behaviour. In fact, the law acknowledges that any person of any age could make the decision to engage in illegal behaviour, it is their competence to understand the seriousness of their actions (and therefore their culpability) that the law assumes to vary according to age. In the interest of exploring young people’s reported decision to engage in illegal behaviour in the two vignettes adapted from real cases (dropping a rock onto traffic, and pushing a person into a lake), this study aims to:

1. Highlight age-based patterns in the decisions that young people report they would make at key points in the two vignettes.

In the interest of exploring decision making processes in addition to decision outcome, this study them aims to:
2. Investigate the relationship between reported decision and how young people justified their decision.

To then explore whether age relates to how young people justify their decision, this study aims to:

3. Highlight age-based patterns in the ways young people justified their decisions at key points in the two vignettes.

This aim will be met by looking at the association between age and the rationales participants provide when justifying their reported decisions.

As mentioned, if a young person commits a criminal offence (actus reus) between the ages of 10 and 13, and the prosecution seeks to challenge doli incapax, they are subject to an individual competency assessment. Further, the law states that if the young person (between the ages of 10 and 13) knew their illegal behaviour was seriously wrong as opposed to naughty at the time of the offence, they are deemed competent and to possess the requisite mens rea. Because this study provides participants with the option to report they would engage in risky behaviour or not, this provides the opportunity to see the rate at which young people who reported they would engage in illegal behaviour also utilised the label seriously wrong, across a variety of age groups. Thus, this study aims to:

4. Investigate whether reported decision and the labels that young people use (including seriously wrong and naughty) to describe the two vignettes are associated, and whether this association differs according to age.

This aim will be explored by looking at the association between reported decision and legal label chosen (from a selection including seriously wrong and naughty) for the sample as a whole, and each age group individually.

Because moral judgement and decision making abilities underpin being able to identify seriously wrong from naughty, and the law assumes these abilities
to linearly improve with age, psychometric measures of these constructs are utilised to explore age-based trends. In terms of the moral judgement and decision making psychometric instruments, this study aims to:

5. Investigate developmental trends across legally relevant age groups in psychometric measures of:
   a. decision making;
   b. anti-social decision making;
   c. sociomoral judgement and;
   d. moral reasoning in violent situations.

This aim will be explored by seeing where significant age differences lie on the above psychometric measures, and whether these align with the legal presumption that significant improvements will be seen at age 10 and 14.

Considering the law utilises seriously wrong as opposed to naughty as an indication of competence, this study also aims to:

6. Investigate whether participants that choose the label seriously wrong perform significantly better on the above measures of moral reasoning and decision making abilities than participants that choose the label naughty.

This aim will be explored using a series of ANOVAs, and post hoc tests will be conducted to pinpoint where significant age differences lie. These findings will speak to whether the legal labels (including seriously wrong and naughty) can differentiate between levels of competence (as measured by psychometric measures of decision making and moral reasoning).

Given that the law presumes young people develop moral reasoning and decision making abilities at varying rates between the ages of 10 and 13 (inclusive), and that the understanding and use of the seriously wrong and naughty are used as developmental indicators of competence, it follows that young people
aged 10 to 13 would be expected to use the label *seriously wrong* inconsistently, while from the age of 14 young people would be expected to use the label *seriously wrong* more often. Thus, this study aims to:

7. Highlight age-based patterns in the labels that young people use (including *seriously wrong* and *naughty*) to describe the two vignettes;

To explore young people’s reported rationales for their label choice, this study aims to:

8. Explore the association between the labels that young people use (i.e. *seriously wrong* and *naughty*) to describe the two vignettes and the justification they provide for choosing that label.

These findings will shed light on the things participants report thinking about when choosing a legal label. In exploring whether age relates to the way young people justify their choice of label, this study aims to:

9. Highlight age-based patterns in the justifications young people provide for choosing the legal label (including *seriously wrong* and *naughty*).

This aim will be met by looking at the association between age and the same justifications investigated in aim eight, above.

More broadly, this study aims to:

10. Inform legal positions regarding young people, particularly the way in which young people are processed under *doli incapax*.

11. Inform future research designs both methodologically and substantively.
Figure 3. Pictorial Representation of the Variables Included and Aims Investigated in the Present Study.\(^\text{52}\)

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\(^{52}\) Psychometric measures were included in the present study for the purpose of exploring age-based trends in performance on these measures, as well as whether the terms seriously wrong and naughty act an accurate proxy for moral reasoning and decision making ability. The relationship between decisional outcome and psychometric measures was not of interest, and thus does not appear as an aim.
Chapter 6

Method

Participants

Interviews were conducted with 245 participants aged eight, 10, 12, 14 and 16 (see Table 2 for distribution across age groups). Participants were eligible to be included in an age group if they were within the 12 months of the specified age. For example, eight year olds could range from eight years and zero months to eight years and 11 months of age. Of the 245 participants, 126 were female. Participants were from 103 different postcodes, 98 of which were Victorian\textsuperscript{53}. According to Australia Post data, these postcodes represent 3.1\% of all Victorian postcodes\textsuperscript{54}, and 13\% of the postcodes in the Victorian metropolitan regions of Melbourne and Geelong\textsuperscript{55}, indicating a good socio-economic spread for a sample of this size.

Table 2. Age and Gender of Participants

<table>
<thead>
<tr>
<th></th>
<th>8 year olds</th>
<th>10 year olds</th>
<th>12 year olds</th>
<th>14 year olds</th>
<th>16 year olds</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td>27</td>
<td>24</td>
<td>22</td>
<td>21</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>M\text{age}</td>
<td>8.45</td>
<td>10.48</td>
<td>12.40</td>
<td>14.46</td>
<td>16.45</td>
<td>119</td>
</tr>
<tr>
<td>SD\text{age}</td>
<td>0.26</td>
<td>0.28</td>
<td>0.27</td>
<td>0.32</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>24</td>
<td>24</td>
<td>27</td>
<td>27</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>M\text{age}</td>
<td>8.43</td>
<td>10.48</td>
<td>12.37</td>
<td>14.45</td>
<td>16.50</td>
<td>126</td>
</tr>
<tr>
<td>SD\text{age}</td>
<td>0.30</td>
<td>0.28</td>
<td>0.31</td>
<td>0.36</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51</td>
<td>48</td>
<td>49</td>
<td>48</td>
<td>49</td>
<td>245</td>
</tr>
</tbody>
</table>

These young people were recruited in several ways, including through known contacts to the researchers, advertisements placed in school newsletters,

\textsuperscript{53} Two participants had New South Wales postcodes, and three participants had Western Australian postcodes
\textsuperscript{54} There are a total of 3,163 postcodes in Victoria.
\textsuperscript{55} There are 726 metropolitan postcodes in Victoria.
posters placed in public places, social media, and snowball recruitment (existing participants referring new participants). Participants were excluded if they were not in one of the required age groups, if their primary language was not English, or if they had an intellectual disability.

**Materials**

In total, five measures were utilised during the interview; two decision making measures, two moral reasoning measures, and one stimulus tool incorporating the *doli incapax* criteria, which was designed for the purposes of the study. The order that the measures appeared in the questionnaire booklet was varied to minimise order effects, resulting in five versions of the questionnaire, with a different measure appearing first in each version (see Appendix A for the order in which measures appeared in each version of the questionnaire). Each version of the questionnaire was administered approximately the same number of times overall and to each age group (see Appendix B for exact figures). In order to standardise delivery, verbal instructions were included in the questionnaire booklet for the researcher to read to the participant. The first version of the questionnaire is included for the reader’s reference as Appendix C.

**Adolescent Decision Making Questionnaire.** The Adolescent Decision Making Questionnaire (ADMQ) is an Australian-developed measure designed to capture participants’ use of five broad decision making patterns; decision self-esteem, vigilance, complacency, panic and cop-out (evasiveness) (Mann et al., 1988). These five decision making patterns are based on the previously discussed conflict theory (see Chapter Three), which describes how individuals make decisions while under emotional stress (Janis & Mann, 1977). Decision making accompanied by a moderate level of stress is termed vigilant decision making and is characterised by
a thorough information search and consideration of all decision alternatives, provided the decision maker feels confident that a good solution can be found (decision self-esteem), and that there is time to engage in good decision making process. Both decision self-esteem and vigilant decision making are measured in the ADMQ, and represent good decision making. However, Janis and Mann (1977) state that if levels of decisional conflict become too high, decision making process with be negatively affected in one of two ways; panicking, and/or coping out. Panic measures the tendency to make hasty and impulsive choices, while cop-out measures the tendency of the respondent to avoid making decisions. Alternatively, if decisional stress is too low, decision makers may become complacent. The complacency subscale measures the respondent’s tendency for apathy and a lack of involvement in their decision making process. The scores on each of the subscales range from 0 to 18, with higher scores indicating use of a better decision making process (Mann, et al., 1988).

The ADMQ is a modified version of the original Decision Making Questionnaire (Mann, 1982) developed for use with adults, which was validated on college students and showed a test-retest alpha of 0.77 (Radford, 1982). This original scale was then modified by Mann et al., (1988) to make it suitable for use with adolescents, and has previously been used with young people from the age of 12 (Mann et al., 1988; Ormond et al., 1991). Moderate reliability has been reported with Cronbach’s alpha for individual scales between 0.66 for cop-out and 0.73 for vigilance and complacency (Harmoni, 1990, as cited in Friedman & Mann, 1993). However, other studies have reported poorer reliability at a subscale level, with Cronbach’s alpha ranging from 0.59 to 0.65 (Friedman & Mann, 1993) and between 0.52 and 0.66 (Ormond et al., 1991). However, when the reliability of the ADMQ was calculated for the overall measure, Cronbach’s alpha was 0.78 and 0.81,
indicating acceptable reliability (Friedman & Mann, 1993; Ormond et al., 1991).

For the current study, the original Adolescent Decision Making Questionnaire was provided to the writer by Professor Leon Mann in personal correspondence on the 29th of March, 2011.

**Youth Decision Making Questionnaire.** The Youth Decision Making Questionnaire (YDMQ) has been widely used in various forms within the decision making literature (see Chapter Four). Originally developed by Ford et al., (1989), the YDMQ was modified by Cauffman and Steinberg (2000), and then used in this form by Modecki (2008), among others, as a measure of antisocial decision making.

In the modified YDMQ, participants read several vignettes that present them with the opportunity to engage in antisocial behaviour. Participants are then asked to rate how likely they would be to engage in the behaviour under three conditions; if nothing bad would happen to them (no consequences), if something bad would happen, (definite consequences) and if they didn’t know whether something bad would happen (uncertain consequences). After imagining a condition, the participant was then given the following options; DEFINITELY engage in the behaviour, Probably engage in the behaviour, Probably not engage in the behaviour, DEFINITELY not engage in the behaviour (emphasis in original). The YDMQ has been utilised with participants from 12 years of age, and has good reported reliability, ranging from Cronbach’s alpha of 0.76 to 0.90 for the measure overall (Cauffman & Steinberg, 2000; Modecki, 2008).

To ensure that the vignettes were appropriate for young people aged eight to 16, the current study used only one of the vignettes in its original form (as modified by Cauffman & Steinberg, 2000); cheating on a test, and modified one other for the purposes of this study; stealing chocolate from a store (rather than clothing, as in the Cauffman & Steinberg version). The questionnaire was adapted
in this way as it is relatively unlikely that the younger participants (eight, 10, and 12 year olds) would have engaged in behaviours depicted in the measure such as stealing clothing, stealing a car, deceiving their employer, or smoking cannabis. As such, their responses to these questions may have reflected a lack of understanding of the content, rather than an antisocial decision making process. It is acknowledged that such modifications may negatively impact the reliability of the YDMQ. While the YDMQ was modified for use in the current study, and has previously been modified, the widespread use of the YDMQ in the decision making literature justified its inclusion here. The revised version of the YDMQ was sourced from Elizabeth Cauffman's (1996) doctoral dissertation, which formed the basis of Cauffman and Steinberg's (2000) article.

**Moral Interpretation of Interpersonal Violence Scale.** The Moral Interpretation of Interpersonal Violence Scale (MIIVS) is purported to measure both moral reasoning and moral development in regards to violent situations (Krcmar & Valkenburg, 1999). The authors define moral reasoning as the cognitive ability to consider all aspects of a situation. Broadly consistent with Kohlberg's theory of moral development, Krcmar and Valkenburg state that early moral reasoning is characterised by egocentric understandings of situations, and a focus on the self, while more advanced moral reasoning is characterised by being able to take the perspective of other players in the situation, think about the motivation of other players, consider the needs and welfare of others, and also reflect on the fairness to each player in the situation. Moral development, on the other hand, is defined by the authors as the learning of moral choices by observing family members, peers and people in the school environment (Krcmar & Valkenburg).

The MIIVS consists of four vignettes, two portraying the use of justified violence, where the protagonist uses violence in response to a wrong done to them
by another character, and two portraying the use of unjustified violence, where the protagonist uses violence that is disproportionate or uncalled for in the circumstances. After being presented with the vignette, participants are then asked to indicate whether the protagonist was right, wrong or in the middle. Based on this response, the participant is then oriented to one or the other end of a seven point scale (very, very wrong; very wrong; a little wrong; in the middle; a little right; very right; very, very right). Once the participant has nominated how wrong or right the perpetrator’s actions were, they are asked what they mean by that response option, in order to understand their moral reasoning process. For the purposes of this study, the additional prompts “Anything else” and “Why is that (very, very wrong; very wrong; a little wrong; in the middle; a little right; very right; very, very right)” were added to elicit any further responses participants had.

The coding of the qualitative responses in the MIIVS is based on Eisenberg-Berg’s (1979) 10-category coding scheme. Krcmar and Valkenburg (1999) utilised eight of these categories, deleting two categories as they did not occur in their participants’ responses. The authors then collapsed three categories; approval and interpersonal orientation, reference to and concern with human kindness, and overt empathic orientations, to create a category called Perspective Taking. Krcmar and Valkenburg justify the amalgamation of these categories by saying that statistically the categories contained few responses, which made it difficult to compare the categories across groups. They also argue that the theoretical basis of the collapsed categories is similar in that they all require the individual to perspective take. The other five categories remained untouched from the original coding scheme; Authority/Punishment, Stereotypical Reasoning, Hedonism,

56 The term used here was the response chosen by the participant earlier in the vignette.
Needs-oriented, Human Rights. These five categories were used to code the responses participants provided.

The MIIVS has been administered to participants from the age of 6 and has been shown to have acceptable reliability, with Krmar and Valkenberg (1999) reporting the justified violence vignettes had a Cronbach’s alpha of 0.81, while the unjustified violence vignettes had a Cronbach’s alphas of 0.75. Krmar and Curtis (2003) reported slightly poorer reliability in their study using the MIIVS, with the justified vignettes having a Cronbach’s alpha of 0.73 and the unjustified vignettes having a Cronbach’s alpha of 0.60.

**Sociomoral Reflection Measure – Short Form.** The Sociomoral Reflection Measure – Short Form (SRM-SF) is a production measure of moral judgement, designed to capture increasing complexity in the way individual’s reason about their actions and values from childhood through adolescence into adulthood (Gibbs et al., 1992). The SRM-SF has a strong theoretical basis (see Chapter Three), and is largely based on the moral development work of Kohlberg (Colby et al., 1983; Kohlberg, 1981; 1984).

Gibbs et al. (1992) describe four stages of “sociomoral justification”, as this pertains to the reasons individuals give for their moral decisions or values (their moral reasoning process). Gibbs et al.’s stages are broadly divided into the Immature Level (Stage 1 and 2) and the Mature Level (Stage 3 and 4). Each stage has several “aspects” or facets that form the scoring criteria (see Gibbs et al. for a detailed description). Stage 1 is characterised by sociomoral reasoning that is “unilateral and physicalistic”, meaning that individuals in Stage 1 tend to make sweeping statements about absolute moral rules that consider only one perspective (unilateral) and are often related to the physical aspects of an authority figure, such as their height or strength (physicalistic), demonstrating a
concrete understanding of the world. In Stage 2 sociomoral reasoning is more internalised than in Stage 1; individuals relate situations to themselves, and are able to make reference to psychological or emotional considerations. However, these references are typically superficial and often transactional in nature, relating to the respondent gaining something in return for an action. Stage 3 is characterised by “mutual and prosocial” sociomoral reflection in that individuals reference reciprocal social interactions and the expectations they hold about others’ behaviour, as well as they own, when responding. At Stage 4, sociomoral reflection is expanded to encompass society as a whole, described as “systemic and standard”. Here individuals take a more abstract, meta view of the world, making reference to social systems and population-wide standards of relating to one another.

The four stages described above are used to score responses to 11 questions that tap into sociomoral constructs. Gibbs et al. (1992) report that the SRM-SF has good test-retest reliability ($r(234) = 0.88, p < 0.0001$), and a Cronbach’s alpha of 0.92$^{57}$. Additionally, they report that the SRM-SF has acceptable validity. Specifically, the SRM-SF shows good convergent validity with the Moral Judgement Interview (Colby & Kohlberg, 1987), another prominent production measure of moral judgement ($r(43) = 0.69, p < 0.0001$). The SRM-SF also correlates positively with age ($r(372) = 0.66, p < 0.0001$), verbal intelligence, controlling for age ($r(319) = 0.49, p < 0.0001$), and socioeconomic status ($r(349) = 0.20, p < 0.0001$), demonstrating good convergent validity. Gibbs et al. report that the SRM-SF did not correlate with a measure of social desirability, which is evidence of discriminant validity. Further, Gibbs et al. argue that the SRM-SF is a suitable measure when investigating developmental trends, as their research

$^{57}$ N = 374.
shows the SRM-SF was sensitive enough to detect significant differences between age groups. Previous research has administered the SRM-SF to participants generally from 10 years of age (Basinger et al., 1995; Gibbs et al., 1992), but has been administered as young as six years of age (Krčmar & Valkenburg, 1999).

In order to score the SRM-SF, significant training needs to be undertaken (approximately 30 hours), consistent with the guidelines set out in the SRM-SF manual. These were fully adhered to, and seven members of the research team were trained and coded the responses provided by the participants. Twenty-eight of the interviews were double-coded and the seven researchers had a global-stage agreement of 94% within one interval. This is comparable to the inter-rater reliability described by Gibbs et al. (1992), which varied between \( r = 0.94, p < 0.0001 \) and \( r = 0.99, p < 0.0001 \).

**Competencies Associated with Doli Incapax.** Competencies Associated with *Doli Incapax* (CADI) was developed for the purposes of the current study. The measures described above address decision making and moral reasoning, which underlie doli *incapax*, but do not make specific reference to the *doli incapax* criteria themselves. The CADI was therefore created to incorporate the Victorian *doli incapax* criteria, as stated in common law. By using the *doli incapax* criteria themselves, the tool was designed to explore the utility of the criteria as well as young people’s moral reasoning and decision making process in response to the criteria.\(^58\).

Participants were presented with two vignettes based on real-life offences described in Chapter Two; one where they have the opportunity to drop a rock from an overpass onto a freeway (rock scenario), and the other where they have the opportunity to push someone from school, who got them in trouble last week.

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\(^{58}\) It should be noted that this thesis does not aim to develop a psychometric measure that measures culpability as defined by the law. It is argued that it would be premature to develop such a psychometric measure given the dearth of psycholegal research directly related to *doli incapax*. 
into a lake (lake scenario). In both scenarios the participant is accompanied by a friend of the same age. The CADI uses a novel choose-your-own-adventure format, which gives participants the ability to make decisions about whether they want to participate in dropping rocks or pushing the person into the lake, while also finding out their reasoning process for such decisions. Their reported decisions at set points determined their path through the four stages within the CADI; Invitation, Coercion, Escalation and Culmination. Each of these stages progressively revealed more information about the situation, which is described below. Accompanying the below description of the stages, Figures 4 and 5 (also below) show the potential paths through the CADI.

In the Invitation stage, participants are presented with the scenario; their friend suggests dropping rocks from the overpass or pushing the person into the lake. To increase participants’ chance of identifying with the task, and for the sake of realism, they were told the person on the railing was a peer the same age as them. In both scenarios, participants are presented with a picture of either the freeway from the overpass, or the person sitting on a railing at the edge of the lake. Photos were included to increase and standardise participants’ ability to visualise themselves in the situation and to hopefully increase their ability to think about the decision they would actually make if in that situation. Additionally, in the rock scenario, participants are presented with a physical rock at the Invitation stage, in order to standardise their understanding of the object that may drop from the overpass. On average the rocks weighed 1.21 kilograms.

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59 These photos are included as part of Appendix C.
60 See Appendix C for a photo sample of the rocks used in the present study.
Figure 4. Flow of Stages in the Rock Scenario

**Invitation Stage**
Your friend suggests dropping rocks off the bridge onto the freeway. Would you go with your friend?

Would go with friend  Would not go with friend

**Coercion Stage**
“Come on, it will be fun to drop rocks off the bridge and see what happens. It’s not a big deal. Don’t be such a wimp.” Would this change your mind?

Would now go with friend  Would still not go with friend

**Escalation Stage**
Your friend drops a rock off the bridge and you see a car on the freeway swerve to miss the rock. It’s your turn to drop a rock. What would you do?

Would drop the rock  Won’t drop the rock

**Culmination Stage**
You drop a rock off the bridge. You see the rock smash a car windshield, and the car stops at the side of the road

**Escalation Stage**
Your friend then drops a second rock off the bridge. You see the rock smash a car windshield, and the car stops at the side of the road
Figure 5. *Flow of Stages in the Lake Scenario*

**Invitation Stage**
You see a person who got you in trouble last week. Your friend says “let’s go over and push them in” Would you go with your friend?

- Would go with friend
- Would not go with friend

**Coercion Stage**
“If you don’t come with me, you’re a loser and I’m not hanging out with you anymore. Trust me, it’ll be funny.” Would this change your mind?

- Would now go with friend
- Would still not go with friend

**Escalation Stage**
Your and your friend walk up behind the person and you notice this sign (deep water). Would you keep going?

- Would push the person
- Won’t push the person

**Culmination Stage**
Your and your friend push that person into the lake. They are splashing around and yelling out “I can’t swim”

**Escalation Stage**
Your friend walks up behind the person and you notice this sign (deep water).
Once presented with this information, participants were asked to choose a legal label to describe the vignette from these options: *not wrong at all, naught, wrong, or seriously wrong*. As discussed in Chapter Two, a conceptual continuum of “wrongness” is presumed by the law between the terms *naughty* and *seriously wrong*. However, a mathematical continuum between these terms is not presumed, and as such data are treated as categorical rather than continuous. In line with the *doli incapax* criteria, *naughty* and *seriously wrong* are included as categories, alongside *not wrong at all* and *wrong* to provide participants with additional response options. Once the participant nominated label, they were asked why they thought that, in order to gain insight into their moral reasoning process. They were then asked if they would keep going with their friend. This reported decision determined which stage they entered next. Participants were then asked for the reasons why they would or wouldn’t go with their friend, and a series of additional exploratory questions. If the participant chose not to go with their friend, they would progress to the Coercion stage. However, if they chose to go with their friend, the participant would skip the Coercion stage and progress to the Escalation stage. The reader is referred to Figure 4 and/or 5 as a visual representation of the decision paths available to participants.

In the Coercion stage, the friend accompanying the participant tries to convince them to engage in dropping a rock or pushing the person into the lake by telling them that it will be fun, it’s not a big deal, and to not to be such a wimp (rock scenario) or by telling them that the friend won’t hang out with the participant anymore and pushing the person will be funny (lake scenario). Participants are

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61 Considering the exploratory nature of this study, the terms “not wrong at all” and “wrong” are included so that participants are not limited by having only the legal terms “naughty” and “seriously wrong” to describe the scenarios.

62 These additional exploratory questions do not appear in later analyses, for the sake of brevity, and as such are not described here. The reader can refer to Appendix C for the full version of the CADI, including the additional questions.
then asked whether this would change their mind about going with their friend, and to justify why they would or wouldn’t go. If the participant reported being successfully coerced by the friend and indicated they would now participate in dropping rocks or pushing the person, they progress to the Escalation stage where they meet the other participants who initially agreed to participate. If the participant reportedly resisted their friend’s attempts to coerce them, and stated they would still not drop rocks or push the person, they progressed to the alternate Escalation stage.

In the first Escalation stage, participants have decided to go to with their friend, either to the middle of the overpass to drop rocks (rock scenario), or towards the person from their school, to push them in the lake (lake scenario). The idea behind the Escalation stage is that the participant is given more information about the scenario and can therefore make more informed decisions about how to progress through the questionnaire. In the rock scenario, participants are told that they ride to the middle of the overpass with their friend. They are presented with another picture taken from the perspective of the middle of the overpass looking down onto the freeway. The friend drops a rock from the bridge, and the participant is told they see a car swerve to miss the rock. In the lake scenario, participants are shown a warning sign stating that the lake has Deep Water. Following this description, participants are asked again to evaluate the scenario again as not wrong at all, naughty, wrong, or seriously wrong. They are asked why they think that, and are then asked whether they would drop a rock themselves, or keep going with their friend to push the person into the lake. Participants are also
asked why they would or wouldn't keep going as well as additional exploratory questions\textsuperscript{63}.

Participants who reported they would not go with their friend to drop rocks or push the person are presented with the alternate Escalation stage. Here, they are told they stay where they are and watch the friend drop the first rock onto the freeway or walk towards the person by the lake. In the rock scenario, they are told that they can see a car on the freeway swerve to miss the rock, and in the lake scenario they are shown the \textit{Deep Water} sign and told that they notice the sign while their friend is walking towards the person from school. Participants are asked to evaluate the actions of the friend and nominate whether they are \textit{not wrong at all, naughty, wrong or seriously wrong}, after which they are asked why they think that, and an additional exploratory question\textsuperscript{64}. Depending on whether participants reported they would or would not participate, they entered the Culmination stage that reflected their reported decision.

Participants who stated they would join their friend dropping rocks are then told they drop a rock themselves from the overpass onto the freeway, see the rock smash a car windscreen, and see the car stop at the side of the road. In the lake scenario, participants are told they push the person into the lake, can see them in the water, splashing around and yelling out “I can't swim”. In the alternate Culmination stage (where participants have elected not to participate), participants are told they watch their friend drop a second rock, or watch their friend push the person into the lake, with the same consequences. Once given this information, participants in either Culmination stage are asked whether they think

\textsuperscript{63} See Appendix C for the full list of additional questions asked.
\textsuperscript{64} See Appendix C for the full list of additional questions asked.
their or their friends’ actions are not wrong at all, naughty, wrong, or seriously wrong, and why they think that, as well as another series of exploratory questions.

In addition to the novel “choose-your-own-adventure” style, the inclusion of photos is another novel feature of this stimulus tool and was designed to assist participants to feel as if they were in the situation. Further, these photos, and rock, were designed to standardise how participants imagines these scenarios. The CADI produced categorical data, by asking participants how they would describe the scenario (not wrong at all, naughty, wrong, or seriously wrong) and whether they would go with their friend (yes/no). A large amount of qualitative data was also produced, by asking open-ended questions about the decision making and moral judgement process the participant used when thinking about the scenario. These responses were coded using thematic analysis process, which is described as part of the next section.

**Procedure**

The measures included in the study were piloted with a small sample of participants who were ineligible to participate on the study due to their age (nine, 11, 13, 15, and 17 year olds). The purpose of the piloting process was to highlight any difficulties associated with administering the interview schedule to young people. Researchers involved in the piloting process provided feedback about two main difficulties. First, they reported that participants were providing so much content in their responses that the researchers were not able to capture the detail in handwritten notes. It was therefore decided that interviews would be recorded65. Second, researchers reported that some younger (eight and 10 year

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65 Recording interviews was approved by the Deakin Ethics Committee, and participants and their parent/guardian was informed of such in the plain language statement.
old) participants needed some of the words in the psychometrics defined. Ways to define such words were discussed with the research team.

Fourteen researchers collected data over a 10 month period from August, 2011 to June, 2012. Interviews were conducted at a location nominated by the young person and/or their parent or guardian. Most often, interviews took place in the young person’s home, or at Deakin University. On a few occasions, interviews were conducted at other locations such as public libraries. All interviews required there to be a private space available for the interviewer and young person to complete the questions, free from distraction and from parental involvement, should this censor the young person's responses. Across the 245 participants, the length of interview ranged from 24 minutes to 83 minutes, with the average length of interview being 44 minutes (sd=13.8). Interview time often varied depending on how verbose the young person was.

Considering the age of the participants, parental consent was required for participation in the study. This was arranged in various ways, depending on the point of contact that the participant or their parent/guardian had with the study. For example, if participants were known to the research team, they may have been invited to participate via phone. If the participant had seen the advertisements in a school newsletter the young person or the parent may have emailed the research team. During this recruitment process the young person or parent/guardian was also asked the following screening questions; whether the participant mostly spoke English at home, and whether the participant ever been diagnosed with an intellectual disability. If the young person did speak mostly English at home and had not been previously diagnosed with an intellectual disability, participants and their parent/guardian were provided with the plain language statement and consent form via email or in person prior to the interview taking place. The young
people themselves received a simplified plain language statement (see Appendix D), and the parent/guardian received a more comprehensive version (see Appendix E). These documents were amended when new researchers entered the data collection team (See Appendix F). Both the young person and the parent/guardian signed the consent form (attached to the parent/guardian consent form. See Appendix E and/or F), and if one or the other party did not consent, the interview did not go ahead.

In administering the questionnaire, the interviewer (a member of the research team) then sat opposite the young person with a table of some description between them. All questions were read to the participants to limit any confounding effects of differing reading and comprehension ability across the age groups. Participants were provided with the response options to each of the measures on a laminated card, to ensure that they didn’t need to remember these options. Additionally, all interviews were recorded, as preliminary testing of the interview made it clear that interviewers could not capture the detail of participants’ responses by taking hand-written notes.

Participants were initially asked demographic questions including their age, date of birth, and their suburb. The interviewer also noted the date and time of the interview, then read a disclaimer stating that no answers participants could provide would be considered “right” or “wrong”, and encouraged participants to give their opinion. Participants were also told that the interviewer would frequently ask them if they had anything more to add to their responses, not because the participant hadn’t provided the correct answer, but to ensure that the interviewer had heard everything the young person wanted to say. Participants were also encouraged to ask questions throughout the interview, and were told that they could have a break during the interview if they wanted one. The
interviewer then read the questions to the participant. Upon completion of the interview, participants were thanked for their time and given a $20 gift card for Dymocks (book store).

Data were entered in SPSS version 21, and the researcher that conducted the interview transcribed the qualitative responses to the MIIV, the SRM-SF and the CADI verbatim into an excel spreadsheet. To ensure the accuracy of the transcriptions, 81 (33%) of the transcripts were double-checked by nine members of the research team against the recordings. There was a high level of agreement between the recordings and the transcriptions, and any minor errors were rectified. As part of data cleaning, the entry of data into SPSS was checked by a different member of the research team. This process identified some errors in the administration of the questionnaire. In some cases, the error occurred so early in the measure that these participants’ repose had to be excluded from the analysis for that measure. If the error occurred later in measure, the data that were incorrectly gathered were treated as missing.

**Competencies Associated with Doli Incapax coding process.** Considering that there is minimal research concerning *doli incapax*, and the current study represents an initial qualitative investigation, subscription to a specific qualitative coding framework seemed premature. Thus, thematic analysis, as described by Braun and Clarke (2006), provided a more accessible form of analysis to code the

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66 One researcher mistakenly followed the CADI rock scenario as though four of the participants had said they would not go with their friend, when they had indicated in the initial Invitation Stage they would go with their friend. Another researcher mistakenly administered the Escalation Stage of the CADI lake scenario as if the participant said they would keep going with their friend when they had indicated they would not keep going. The same researcher had an eight-year-old participant who refused to answer the MIIV and YDMQ, as such these data are missing for this participant. A different researcher administered the MIIV using the participant’s response to the three-point scale, rather than the seven-point scale (they asked why they thought the protagonist’s actions were right, wrong or in the middle rather than why they thought the protagonist’s actions were very, very wrong, very wrong, a little wrong, in the middle, a little right, very right, or very, very right). Finally, another researcher’s recording device lost power during one of their interviews and three quarters of the SRM-SF was unable to be transcribed for one participant.
qualitative responses. The goal of the coding process was to provide a rich, thematic description of the responses participants gave to the CADI questions, thereby providing an understanding of the considerations young people make when presented with these vignettes. Epistemologically, an essentialist or realist approach was taken in approaching the data, meaning that the relationship between the language participants used was assumed to have a unidirectional relationship to their experience and meaning.

The purpose of the qualitative analysis was to understand the process that young people used and the things they considered when making decisions and labelling potentially dangerous situations. In doing so, it is not assumed that there will be one “best” process to use, and the purpose is not to uncover a definitive understanding of what young people consider or should think about when in these, and similar, situations. Some theory-driven themes taken from Chapter Three, such as peer-pressure, a well-researched factor that impacts on adolescent decision making and moral judgement, were utilised in coding the data. However, mostly data-driven themes such as references to the potential for the situation to cause harm were derived from the data using thematic analysis (Braun & Clarke, 2006). The data were coded primarily at the semantic level, with minimal assumptions made about the meaning of participants’ responses beyond what they said. A theme was identified when it captured an element that was important to participants’ understanding of the scenario and was spoken about by more than one participant. Whether a theme was mentioned or not mentioned was recorded; if an individual made reference to a theme, this was captured as a dummy variable.

An initial coding pro-forma was developed by the writer with 29 categories, some of which were theory derived, and others data driven. These categories were used to trial the coding process on a selection of participant’s responses for every
open-ended question in both the rock and the lake scenario. From this preliminary trial of the coding categories, 17 new categories were added to the coding pro-forma. Using the total 46 categories, responses to all questions from both the rock and the lake scenario were coded. For responses that did not fit neatly into a category, suggested codes were noted and these were discussed with the principal supervisor until an agreed upon category could be found. Further, when discrepancies were found in the transcriptions, the recordings were consulted and transcriptions amended. The lake and rock scenarios were then double checked by the writer to ensure all responses that could be coded were.

Double checking of the rock scenario lead to the creation of eight new categories, and the subsequent coding of relevant responses in the rock and lake scenarios. Simultaneously, the rock coding was checked and if responses were missing codes, these were added and entered. Mistakes in coding were also rectified. From this process, four new categories were created and coded in the rock scenario to ensure all responses were captured. Even after coding for the 12 new categories developed in double checking the rock scenario, there were some responses in the lake scenario that were not captured by the existing categories. Thus, 10 new categories were created only for the lake scenario, with a view to combining these when a theme became apparent. The lake scenario was then coded for the 10 new categories and thoroughly double checked to ensure that no potential codes had been missed and the codes given were correct. Table 3, below, lists the categories used to code the qualitative responses for the rock and lake scenarios respectively, with sample responses from the data. It should be noted that Table 3 lists only the categories that appear in the Results Chapter, thereby excluding references that were made infrequently. Further, some the categories
described below have sub-categories which were not utilised in later analyses. As such, a full list of categories and sub-categories is provided in Appendix G.
<table>
<thead>
<tr>
<th>Category Name</th>
<th>Exemplar(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people (All references)</td>
<td>“He could fall into the water and he maybe would probably drown”&lt;br&gt;“The person on the railing could die”&lt;br&gt;“Especially if the person can’t swim, he could drown”&lt;br&gt;“They could get injured”&lt;br&gt;“She could get concussion if she hits her head somewhere”&lt;br&gt;“People can get hurt”&lt;br&gt;“Someone could die”&lt;br&gt;“You could kill someone”&lt;br&gt;“People could be seriously injured”</td>
</tr>
<tr>
<td>Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified (Lake Only category)</td>
<td>“That’s a large overreaction or consequence for him just getting me in trouble last week”&lt;br&gt;“They wouldn’t deserve it because it wouldn’t have been that bad a thing (that they got you in trouble for)”&lt;br&gt;“It’s not fair how it’s two on one”&lt;br&gt;“They may have done something bad to you but that doesn’t mean you have to retaliate”&lt;br&gt;“There could be shallow water”&lt;br&gt;“If there was rocks she could hit her head”&lt;br&gt;“If they don’t know how to swim they could drown”&lt;br&gt;“There could be like crocodiles or something in there, or something that could eat her”&lt;br&gt;“If that car hadn’t swerved out of the way the rock could’ve hit it”&lt;br&gt;“If the car didn’t actually see that rock and didn’t swerve out of the way then it would have got hit and that could have seriously injured the person in the car”</td>
</tr>
<tr>
<td>Reference to qualities or abilities of the victim that</td>
<td>“He might not be able to swim”&lt;br&gt;“She could not know how to swim and she could drown”</td>
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<tr>
<td>would increase or decrease the risks associated with pushing the person into the lake (Lake Only category)</td>
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<tr>
<td>Pushing the person is nasty or mean</td>
<td>&quot;It wouldn’t be a nice thing to do&quot;</td>
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<tr>
<td>Justification for pushing the person</td>
<td>&quot;It’s just kind of mean&quot;</td>
</tr>
<tr>
<td>Reference to thought process leading up to / at the time of the offence (Intent / Motivation)</td>
<td>&quot;I would probably do it since he got me in trouble&quot;</td>
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<tr>
<td>Reference to thinking about how the person would react</td>
<td>&quot;He deserves it&quot;</td>
</tr>
<tr>
<td>Mention of danger or hazard resulting from pushing the person (All references)</td>
<td>&quot;If [they got you in trouble] for something you deserve then it’s fair&quot;</td>
</tr>
<tr>
<td>Contingencies that could reduce risk or increase safety</td>
<td>&quot;You had a fairly decent motivation or motive, I mean morally the motivation wasn’t that great&quot;</td>
</tr>
<tr>
<td>Victim’s death implied but not explicitly stated (Lake Only category)</td>
<td>&quot;You’d probably feel ‘I’d want to get this person back’ from getting you in trouble&quot;</td>
</tr>
<tr>
<td>Reference to putting someone’s life at risk</td>
<td>&quot;If it was done intentionally to hurt someone the it would be wrong&quot;</td>
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<tr>
<td></td>
<td>&quot;There might also be rocks on the bottom so she might also get really hurt as well&quot;</td>
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<td></td>
<td>&quot;They say deep water but you don’t know if there’s trees or something under there&quot;</td>
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<td></td>
<td>&quot;It’s really dangerous&quot;</td>
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<td></td>
<td>&quot;You could cause hazards on the road&quot;</td>
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<td></td>
<td>&quot;It is a hazard to the cars [to drop rocks]&quot;</td>
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<td></td>
<td>&quot;It’s very risky&quot;</td>
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<td></td>
<td>&quot;They obviously can’t swim and there’d probably be a chance of somebody not being able to help them&quot;</td>
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<td></td>
<td>&quot;You should just try to ignore it and move on&quot;</td>
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<td></td>
<td>&quot;It might be safer to just leave it and then you won’t get into any more trouble&quot;</td>
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<td></td>
<td>&quot;You should tell her that you’re there and have a conversation with her&quot;</td>
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<tr>
<td></td>
<td>&quot;It’s so easy to not do that and just walk away&quot;</td>
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<tr>
<td></td>
<td>&quot;[He could] hit a couple of rocks and he might not be able to get out&quot;</td>
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<tr>
<td><strong>life at risk</strong></td>
<td>“It’s stupid to put someone’s life at risk”</td>
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<tr>
<td>Potential damage to inanimate objects as a result of dropping rock(s) (All references)</td>
<td>“The car could swerve and then hit another car”</td>
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<tr>
<td></td>
<td>“The car could crash”</td>
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<td></td>
<td>“She’s just damaged a car”</td>
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<td></td>
<td>“That car could cause an accident”</td>
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<tr>
<td>Potentially receive sanctions for dropping rock(s) (All references)</td>
<td>“She can go to jail”</td>
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<td></td>
<td>“We both would have got in trouble”</td>
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<td></td>
<td>“My parents would probably get involved and get angry and I’d probably have to do more chores”</td>
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<td></td>
<td>“You could get arrested and fined”</td>
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<td></td>
<td>“They might tell your mum”</td>
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<td></td>
<td>“I could get in trouble by my parents, by the police, and by my friend’s parents. Yeah, just get in trouble.”</td>
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<tr>
<td></td>
<td>“I could also get grounded”</td>
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<tr>
<td>Poor quality of the idea / behaviour / decision</td>
<td>“I wouldn’t want to be involved in a really bad decision”</td>
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<tr>
<td></td>
<td>“Well, it’s not a very sensible idea”</td>
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<tr>
<td></td>
<td>“I’d try and convince him that it’s not a good idea”</td>
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<tr>
<td></td>
<td>“It’s a silly thing to do”</td>
</tr>
<tr>
<td></td>
<td>“It’s just stupid that someone would even think of doing that”</td>
</tr>
<tr>
<td>Reference to the legal system / suggested or actual rock dropping being illegal</td>
<td>“She can go to jail”(^{67})</td>
</tr>
<tr>
<td></td>
<td>“You could get arrested and fined”(^{24})</td>
</tr>
<tr>
<td></td>
<td>“I was a witness so I could be taken to court as a witness”</td>
</tr>
<tr>
<td></td>
<td>“There’d be some obligation legally to stop someone from doing that sort of thing”</td>
</tr>
<tr>
<td></td>
<td>“Just because it’d be fun, doesn’t mean it’s legal”</td>
</tr>
<tr>
<td></td>
<td>“It’s illegal”</td>
</tr>
</tbody>
</table>

\(^{67}\) These rationales would also be coded as mentioning a sanction.
| Reference to monetary cost of damage as a result of dropping rock(s) | “My mum might make me pay to fix up the car or pay the hospital fee or something like that” |
| Reference to existing knowledge of dangers associated with dropping rock(s) | “They would have to pay a lot just to get [the car] fixed” |
| You would have to pay for the damage” | “We saw a video at school about it (dropping rocks)” |
| “You hear stories in the news and stuff of kids dropping rocks off bridges and stuff” | “I have heard about people throwing rocks at cars” |
| “I did once throw a little fruit at a car and I regret that a lot and there was some serious consequences” | “That’s a large overreaction or consequence for him just getting me in trouble last week” |
| Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified (Lake only Category) | “They wouldn’t deserve it because it wouldn’t have been that bad a thing (that they got you in trouble for)” |
| “It’s not fair how it’s two on one” | “They may have done something bad to you but that doesn’t mean you have to retaliate” |

In order to look at broader trends in the rationales participants provided to open-ended questions, theory-driven master categories were created. Considering the rock and lake scenarios depict potentially risky behaviour, two risk-based categories were initially created: risk to respondent (participant) and / or friend, and risk to others. Then, in an effort to explore broader factors related to decision making and moral reasoning, participants’ responses were coded into five alternate theory-driven categories: morality, practical consequences, social considerations, prosocial thinking or behaviour, and antisocial thinking or behaviour. These five additional categories utilise some of the same risk-based categories, and thus are treated as separate from the two initial risk-based categories. Table 4 below lists the categories within each master category. The reader is referred to Table 3 above for exemplars of each of the categories listed. The rationale behind collating
such categories was that since the majority of categories were data-driven, collecting them into theory-driven master categories would not only highlight broader trends in the data, but allow the data to be filtered through a theoretical framework.

Table 4. List of Original Categories Included in the Master Categories

<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>Risk of harm to others</th>
<th>Morality</th>
<th>Practical Consequences</th>
<th>Social Considerations</th>
<th>Prosocial thinking / behaviour</th>
<th>Antisocial thinking / behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to the respondent or friend⁶⁸</td>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with dropping rock(s) / pushing the person</td>
<td>Reference to potential victim not deserving rock(s) dropped on them or to be pushed / dropping rocks or pushing the person not justified</td>
<td>Potential damage to inanimate objects as a result of dropping rock(s) / pushing the person</td>
<td>Reference to respondent or friend experiencing positive or negative social repercussions as a result of dropping rock(s) or pushing the person</td>
<td>Contingencies that could escalate risks / reduce safety (risk aware - thinks more risky contingencies are possible)</td>
<td>Contingencies that could reduce risk / increase safety (risk naive - thinks less risky contingencies are possible)</td>
</tr>
<tr>
<td>Potentially receive sanctions</td>
<td>Potential for harm to people (non-specific)⁶⁹</td>
<td>Reference to morality as a common ideal</td>
<td>Dropping rock(s) could damage nature / trees⁷⁰</td>
<td>Reference to respondent or friend peer pressuring one another</td>
<td>Respondent would warn the person</td>
<td>Respondent would watch their friend but not participate</td>
</tr>
</tbody>
</table>

Reference to: Reference to: Reference that: Mention of: Reference to: Dropping rocks or: Considering

⁶⁸ This is a sub-category of Potential for Harm to People
<table>
<thead>
<tr>
<th>Potential physical alteration</th>
<th>Potential for harm to people other than the respondent or friend(^68)</th>
<th>Reference to suggested or actual rock dropping/person pushing being immoral or wrong</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dropping rocks could hurt an animal(^69)</td>
<td>Reference to the emotional effect(s) of dropping rock(s) on victims' loved ones</td>
</tr>
</tbody>
</table>

\(^68\) This category was only used to code responses given in the Rock Scenario.

<table>
<thead>
<tr>
<th>Respondent being wrongly implicated / blamed for dropping rock(s) / pushing the person</th>
<th>putting someone's life at risk</th>
<th>takes the victim's perspective</th>
<th>Danger or hazard resulting from dropping the rock(s) / pushing the person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially being caught / seen by others</td>
<td>Reference to putting a human life at risk</td>
<td>Reference to dropping rock(s) / pushing the person being on the respondent or friend's conscience</td>
<td>Dropping rock(s) or pushing the person would inconvenience people / the person</td>
</tr>
</tbody>
</table>

| Reference to teasing / bullying as a result of dropping or not dropping the rock / pushing or not pushing the person into the lake | Reference to existing knowledge of dangers associated with dropping rock(s) or pushing the person into the lake | Reference to the type or amount of trouble the victim got the respondent in\(^70\) |

<table>
<thead>
<tr>
<th>pushing the person is not fun or not funny</th>
<th>pushing victim into lake / victim could fall into lake(^70)</th>
<th>Reference to providing assistance or alerting others</th>
<th>Justification for dropping to rock(s) or pushing the person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent would leave the scene</td>
<td>Prediction of no negative consequences from dropping rock(s) / pushing the person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential deadly creature in the lake$^{70}$</td>
<td>Dropping rocks is nasty / mean</td>
<td>Respondent stated they don't want to be involved</td>
<td>Dropping rock(s) or pushing the person is fun or funny</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>---------------------------------</td>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Victim's death implied but not explicitly stated$^{70}$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^{70}$ This category was only used to code responses given in the Lake Scenario
Chapter 7

Results

This chapter presents results as they relate to the aims set out at the end of Chapter 5. A pictorial representation of the variables used in the following analyses is presented in Figure 6 below. The lines between variables are labelled with the aim they explore. To provide the reader with a visual prompt of which part of the legal process that particular aim relates to, the part of Figure 6 that corresponds with the results presented will be reproduced at relevant times in this chapter. The first four aims relate to the Competencies Associated with Doli Incapax (CADI) tool; specifically to participants’ reported decisions about whether to participate in dropping the rock(s) or pushing the person into the lake. Although the law is only interested in individuals who have committed an offence (for obvious reasons), this study had natural variation in whether young people reported they would engage in risky behaviour or not. This study therefore had a unique opportunity to explore participants’ reported decision to engage in potentially illegal behaviour.

Figures 7 and 8 below provide a flow diagram showing the number of participants that reported they would engage or not engage at each stage of the rock and lake scenarios respectively. Key content from each stage of the questionnaire is included in these figures to assist the reader.
Figure 6. Pictorial Representation of the Variables Included and Aims Investigated in the Present Study

**Decision outcome:** Reported decision to drop the rock / push the person (*Actus reus*)

**Decision process:** Reasons young people gave for their decision to drop the rock / push the person

**Psychometric measures:** of decision making, anti-social decision making, moral judgement, moral reasoning in violent situations

**Age:** 8, 10, 12, 14, and 16 year olds

**Moral outcome:** Choice of legal label from the following list: *not wrong at all*, *naughty, wrong, seriously wrong*

**Moral process:** Reasons young people gave for their choice of legal label (*not wrong at all*, *naughty, wrong, seriously wrong*)
Figure 7. Responses Through the Various Stages of the Rock Scenario

**Invitation Stage: n = 241**
Your friend suggests dropping rocks off the bridge onto the freeway. Would you go with your friend?

Would go with friend
n=16 (6.64%)

Would not go with friend
n=225 (93.36%)

**Coercion Stage: n=225 (91.84%)**
Friend says: "Come on, it will be fun to drop rocks off the bridge and see what happens. It's not a big deal. Don't be such a wimp." Would this change your mind?

Would now go with friend n=0

Would still not go with friend n = 225 (100%)

**Escalation Stage: n=16 (6.64%)**
Your friend drops a rock off the bridge and you see a car on the freeway swerve to miss the rock. It's your turn to drop a rock. What would you do?

Would drop the rock n=0

Won't drop the rock n=16 (100%)

**Escalation Stage: n=225 (100%)**
Your friend then drops a rock off the bridge and you see a car on the freeway swerve to miss the rock.

**Culmination Stage: n=0**
You drop a rock off the bridge. You see the rock smash a car windscreen, and the car stops at the side of the road

**Culmination Stage: n=241 (100%)**
Your friend then drops a second rock off the bridge. You see the rock smash a car windscreen, and the car stops at the side of the road

---

71 The rock scenario has an N of 241 as four participants stated they would go with their friend at the Invitation stage, but were lead through the questionnaire as if they had said they would not go with their friend. This makes their data invalid, and they are excluded from the rock scenario.
Figure 8. Responses Through the Various Stages of the Lake Scenario\textsuperscript{72}

**Invitation Stage: $n = 245$**
You see a person who got you in trouble last week. Your friend says “let’s go over and push them in” Would you go with your friend?

- Would go with friend $n=23$ (9.39%)
- Would not go with friend $n=222$ (90.61%)

**Coercion Stage: $n=222$ (90.61%)**
Friend says: "If you don’t come with me, you’re a loser and I’m not hanging out with you anymore. Trust me, it’ll be funny.” Would this change your mind?

- Would now go with friend $n=12$ (5.41%)
- Would still not go with friend $n=210$ (94.59%)

**Escalation Stage: $n=35$ (14.29%)**
Your and your friend walk up behind the person and you notice this sign (deep water). Would you keep going?

- Would push the person $n=12$ (35.30%)
- Won’t push the person $n=22$ (64.70%)

**Escalation Stage: $n=210$ (94.59%)**
Your friend walks up behind the person and you notice this sign (deep water).

**Culmination Stage: $n=12$ (34.29%)**
Your and your friend push that person into the lake. They are splashing around and yelling out “I can’t swim”

**Culmination Stage: $n=232$**
Total: (95.10%)
Your friend pushes that person into the lake. They are splashing around and yelling out “I can’t swim”

\textsuperscript{72} One participant was lost from the Escalation stage, as they stated they would not keep going with their friend, but were asked questions as if they had said they would keep going. The way in which they labelled the scenario using the legal criteria is maintained, but their case is missing from then on. Thus, the total $n$ for the Culmination stage is 244. Percentages are calculated accordingly.
It is clear from Figure 7 that the majority of participants reported they
would not go with their friend to drop rocks from the bridge. Further, none of the
participants who initially declined to go with their friend reported being convinced
to participate at the Coercion stage. A proportionately small number of
participants reported they would go with their friend to drop rocks initially,
although they all declined to continue with their friend once they had seen their
friend drop a rock and watched a car swerve on the freeway in the Escalation
stage. Ultimately, all participants were told they watched their friend drop a
second rock in the Culmination stage, with no participants agreeing to drop a rock
themselves.

Figure 8 shows that, compared to the rock scenario, more participants said
they would go with their friend when presented with an opportunity to push a
person who had recently gotten them into trouble into a lake. Further, some
participants who initially reported they would not to go with their friend to push
the person reported being convinced to do so at the Coercion stage. A small
proportion remained with their friend to the Culmination stage but said they
would push the person into the lake. Although the majority of participants still
declined to participate in pushing the person into the lake, it is noteworthy that
more participants agreed to participate in the lake scenario compared to the rock
scenario. Building on this initial snapshot, the first aim was to highlight age-based
patterns in the decisions that young people report they would make at key points
in the two vignettes. See Figure 9 below for a pictorial representation of this aim.

---

73 Numerous chi square analyses are conducted as a part of Aim One. Because this thesis uses a
novel design, is exploratory in nature, and aims to build theory, alpha levels remain at p<0.05
throughout.
Figure 9. Pictorial Representation of the Variables Investigated in Aim One

**Decision outcome:**
Reported decision to drop the rock / push the person
(*Actus reus*)

**Age:**
8, 10, 12, 14, and 16 year olds
As stated in Chapter Five, the law does not assume that age will be associated with engagement in illegal behaviour; any person of any age could commit a criminal offence. Instead, the law makes developmental assumptions about how likely young people are to understand the seriousness of their criminal actions (their competence), and therefore their culpability.

In the Invitation stage of the Rock scenario, once participants were told that their friend suggests they drop rocks from the bridge onto the freeway, and they are shown an actual rock in order to add realism and standardise size, they are asked whether they would go with their friend to drop the rock. Table 5 displays the spread of responses, as broken down by age group.

<table>
<thead>
<tr>
<th>Age</th>
<th>Drop rocks</th>
<th>Not drop rocks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>3 (6.1%)</td>
<td>46 (93.9%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>1 (2.1%)</td>
<td>46 (97.9%)</td>
<td>47 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>3 (6.3%)</td>
<td>45 (93.8%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>2 (4.2%)</td>
<td>46 (95.8%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>7 (14.3%)</td>
<td>42 (85.7%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>16 (6.6%)</td>
<td>225 (93.4%)</td>
<td>241 (100%)</td>
</tr>
</tbody>
</table>

There was no significant association between age and whether participants would go with their friend or not \( \chi^2 (4, n=241) = 6.67, p=0.15 \), with the vast majority saying they would not go with their friend to drop rocks. It is of note that 16 year olds were more than two times more likely than all other age groups to report they would go with their friend, although this is a difference of only four participants. When age was recoded to align with the three age-ranges specified by the law (8 year olds; 10 and 12 year olds; 14 and 16 year olds), the association
between age and reported decision remained non-significant $\chi^2 (2, n=241) = 2.02$, $p=0.37$.

The 225 participants who stated they would not go with their friend then entered the Coercion stage where their friend said “Come on, it will be fun to drop rocks off the bridge and see what happens. It’s not a big deal. Don’t be such a wimp” in an effort to convince them to drop rocks. All participants who entered the Coercion stage maintained they would still not go with their friend. The 16 participants that stated they would go with their friend to drop the rock in the initial Invitation stage were then told that they rode with their friend to the middle of the bridge where they watched their friend drop a rock off the bridge and saw a car swerve to miss the rock. Participants were then given the option to continue with their friend and drop a rock themselves. All 16 participants said they would decline to do this. Thus, the association between age and reported decision could not be calculated for both the Coercion and Escalation stages, given that all participants chose not to participate.

**Aim One Rock Scenario Summary**

- Age was not significantly associated with participants’ reported decision to go with their friend to drop rocks in the rock scenario. Less than 10% of the sample reported they would accompany their friend to drop rocks, although this varied between 2% and 14% depending on the age group\(^7^4\).
- In the Coercion and Escalation stages, no participants reported they would accompany their friend to drop rocks.

\(^7^4\) Recoding age into the three legally relevant groups (8, 10 and 12, 14 and 16) did not change the non-significant association between age and reported decision.
In the Lake scenario, once participants had the scenario described to them, they were asked whether they would go with their friend to push the person into the lake. Table 6 shows the age breakdown of participants’ reported actions.

Table 6. Young People’s Reported Decision to Push the Person at the Initial Invitation Stage

<table>
<thead>
<tr>
<th>Age</th>
<th>Push person</th>
<th>Not push person</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>2 (3.9%)</td>
<td>49 (96.1%)</td>
<td>51 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>4 (8.3%)</td>
<td>44 (91.7%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>2 (4.1%)</td>
<td>47 (95.9%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>9 (18.8%)</td>
<td>39 (81.2%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>6 (12.2%)</td>
<td>43 (87.8%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>23 (9.4%)</td>
<td>222 (90.6%)</td>
<td>245 (100%)</td>
</tr>
</tbody>
</table>

The association between age and reported decision was not significant $\chi^2$ ($4, n=245$) = 8.89, $p=0.06$. While no linear age trends are evident, 14 and 16 year olds were up to twice as likely as the other age groups to say they would go with their friend. However, less than 10% of the overall sample gave this response. When age was recoded into three groups to mirror the age ranges set out by the law (8 year olds; 10 and 12 year olds; 14 and 16 year olds), the association between age and reported decision was significant $\chi^2$ ($2, n=245$) = 7.17, $p = 0.03$. This finding indicates that the age-based distinctions set out under *doli incapax* were associated with participants’ initial reported decision to push the person into the lake or not.

The 222 participants who stated they would not go with their friend to push the person in the Invitation stage then entered the Coercion stage, where they were told that their friend said “If you don’t come with me, you’re a loser and I’m not hanging out with you anymore. Trust me, it’ll be funny”. While most
participants stated they would still not participate, over 5% of the sample reported they would change their mind and go with their friend to push the person, as seen in Table 7.

Table 7. Young People’s Reported Decision to Push the Person at the Coercion Stage

<table>
<thead>
<tr>
<th>Age</th>
<th>Push person</th>
<th>Not push person</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>7 (14.3%)</td>
<td>42 (85.7%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>1 (2.3%)</td>
<td>43 (97.7%)</td>
<td>44 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>1 (2.1%)</td>
<td>46 (97.9%)</td>
<td>47 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>2 (5.1%)</td>
<td>37 (94.9%)</td>
<td>39 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>1 (2.3%)</td>
<td>42 (97.7%)</td>
<td>43 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>12 (5.4%)</td>
<td>210 (94.6%)</td>
<td>222 (100%)</td>
</tr>
</tbody>
</table>

A significant association between age and reported action was found, \( \chi^2 \) (4, \( n=222 \)) = 10.19, \( p=0.04 \). Although there is no discernable linear age trend, eight year olds (\( n=7 \)) were at least two times more likely than any other age group to say they would change their mind and go with their friend to push the person. When age was recoded into the three groups set out by the law, the association between age and reported decision remained significant \( \chi^2 \) (2, \( n=222 \)) = 9.88, \( p=0.007 \). These findings indicate that the age divisions set out in *doli incapax* are associated with participants’ reported decision to participate under peer pressure.

In the Escalation stage, participants who initially stated they would go with their friend (\( n=23 \)) and those 12 participants convinced to go in the Coercion stage were told they then walked up behind the girl/guy from school with their friend and passed the *Deep Water* sign. They were then asked if they would keep approaching the person on the railing. Findings from this item are displayed in Table 8, below.
Table 8. *Young People’s Reported Decision to Push the Person at the Escalation Stage*

<table>
<thead>
<tr>
<th>Age</th>
<th>Push person</th>
<th>Not push person</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>2 (22.2%)</td>
<td>7 (77.8%)</td>
<td>9 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>2 (40%)</td>
<td>3 (60%)</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>0</td>
<td>3 (100%)</td>
<td>3 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>6 (54.5%)</td>
<td>5 (45.5%)</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>2 (28.6%)</td>
<td>5 (71.4%)</td>
<td>7 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>13 (34.3%)</td>
<td>23 (65.7%)</td>
<td>35 (100%)</td>
</tr>
</tbody>
</table>

Although the association between age and reported decision could not be calculated due to an expected cell count of less than five\(^2\), approximately two thirds of participants declined to continue with their friend at the Escalation stage. There are no linear age trends, with 14 year olds three times more likely than the other age groups to say they would continue pushing the person in (although this represents only six participants). When age was recoded to align with the three age-based distinctions made by the law, minimum cell count requirements were met, but the association between age and reported decision was not significant $\chi^2(2, n=35) = 1.71, p=0.43$.

By way of providing a visual summary of these findings, Figures 10 and 11 below depict the flow chart of each scenario, broken down by age group.

---

\(^2\) Chi square tests should not be conducted with an expected cell count of less than 5 (Field, 2013; Howell, 2013). This standard is consistently applied throughout this chapter.
Figure 10. Responses Through the Various Stages of the Rock Scenario Broken Down by Age

<table>
<thead>
<tr>
<th>Invitation Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td><strong>%</strong></td>
</tr>
</tbody>
</table>

Go with friend  
N = 16

Go with friend  
N = 16

Not go with friend  
N = 225

Coercion Stage

<table>
<thead>
<tr>
<th>Coercion Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td><strong>%</strong></td>
</tr>
</tbody>
</table>

Go with friend  
N = 0

Still not go with friend  
N = 225

Escalation Stage

<table>
<thead>
<tr>
<th>Escalation Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td><strong>%</strong></td>
</tr>
</tbody>
</table>

Drop the rock  
N = 0

Won’t drop the rock  
N = 16

Culmination Stage

<table>
<thead>
<tr>
<th>Culmination Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td><strong>%</strong></td>
</tr>
</tbody>
</table>

---

76 The percentages presented here are the proportion of each age group as set out in the Invitation stage.
Figure 11. *Responses Through the Various Stages of the Lake Scenario Broken Down by Age*\(^77\)
Aim One Lake Scenario Summary

- Age was significantly associated with reported decision to push the person into the lake in the Coercion stage. Although only seven eight year olds agreed to push the person after being pressured by their friend (Coercion stage), they were at least two times more likely to be convinced to push the person than all other age groups.
- In the Invitation stage, age and reported decision were significantly associated once age was recoded into the three legally-relevant age groups. Fourteen and 16 year olds were approximately twice as likely to report they would push the person than the other age groups.
- Once participants had seen the Deep Water sign (escalation stage), at least 60% of each age group reported they would not continue to push the person, except for 14 year olds, 50% of which reported they would still continue to push the person.

Overall Summary for Aim One

- Age was not significantly associated with reported decision in the Rock scenario at any stage. There was little variance in reported decision, with over 85% of all age groups reporting they would not drop rocks in the Invitation stage, and 100% reporting this in the remaining stages.
- Participants’ initial decision to go with their friend and push the person into the lake (Invitation stage) varied significantly with age when coded into the three age groups set out by doli incapax (eight, 10 and 12, 14 and 16). Fourteen and 16 year olds were the age groups most likely to initially report they would push the person. After being pressured by their friend,
participants’ decision to push the person in the lake varied according to their age, and eight year olds stood out as the age group most susceptible to their friend’s coercion. Once the consequences of pushing the person became clearer (Escalation stage), the majority reported they would not push the person.

Knowing the decisions participants made throughout the rock and lake scenarios, aim two was to investigate the relationship between these decisions and how young people justified them. Building upon this, aim three was to highlight age-based patterns in the justifications provided for decisions. That is, the next two aims relate to the process participants reported using to arrive at their decisional outcomes. See Figure 12, below, for a visual representation of this aim. Considering aim two and three relate to the same decisions, findings are presented together for the sake of brevity. It should be noted that participants typically provided more than one justification for their decision, and as such their responses were categorised into more than one category. Thus, in the tables presented below, the column percentages often exceed 100%. Further, the top reasons participants gave for how they labelled the vignette may differ by age. That is, the top justifications of eight year olds may differ from those of 10 year olds and so on.

To begin with, the average number of justifications each age group provided for each stage of the scenarios is presented in Table 9 below. Although these findings are not utilised to indicate “good” or “poor” decision making process, how verbose each age group was in responding to process questions was of interest.

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78 Numerous chi square analyses are conducted as part of Aim Two and Three. Because this thesis uses a novel design, is exploratory in nature, and aims to build theory, alpha levels remain at p<0.05 throughout.
### Table 9. Average Number of Rationales Young People Provided when Justifying their Reported Decisions

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Stage</th>
<th>8 yr olds Mean (sd)</th>
<th>10 yr olds Mean (sd)</th>
<th>12 yr olds Mean (sd)</th>
<th>14 yr olds Mean (sd)</th>
<th>16 yr olds Mean (sd)</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock</td>
<td>Invitation Stage (n=241)</td>
<td>2.14 (1.37)</td>
<td>2.19 (1.35)</td>
<td>2.60 (1.62)</td>
<td>2.71 (1.30)</td>
<td>2.71 (1.53)</td>
<td>$F(4, 236) = 3.85, p=0.018$</td>
</tr>
<tr>
<td></td>
<td>Coercion Stage (n=225)</td>
<td>2.24 (1.18)</td>
<td>2.61 (1.60)</td>
<td>3.18 (1.57)</td>
<td>2.80 (1.73)</td>
<td>2.93 (1.58)</td>
<td>$F(4, 220) = 5.67, p=0.05$</td>
</tr>
<tr>
<td>Lake</td>
<td>Invitation Stage (n=245)</td>
<td>2.24 (1.18)</td>
<td>2.61 (1.60)</td>
<td>3.18 (1.57)</td>
<td>2.80 (1.73)</td>
<td>2.93 (1.58)</td>
<td>$F(4, 240) = 1.97, p=0.10$</td>
</tr>
<tr>
<td></td>
<td>Coercion Stage (n=222)</td>
<td><strong>2.10 (1.61)</strong></td>
<td><strong>2.82 (1.91)</strong></td>
<td><strong>2.89 (1.52)</strong></td>
<td><strong>3.49 (1.80)</strong></td>
<td><strong>2.93 (1.47)</strong></td>
<td><strong>$F(4, 217) = 3.91, p=0.004$</strong></td>
</tr>
<tr>
<td></td>
<td>Escalation Stage (n=35)</td>
<td>1.78 (1.09)</td>
<td>1.80 (0.84)</td>
<td>3.00 (1.00)</td>
<td>2.27 (1.42)</td>
<td>1.86 (1.07)</td>
<td>$F(4, 30) = 0.81, p=0.53$</td>
</tr>
</tbody>
</table>

In both the Invitation and Coercion stages of the rock scenario, the number of rationales provided did not significantly differ between age groups. That is, all age groups were as verbal as one another. In the lake scenario, all age groups provided a similar number of rationales when justifying their decisions in both the Invitation and Escalation stages. However, in the Coercion stage the average number of rationales was significantly different between age groups (shaded in Table 9 above). Post hoc Tukey HSD analyses showed that eight year olds gave significantly fewer justifications for their reported decision than 14 year olds. Considering eight year olds were at least two times more likely to report being coerced by their friend to push the person into the lake, it is noteworthy they provided less rationales for their decisions.

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79 Because only 16 participants entered the Escalation stage of the Rock scenario, ANOVA was not calculated, as results are unlikely to be useful with such a small sample.
Figure 12. Pictorial Representation of the Variables Investigated in Aim Two and Aim Three

Decision outcome: Reported decision to drop the rock / push the person (Actus reus)

Decision process: Reasons young people gave for their decision to drop the rock / push the person or not

Age: 8, 10, 12, 14, and 16 year olds
As described in the method chapter, participants were asked to justify their reported decisions using open-ended questions. Participants’ responses were then coded using thematic analyses in an effort to understand the main factors young people consider when making risky decisions (see method chapter for a detailed description of this process). To give the reader a representation of how participants justified their reported decisions in the rock scenario, Table 10 displays the categories used to code the qualitative responses and provides actual examples from the data.

Table 10. *Categories Used to Code the Rationales Young People Provided when Justifying their Decisions in the Rock Scenario*

<table>
<thead>
<tr>
<th>Category Name</th>
<th>Exemplars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially receive sanctions for</td>
<td>“Because it’s an office, you could get arrested and fined”</td>
</tr>
<tr>
<td>dropping rock(s) (All references)</td>
<td>“Because you could get in trouble”</td>
</tr>
<tr>
<td></td>
<td>“I wouldn’t want to get in massive trouble”</td>
</tr>
<tr>
<td></td>
<td>“You can get into serious trouble [with] the police, or your mum and dad”</td>
</tr>
<tr>
<td></td>
<td>“You’d get in very big trouble and Dad would probably kill me”</td>
</tr>
<tr>
<td>Potential for harm to people (All</td>
<td>“You could kill someone”</td>
</tr>
<tr>
<td>references)</td>
<td>“You could badly injure someone”</td>
</tr>
<tr>
<td></td>
<td>“If it hit someone’s head it could knock them out”</td>
</tr>
<tr>
<td></td>
<td>“…that might hurt someone”</td>
</tr>
<tr>
<td></td>
<td>“Could cause injury or death”</td>
</tr>
<tr>
<td>Reference to respondent or friend</td>
<td>“I’d try to persuade him out of not doing it...describe to him why I wouldn’t do that and then try to see if he cannot do it”</td>
</tr>
<tr>
<td>peer pressuring one another (All</td>
<td>“I would tell my friend not to do it, I would be discouraging her”</td>
</tr>
<tr>
<td>references)</td>
<td>“I’d try and make her not do it”</td>
</tr>
<tr>
<td></td>
<td>“I would convince my friend not to go”</td>
</tr>
<tr>
<td></td>
<td>“I don’t care if she calls me a wimp”</td>
</tr>
<tr>
<td></td>
<td>“He’s trying to make me do something I don’t want to do. It wouldn’t change my mind”</td>
</tr>
<tr>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>“I personally know it’s wrong” “It’s still not the right thing to do” “It’s still wrong, it doesn’t matter what she says, it’s bad to do that” “I know it’s wrong and my parents have taught me not to do stuff like that”</td>
</tr>
<tr>
<td>Potential damage to inanimate objects as a result of dropping rock(s) (All references)</td>
<td>“I don’t want to cause a massive car accident” “Something could happen to the car...like the wheel could pop” “It could damage someone’s car” “I wouldn’t want to make a dent in someone’s car”</td>
</tr>
<tr>
<td>Mention of danger or hazard resulting from dropping the rock (All references)</td>
<td>“I think that it is dangerous” “Puts other people in danger” “Probably more dangerous than the last time” (response given in the Escalation stage) “It could be a disaster”</td>
</tr>
<tr>
<td>Poor quality of the idea / behaviour / decision</td>
<td>“It’s a stupid idea” “It’s not a very sensible idea” “It’s a silly thing to do” “It’s a really, really bad decision”</td>
</tr>
<tr>
<td>Justification for dropping the rock(s)</td>
<td>“It would be a bit funny [to drop rocks]” “I would be careful where I was dropping it (the rock)”</td>
</tr>
</tbody>
</table>
As mentioned, in the Invitation stage of the rock scenario, participants were asked whether they would go with their friend to drop the rock of not. Over 90% of the sample stated they wouldn’t go with their friend, and there was no significant association between age and whether participants decided to go with their friend or not. However, 16 year olds stood out as the only age group where more than 10% agreed to drop rocks with their friend. Table 11, below, displays the top rationales that participants gave for why they reported they would or would not go with their friend to drop rocks, broken down by their decision. Significant associations are highlighted.

Table 11. The Association Between Young People’s Reported Decision to Drop Rocks and the Top Rationales they Provided when Justifying their Decision at the Initial Invitation Stage

<table>
<thead>
<tr>
<th>Reason</th>
<th>Overall N=241</th>
<th>Drop rocks n=16</th>
<th>Not drop rocks n=225</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potentially receive sanctions for dropping rock(s) (All references)</td>
<td>72 (29.9%)</td>
<td>0</td>
<td>72 (32%)</td>
<td>χ²(1, 72)=7.30, p=0.007</td>
</tr>
<tr>
<td>2 Potential for harm to people (All references)</td>
<td>66 (27.4%)</td>
<td>3 (18.8%)</td>
<td>63 (28%)</td>
<td>χ²(1, 66)=0.64, p=0.423</td>
</tr>
<tr>
<td>3 Reference to respondent or friend peer pressuring one another (All references)</td>
<td>46 (19.1%)</td>
<td>11 (68.8%)</td>
<td>35 (15.6%)</td>
<td>χ²(1, 46)=27.37, p&lt;0.001</td>
</tr>
<tr>
<td>4 Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>41 (17%)</td>
<td>0</td>
<td>41 (18.2%)</td>
<td>χ²(1, 41)=3.51, p=0.06</td>
</tr>
<tr>
<td>5 Poor quality of the idea / behaviour / decision</td>
<td>33 (13.7%)</td>
<td>4 (25%)</td>
<td>29 (12.9%)</td>
<td>χ²(1, 33)=1.85, p=0.17</td>
</tr>
</tbody>
</table>
The top reason participants gave was that they would receive sanctions (get in trouble) if they dropped rocks. Only participants who elected not to go with their friend to drop rocks reported thinking about sanctions. Mentioning peer pressure was also significantly associated with deciding to go and drop rocks or not. Proportionately, more participants that decided to go with their friend cited peer pressure. When the sub-categories of peer pressure were explored, over 80% of these participants made a reference to peer pressuring their friend to not drop rocks. For example, they stated they would go with their friend and “would try to convince her not to do it” or “would try to stop them”.

Analyses were then undertaken to explore age-based trends in how participants justified their reported decision. However, because only 16 participants reported they would go with their friend, there was insufficient cell size to calculate the association between age and how these participants rationalised their decision to go with their friend. Without discussing age trends, almost 70% of participants who reported they would drop rocks were peer pressure (with the majority of participants stating they would peer pressure their friend not to drop rocks), while approximately a third of participants provided a justification for dropping rocks. A quarter of participants mentioned both the poor quality of the idea / behaviour / decision to drop rocks, and the relationship with the friend as a reason to drop or not drop rock(s).

Age-based trends in the rationales participants who reported they would not drop rocks were explored. There were no significant associations between age and rationale provided, indicating that when justifying their decision not to go, participants gave these rationales at a similar rate, regardless of their age. The top rationales provided were receiving sanctions, potential for harm, immoral / wrong, peer pressure, and poor quality of the idea / behaviour / decision.
In the Coercion stage of the rock scenario, participants were asked if they would change their mind about going with their friend to drop rocks after their friend said “Come on, it will be fun to drop rocks off the bridge and see what happens. It’s not a big deal. Don’t be such a wimp.” As mentioned, no participants reported being convinced by this, with all participants saying they would not go with their friend to drop rocks. Thus, the association between reported decision and rationale provided for this decision could not be calculated, due to lack of variance. Given that all participants stated they would not participate in rock dropping, the association between the top justifications participants provided and age was calculated to see if different age groups used a different decisional process to reach the same outcome. Table 12 displays the top justifications participants gave for reporting they would still not drop rocks, broken down by age.
Table 12. The Association Between Age and the Top Rationales Young People Provided when Justifying their Reported Decision Not to Drop Rocks at the Coercion Stage

<table>
<thead>
<tr>
<th>Rationale</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference to respondent or friend peer pressuring one another (All references)</td>
<td>10 (21.7%)</td>
<td>12 (26.1%)</td>
<td>22 (48.9%)</td>
<td>19 (41.3%)</td>
<td>22 (52.4%)</td>
<td>χ² (4, 85) = 14.13, p = 0.01</td>
</tr>
<tr>
<td>Potential for harm to people (All references)</td>
<td>12 (26.1%)</td>
<td>7 (15.2%)</td>
<td>17 (37.8%)</td>
<td>12 (26.1%)</td>
<td>10 (23.8%)</td>
<td>χ² (4, 58) = 6.16, p = 0.19</td>
</tr>
<tr>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>3 (6.5%)</td>
<td>14 (30.4%)</td>
<td>10 (22.2%)</td>
<td>17 (37.8%)</td>
<td>12 (28.6%)</td>
<td>χ² (4, 56) = 13.12, p = 0.01</td>
</tr>
<tr>
<td>Potentially receive sanctions for dropping rock(s) (All references)</td>
<td>14 (30.4%)</td>
<td>9 (19.6%)</td>
<td>13 (28.9%)</td>
<td>6 (13%)</td>
<td>0</td>
<td>χ² (4, 42) = 17.92, p = 0.001</td>
</tr>
<tr>
<td>Potential damage to inanimate objects as a result of dropping rock(s) (All references)</td>
<td>9 (19.6%)</td>
<td>10 (21.7%)</td>
<td>10 (22.2%)</td>
<td>3 (6.5%)</td>
<td>2 (4.8%)</td>
<td>χ² (4, 34) = 10.21, p = 0.04</td>
</tr>
</tbody>
</table>
There was a significant association between age and the most frequently cited rationale, peer pressure. An almost linear age trend was evident where older participants cited peer pressure more frequently than younger participants. Specifically, 12 to 16 year olds were approximately twice as likely to mention resisting peer pressure than younger age groups. Further analyses of peer pressure sub-categories indicated that over 80% of these participants stated they would resist their friend’s attempts to peer pressure them into dropping rocks.

Mentioning that dropping rocks was immoral or wrong as a reason not to drop rocks was also significantly associated with age. Although the age trend was not strictly linear, 10 to 16 year olds were at least three times more likely to cite this factor than eight year olds. In fact, 14 year olds mentioned rock dropping being immoral or wrong most frequently, at almost six times the rate of eight year olds. There was also a significant association between age and mentioning receiving sanctions (getting in trouble), which was cited proportionately more often by eight and 12 year olds compared to the other age groups. Specifically, no 16 year olds made mention of potential sanctions, while more than 10% of all other age groups did.

Finally, age was significantly associated with mentioning damage to inanimate objects as a reason to not drop rocks. Similar to receiving sanctions, eight to 12 year olds were at least four times more likely to mention damage to objects than older age groups. Thus, although all participants made the decision not to drop rocks, different age groups considered different factors when making that decision. Although the age trends are not consistent across the justifications, older participants tended to mention resisting peer pressure and that dropping rocks was immoral or wrong, while younger participants were more preoccupied
with potentially getting in trouble and the possibility of damaging inanimate objects.

The 16 participants that initially agreed to go with their friend to drop rocks were asked whether they would remain with their friend after seeing them drop the first rock off the bridge. All 16 participants opted out at the Escalation stage. Thus, the association between reported decision and rationale provided for this decision could not be calculated. Considering the small sample size, the association between age and rationales for choosing not to continue dropping rocks could not be calculated\(^\text{80}\). Thus, the top responses are simply listed here. Half of the participants stated that someone could be hurt or harmed by rocks being dropped, the next most frequently cited rationale was potentially receiving sanctions, followed by damaging inanimate objects. Finally, a quarter of the participants made a comment about the friend’s lack of insight into the potential dangers associated with dropping rocks after seeing how the car reacted to the first rock being dropped.

Although no comment can be made on the association between age and the rationales participants provided for not continuing to drop rocks, these rationales provide some (tentative) indication of how the participants who agreed to drop rocks initially differed from the rest of the sample (that did not agree to drop rocks). Ideally, the remaining aims would have compared participants that reported they would engage in rock dropping with participants that reported they would not engage in rock dropping. However, the small number of participants that agreed to drop rocks means this comparison could not be calculated throughout the remaining results.

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\(^{80}\) Expected cell count less than five.
Considering that developmental trends were seen in the top rationales participants used to justify their reported decisions, further exploration of age trends was warranted. In an effort to group the above findings and look at broad age trends, the rationales provided to the above questions were coded into seven master categories, as detailed in the method section. Considering the decision to drop rocks or push the person is inherently risky, participants’ responses were initially coded into two risk-based master categories (risk to respondent / friend, and risk of harm to others). Then, in an effort to explore broader factors related to decision making and moral reasoning, participants’ responses were coded into five alternative master categories (using some of the same risk-based categories). Table 13 lists the original categories that made up each of the master categories. The reader is encouraged to see the Method Chapter for more detailed definitions and exemplars of the Master Categories.
Table 13. List of Original Categories Included in the Master Categories

<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>Risk of harm to others</th>
<th>Morality</th>
<th>Practical Consequences</th>
<th>Social Considerations</th>
<th>Prosocial thinking / behaviour</th>
<th>Antisocial thinking / behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to the respondent or friend(^{91})</td>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with dropping rock(s) / pushing the person</td>
<td>Reference to potential victim not deserving rock(s) dropped on them or to be pushed / dropping rocks or pushing the person not justified</td>
<td>Potential damage to inanimate objects as a result of dropping rock(s) / pushing the person</td>
<td>Reference to respondent or friend experiencing positive or negative social repercussions as a result of dropping rock(s) or pushing the person</td>
<td>Contingencies that could escalate risks / reduce safety (risk aware - thinks more risky contingencies are possible)</td>
<td>Contingencies that could reduce risk / increase safety (risk naïve - thinks less risky contingencies are possible)</td>
</tr>
<tr>
<td>Potentially receive sanctions</td>
<td>Potential for harm to people (non-specific)(^{91})</td>
<td>Reference to morality as a common ideal</td>
<td>Dropping rock(s) could damage nature / trees(^{92})</td>
<td>Reference to respondent or friend peer pressuring one another</td>
<td>Person would warn the person</td>
<td>Person would watch their friend but not participate</td>
</tr>
<tr>
<td>Reference to respondent being wrongly implicated / blamed for dropping rock(s) / pushing the person</td>
<td>Reference to putting someone’s life at risk</td>
<td>Reference that takes the victim’s perspective</td>
<td>Mention of danger or hazard resulting from dropping the rock(s) / pushing the person</td>
<td>Reference to relationship with friend as a reason to drop or not drop rock(s) or to push / not push the person</td>
<td>Dropping rocks or pushing the person is not fun or not funny</td>
<td>Considering pushing victim into lake / victim could fall into lake(^{93})</td>
</tr>
<tr>
<td>Potentially being caught / seen by others</td>
<td>Reference to putting a human life at risk</td>
<td>Reference to dropping rock(s) / pushing the person being on the respondent or</td>
<td>Dropping rock(s) or pushing the person would inconvenience people / the person</td>
<td>Reference to teasing / bullying as a result or dropping the person</td>
<td>Reference to existing knowledge of dangers associated with dropping rock(s) or</td>
<td>Reference to the type or amount of trouble the victim got the respondent in(^{93})</td>
</tr>
</tbody>
</table>

\(^{91}\) This is a sub-category of Potential for Harm to People
<table>
<thead>
<tr>
<th>Potential physical altercation</th>
<th>friend’s conscience</th>
<th>pushing or not pushing the person into the lake</th>
<th>pushing the person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people other than the respondent or friend(^2)</td>
<td>Reference to suggested or actual rock dropping/person pushing being immoral or wrong Reference to the emotional effect(s) of dropping rock(s) on victims’ loved ones</td>
<td>Reference to monetary cost of damage as a result of dropping rock(s) / pushing the person</td>
<td>Justification for dropping to rock(s) or pushing the person</td>
</tr>
<tr>
<td>Dropping rocks could hurt an animal(^2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential deadly creature in the lake(^3)</td>
<td>Dropping rocks is nasty / mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victim’s death implied but not explicitly stated(^3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In keeping with the findings of aim three, the age based trends seen in the Master Categories were filtered by reported decision.

Considering few participants agreed to drop rocks at any stage of the rock scenario, the following findings relate to participants that stated they would not drop rocks. Table 14 below displays the associations between age and the first two risk-based master categories in the Invitation stage.

\(^2\) This category was only used to code responses given in the Rock Scenario
\(^3\) This category was only used to code responses given in the Lake Scenario
Table 14. The Association Between Age and Risk-Based Master Categories when Young People Justified their Reported Decision Not to Drop Rocks at the Initial Invitation Stage

<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>8 yr olds n=46</th>
<th>10 yr olds n=46</th>
<th>12 yr olds n=45</th>
<th>14 yr olds n=46</th>
<th>16 yr olds n=42</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk to respondent / friend</td>
<td>18 (39.1%)</td>
<td>25 (54.3%)</td>
<td>25 (55.6%)</td>
<td>18 (39.1%)</td>
<td>8 (19%)</td>
<td>χ²(4, 94)=15.67, p=0.003</td>
</tr>
<tr>
<td>Risk to others</td>
<td>10 (21.7%)</td>
<td>16 (34.8%)</td>
<td>14 (31.1%)</td>
<td>18 (39.1%)</td>
<td>12 (28.6%)</td>
<td>χ²(4, 70)=3.68, p=0.45</td>
</tr>
</tbody>
</table>

As Table 14 above shows, mentioning potential risk to self or friend was significantly associated with age. Although no linear age trend was evident, over 50% of 10 and 12 year cited this factor, while more than 35% of eight and 14 year olds mentioned this factor. Sixteen year olds were the least likely to mention risk to themselves of their friend, indicating their decision to go or not go with their friend was more often based on other factors. Participants’ responses were then coded into the six alternate master categories, and the associations between these categories and age are presented in Table 15 below.
Table 15. The Association Between Age and Additional Master Categories when Young People Justified their Reported Decision Not to Drop Rocks at the Initial Invitation Stage

<table>
<thead>
<tr>
<th>Category</th>
<th>8 yr olds n=46</th>
<th>10 yr olds n=46</th>
<th>12 yr olds n=45</th>
<th>14 yr olds n=46</th>
<th>16 yr olds n=42</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>χ²(4, 61)=1.34, p=0.85</td>
</tr>
<tr>
<td>Practical Consequences</td>
<td>12 (26.1%)</td>
<td>12 (26.1%)</td>
<td>10 (22.2%)</td>
<td>15 (32.6%)</td>
<td>12 (28.6%)</td>
<td></td>
</tr>
<tr>
<td>Social Considerations</td>
<td>11 (23.9%)</td>
<td>8 (17.4%)</td>
<td>9 (20%)</td>
<td>8 (17.4%)</td>
<td>7 (16.7%)</td>
<td>χ²(4, 43)=1.05, p=0.90</td>
</tr>
<tr>
<td>Prosocial thinking / behaviour</td>
<td>9 (19.6%)</td>
<td>8 (17.4%)</td>
<td>10 (22.2%)</td>
<td>13 (28.3%)</td>
<td>19 (45.2%)</td>
<td>χ²(4, 67)=12.77, p=0.01</td>
</tr>
<tr>
<td>Antisocial thinking / behaviour</td>
<td>1 (2.2%)</td>
<td>3 (6.5%)</td>
<td>1 (2.2%)</td>
<td>2 (4.3%)</td>
<td>1 (2.4%)</td>
<td>Not calculated**</td>
</tr>
</tbody>
</table>

As Table 15 shows, mentioning prosocial thinking or behaviour was also significantly associated with age. Again, the age trend was not linear, with almost half the 16 year olds mentioning this factor, followed by 12 year olds. Eight year olds stood out as mentioning prosocial thinking or behaviour at a rate seven times less than the next age group (10 year olds). Thus, although the majority of participants reported deciding not to drop rocks, different age groups utilised different processes to reach this decision. Although no consistent age trends emerged, age did impact on how participants justified their decision, with 16 year olds more likely to cite prosocial thinking or behaviour as well as social considerations, and 10 and 12 year olds were more likely to cite risks to themselves or their friend. These master category findings are

** Expected cell count less than five.
noteworthy, as none of the top five most cited rationales for not dropping rocks in the Invitation stage were associated with age. Thus, the master categories highlighted broader trends not seen at the original category level.

In the Coercion stage of the rock scenario, all participants reported they would not drop rocks, despite their friend attempting to convince them to do so. Table 16 and 17 below display the associations between age and the master categories for the Coercion stage.

Table 16. The Association Between Age and Risk-Based Master Categories when Young People Justified their Reported Decision Not to Drop Rocks at the Coercion Stage

<table>
<thead>
<tr>
<th>Risk to respondent/friend</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 yr olds, n=46</td>
<td>16 (34.8%)</td>
<td>12 (26.1%)</td>
<td>16 (35.6%)</td>
<td>7 (15.2%)</td>
<td>2 (4.8%)</td>
<td>χ² (4, 53)=17.00, p=0.002</td>
</tr>
<tr>
<td>Risk to others</td>
<td>12 (26.1%)</td>
<td>7 (15.2%)</td>
<td>16 (35.6%)</td>
<td>13 (28.3%)</td>
<td>16 (38.1%)</td>
<td>χ² (4, 64)=7.12, p=0.13</td>
</tr>
</tbody>
</table>

Consistent with the Invitation stage, age was significantly associated with mentioning risk to respondent/friend. Eight year olds mentioned this factor at a similar rate in the Invitation stage, while 10 to 16 year olds mention this less than they did in the Invitation stage, indicating that they cited different factors in the Coercion stage. Sixteen year olds remained the age group that cited this factor the least, meaning they thought about different factors when making the decision to not drop rocks.
Table 17. The Association Between Age and Risk-Based Master Categories when Young People Justified their Reported Decision Not to Drop Rocks at the Coercion Stage

<table>
<thead>
<tr>
<th></th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>$\chi^2$ (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=46</td>
<td>n=46</td>
<td>n=45</td>
<td>n=46</td>
<td>n=42</td>
<td></td>
</tr>
<tr>
<td>Morality</td>
<td>5 (10.9%)</td>
<td>17 (37%)</td>
<td>16 (35.6%)</td>
<td>19 (41.3%)</td>
<td>14 (33.3%)</td>
<td>$\chi^2(4, 71)=12.15, p=0.02$</td>
</tr>
<tr>
<td>Practical Consequences</td>
<td>14 (30.4%)</td>
<td>13 (28.3%)</td>
<td>17 (37.8%)</td>
<td>7 (15.2%)</td>
<td>4 (9.5%)</td>
<td>$\chi^2(4, 55)=12.77, p=0.01$</td>
</tr>
<tr>
<td>Social Considerations</td>
<td>11 (23.9%)</td>
<td>18 (39.1%)</td>
<td>28 (62.2%)</td>
<td>22 (47.8%)</td>
<td>25 (59.5%)</td>
<td>$\chi^2(4, 104)=17.81, p=0.001$</td>
</tr>
<tr>
<td>Prosocial thinking / behaviour</td>
<td>12 (26.1%)</td>
<td>15 (32.6%)</td>
<td>18 (40%)</td>
<td>15 (32.6%)</td>
<td>16 (38.1%)</td>
<td>$\chi^2(4, 76)=2.40, p=0.66$</td>
</tr>
<tr>
<td>Antisocial thinking / behaviour</td>
<td>2 (4.3%)</td>
<td>3 (6.5%)</td>
<td>2 (4.4%)</td>
<td>5 (10.9%)</td>
<td>3 (7.1%)</td>
<td>Not calculated$^{**}$</td>
</tr>
</tbody>
</table>

Looking at the additional master categories, mentioning morality was significantly associated with age. While the age trend of mentioning morality was not linear, eight year olds were three times less likely to mention morality compared to all older age groups.

Mentioning practical consequences was also significantly associated with age. Again, the age trend was not linear, with eight, 10 and 12 year olds at least two times more likely to mention practical consequences compared to 14 and 16 year olds. Age was also significantly associated with mentioning social considerations. Again, the age trend was not linear, although eight year olds were almost half as likely to mention social considerations compared to the next closest age group, consistent with the minimum age of criminal responsibility.

$^{**}$ Expected cell count less than five.
As mentioned, the 16 participants that agreed to accompany their friend to drop the rock initially all reported they would not continue after seeing their friend drop the first rock (Escalation stage). Because of this small sample size, associations between age and master categories could not be calculated, and are therefore not presented here. Risk to others was the most frequently cited master category in the Escalation stage, which is consistent with the most cited rationale for this question; potential for harm to people. This may indicate why individuals at the Escalation stage did not drop rocks themselves; they could identify the potential risks to other people after seeing the effect of dropping one rock on the freeway.

Table 18 below collates the significant associations found between age and the rationales provided to justify choice of label throughout the rock scenario. Only the Escalation stage with sufficient sample size is included in the below table, and the age groups that were most likely to mention the category are highlighted in orange. If more than one age group is highlighted, they mentioned that category at a similarly high rate (i.e. within 5% of the age group that cited that factor the most). Age groups highlighted in yellow mentioned that factor at a rate within 10% of the age groups that cited that factor the most. This table does not highlight significant differences (as chi square analyses cannot make such claims), but rather is a visual representation of age groups that cited these factors at similarly high rates. Master Categories are bolded to distinguish them from regular categories. Green highlighting on a category name indicates a positive linear age trend, blue highlighting indicates a negative linear age trend.
<table>
<thead>
<tr>
<th>Stage</th>
<th>Decision</th>
<th>Rationale</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invitation</td>
<td>Not drop rocks</td>
<td>Risk to respondent / friend</td>
<td>16 (34.8%)</td>
<td>12 (26.1%)</td>
<td>16 (35.6%)</td>
<td>7 (15.2%)</td>
<td>2 (4.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prosocial thinking / behaviour</td>
<td>9 (19.6%)</td>
<td>8 (17.4%)</td>
<td>18 (40%)</td>
<td>13 (28.3%)</td>
<td>19 (45.2%)</td>
</tr>
<tr>
<td>Coercion</td>
<td>Not drop rocks</td>
<td>Resist Peer Pressure</td>
<td>10 (21.7%)</td>
<td>12 (26.1%)</td>
<td>22 (48.9%)</td>
<td>19 (41.3%)</td>
<td>22 (52.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Immoral or wrong</td>
<td>3 (6.5%)</td>
<td>14 (30.4%)</td>
<td>10 (22.2%)</td>
<td>17 (37.0%)</td>
<td>12 (28.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receive sanctions</td>
<td>14 (30.4%)</td>
<td>9 (19.6%)</td>
<td>13 (28.9%)</td>
<td>6 (13%)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential damage to inanimate objects</td>
<td>9 (19.6%)</td>
<td>10 (21.7%)</td>
<td>10 (22.2%)</td>
<td>3 (6.5%)</td>
<td>2 (4.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Risk to respondent / friend</td>
<td>16 (34.8%)</td>
<td>12 (26.1%)</td>
<td>16 (35.6%)</td>
<td>7 (15.2%)</td>
<td>2 (4.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Morality</td>
<td>5 (10.9%)</td>
<td>17 (37%)</td>
<td>16 (35.6%)</td>
<td>19 (41.3%)</td>
<td>14 (33.3%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practical consequences</td>
<td>14 (30.4%)</td>
<td>13 (28.3%)</td>
<td>17 (37.8%)</td>
<td>7 (15.2%)</td>
<td>4 (9.5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social considerations</td>
<td>11 (23.9%)</td>
<td>18 (39.1%)</td>
<td>28 (62.2%)</td>
<td>22 (47.8%)</td>
<td>25 (59.5%)</td>
</tr>
</tbody>
</table>

Table 18. Summary of Significant Associations Between Age and Rationales Young People Provided when Justifying Decisions to Drop Rocks
Aim Two Rock Scenario Summary

- The above findings indicated that participants who stated they would go with their friend to drop rocks rationalised this decision by saying they would try to pressure their friend into not dropping rocks. Further, individuals who reported they would not drop rocks were more likely to mention the possibility of getting in trouble (receiving sanctions).
- In both the Coercion and Escalation stages, all participants reported they would not drop rocks. Thus, the association between this decision and the reasons participants gave for making this decision could not be calculated, due to lack of variance (sample size was also problematic in the Escalation stage).

Aim Three Rock Scenario Summary

- Consistent with age and reported decision not being associated in aim one, there were no age-based trends seen in the rationales provided by participants who reported they would not go with their friend to drop rocks initially (Invitation stage). That is, participants of all ages made and justified their decision not to go in similar ways.
- The master categories illuminated broader age trends. Findings showed that 10 and 12 year olds were more likely to think about the risks to themselves and their friend when making the initial decision to drop rocks, while 16 year olds were more likely to mention prosocial thinking or behaviour.
- Findings relating to the Coercion Stage demonstrated that although all participants said they were not convinced by their friend to drop rocks,
different age groups utilised different decisional processes to make this decision. Specifically, older participants mentioned they would resist their friend's peer pressure and that dropping rocks was immoral or wrong, while younger participants were more preoccupied with potentially getting in trouble (receiving sanctions) and damaging inanimate objects such as cars.

• The master categories showed similar age trends, with 8 and 12 year olds most likely to mention risks to themselves or their friend, and 12 year olds most likely to mention practical consequences. Eight year olds also stood out as mentioning morality and social considerations at a much lower rate than the remaining age groups.

• Although all 16 participants in the Escalation stage reported they would not drop a rock themselves, the small sample size meant developmental trends in their justifications for this decision could not be explored.

Now that the processes associated with the decisions in the rock scenario have been explored, the same is explored for the lake scenario. Before looking at the association between reported decisions, age, and justifications, the reader is provided with the relevant categories used to code the qualitative responses in Table 19.
Table 19. *Categories Used to Code the Rationales Young People Provided when Justifying their Decisions in the Lake Scenario*

<table>
<thead>
<tr>
<th>Category Name</th>
<th>Exemplars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially receive sanctions for pushing the person (All references)</td>
<td>“It could get us in big trouble”</td>
</tr>
<tr>
<td></td>
<td>“I would be an accessory to murder”</td>
</tr>
<tr>
<td></td>
<td>“I’d probably get in trouble by my parents and his parents”</td>
</tr>
<tr>
<td></td>
<td>“I might get expelled from school and it would go on my record for getting a job”</td>
</tr>
<tr>
<td>Potential for harm to people (All references)</td>
<td>“I don’t want to cause somebody to die”</td>
</tr>
<tr>
<td></td>
<td>“She could drown” “I might die too”</td>
</tr>
<tr>
<td></td>
<td>“She could get seriously hurt, imagine if she can’t swim, what if she drowns, she could even die”</td>
</tr>
<tr>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>It’s the wrong thing to do”</td>
</tr>
<tr>
<td></td>
<td>“It’s not right to do that”</td>
</tr>
<tr>
<td></td>
<td>“I don’t think it’s right to be a part of something like that”</td>
</tr>
<tr>
<td></td>
<td>“I don’t want to participate in something that’s morally wrong”</td>
</tr>
<tr>
<td></td>
<td>“It doesn’t seem right morally for me to just go pushing people into lakes”</td>
</tr>
<tr>
<td>Reference to respondent or friend peer pressuring one another (All references)</td>
<td>“Even though they’re the kind of friend who blackmails you to stay your friend…I’d still want to be his friend if that meant pushing the other guy”</td>
</tr>
<tr>
<td></td>
<td>“I don’t get manipulated by people that easily”</td>
</tr>
<tr>
<td></td>
<td>“They’re not a nice friend if they’re going to pressure you and don’t respect your decisions”</td>
</tr>
<tr>
<td></td>
<td>“It’s stupid peer pressure”</td>
</tr>
<tr>
<td></td>
<td>“I would go with her...to persuade my friend [not to do it]”</td>
</tr>
<tr>
<td></td>
<td>“My friend wouldn’t go because I might hold him back”</td>
</tr>
<tr>
<td>Contingencies that could escalate risk / reduce safety</td>
<td>“Because you don’t know what’s at the bottom [of the lake]”</td>
</tr>
<tr>
<td></td>
<td>“The could have fallen and hit their foot”</td>
</tr>
<tr>
<td></td>
<td>“You don’t know how deep it is or what’s going to happen or the consequences”</td>
</tr>
<tr>
<td></td>
<td>“You don’t know what’s in the water”</td>
</tr>
<tr>
<td>Reference to relationship with friend as a reason to push or not push the</td>
<td>“I’m sure I want to be friends with the person anyway, even though they’re the sort of friend who blackmails you to stay their friend...yeah I’d want to be his friend...if that meant pushing the other guy”</td>
</tr>
</tbody>
</table>
person

“If friends are going to call you names they aren’t very good friends”
“I don’t think they’re a true friend if they’re trying to make you do something you don’t want to do”

Reference to potential victim not deserving to be pushed into lake

“Even though she got me in trouble last week doesn’t mean that I have to lower myself to her standards by pushing her off”
“I know that I got in trouble bit I probably should have been and there’s no need to injure them”
“He doesn’t deserve to go in the lake”
“Even though she got you in trouble at school there’s no real reason to do that”

Reference to pushing the person being motivated by retaliation or revenge

“She might be the kind of person who likes revenge and is going to get you back for it”
“Just because he got you in trouble doesn’t mean you have to do something back to him”
“I would want to get revenge”

Pushing the person is fun or funny

“Yeah, it’d be funny, but that’s what YouTube’s for”
“It would probably be just funny to do it. Have a bit of a joke”
“It might be funny”

Respondent would watch their friend but not participate

“I’d probably walk over with her but I wouldn’t take part”
“I would go but I wouldn’t push her in...[I’d] convince her not to do it”
“I wouldn’t personally [do it], but I might watch”

Reference to respondent or friend experiencing positive or negative social repercussions as a result of pushing the person (All references)

“She’s spread rumours about you at school or something”
“If we pushed her in she would really hate us both”
“Then you’ll be a loner at school, if you stop being friends”
“You don’t want to become the loser of that group”
“She could spread a rumour, tell everyone else, tell all your friends what you did and maybe exaggerate it, make it sound worse that it actually was”
“The person who fell into the water would probably get really angry and not like me at all”

Overall, more participants agreed to push the person at all stages of the lake scenario than agreed to drop rocks. After participants were told that they saw the person from their school sitting on the railing by the edge of the lake, that person
got them in trouble last week, and that their friend suggested they go and push the person in, they were asked if they would go with their friend. As mentioned, approximately 90% of participants stated they would not go with their friend, and 10% would. Of the participants that said they would go, 65% were 14 and 16 year olds. Table 20, below, shows the top justifications that participants gave for their reported decision at the Invitation stage.
Table 20. The Association Between Young People’s Reported Decision to Push the Person and the Top Rationales they Provided when Justifying their Decision at the Initial Invitation Stage

<table>
<thead>
<tr>
<th>Reason</th>
<th>Overall N=245</th>
<th>Go with friend n=23</th>
<th>Not go with friend n=222</th>
<th>$\chi^2$ (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Potentially receive sanctions for pushing the person (All references)</td>
<td>62 (25.3%)</td>
<td>2 (8.7%)</td>
<td>60 (27%)</td>
<td>$\chi^2(1, 62)=3.71, p=0.05$</td>
</tr>
<tr>
<td>2. Potential for harm to people (All references)</td>
<td>60 (24.5%)</td>
<td>2 (8.7%)</td>
<td>58 (26.1%)</td>
<td>$\chi^2(1, 60)=3.42, p=0.06$</td>
</tr>
<tr>
<td>3. Reference to suggestion of pushing the person / actually pushing the person being immoral or wrong</td>
<td>41 (16.7%)</td>
<td>0</td>
<td>41 (18.5%)</td>
<td>$\chi^2(1, 41)=5.10, p=0.02$</td>
</tr>
<tr>
<td>4. Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified</td>
<td>37 (15.1%)</td>
<td>0</td>
<td>37 (16.7%)</td>
<td>$\chi^2(1, 37)=4.52, p=0.03$</td>
</tr>
<tr>
<td>5. Reference to respondent or friend peer pressuring one another (All references)</td>
<td>35 (14.3%)</td>
<td>4 (17.4%)</td>
<td>31 (14%)</td>
<td>$\chi^2(1, 35)=0.20, p=0.70$</td>
</tr>
</tbody>
</table>
Deciding not to push the person into the lake was significantly associated with mentioning pushing the person was immoral or wrong, and that the person didn’t deserve to be pushed. The other top justifications were mentioned at similar rates by participants, regardless of their decision. To investigate developmental trends in how participants justified their decision to push the person or not, participants were first divided by their decision, then age was associated with participants’ top rationales.

Table 21 shows the association between age and the top rationales provided by participants who reported they would not push the person. Eight, 10 and 12 year olds mentioned the possibility of receiving sanctions (getting in trouble) at double the rate of the other age groups when justifying why they would not push the person. Further, 10 and 14 year olds mentioned peer pressure at almost twice the rate of the other age groups. In fact, over 80% of both these age groups mentioned they would peer pressure their friend into not pushing the person.

Because only 23 participants reported they would go with their friend to push the person, the association between age and the rationales these participants provided to justify their decision could not be calculated. Nevertheless, these participants most often mentioned that pushing the person into the lake was motivated by retaliation or revenge, and that it would be fun or funny. The next most cited rationales for why participants would push the person were mentioning peer pressure (100% of participants reported they would peer pressure their friend into not pushing the person), and that the participants would go with their friend, but just watch rather than actively pushing the person. Considering 14 and 16 year olds made up 65% of the participants that would push the person in the Invitation stage, these rationales are mostly representative of these age groups.
Table 21. The Association Between Age and the Top Rationales Young People Provided when Justifying their Reported Decision Not to Push the Person at the Initial Invitation Stage

<table>
<thead>
<tr>
<th>Potential reason</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially receive sanctions for pushing the person (All references)</td>
<td>15 (30.6%)</td>
<td>18 (40.9%)</td>
<td>18 (38.3%)</td>
<td>6 (15.4%)</td>
<td>3 (7%)</td>
<td>( \chi^2 (4, 60) = 19.09, p=0.001 )</td>
</tr>
<tr>
<td>Potential for harm to people (All references)</td>
<td>11 (22.4%)</td>
<td>14 (31.8%)</td>
<td>15 (31.9%)</td>
<td>8 (20.5%)</td>
<td>10 (23.3%)</td>
<td>( \chi^2 (4, 58) = 2.72, p=0.61 )</td>
</tr>
<tr>
<td>Reference to suggesting or actually pushing the person being immoral or wrong</td>
<td>6 (12.2%)</td>
<td>8 (18.2%)</td>
<td>9 (19.1%)</td>
<td>10 (25.6%)</td>
<td>8 (18.6%)</td>
<td>( \chi^2 (4, 41) = 2.61, p=0.63 )</td>
</tr>
<tr>
<td>Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified</td>
<td>5 (10.2%)</td>
<td>5 (11.4%)</td>
<td>8 (17%)</td>
<td>7 (17.9%)</td>
<td>12 (27.9%)</td>
<td>( \chi^2 (4, 37) = 6.33, p=0.18 )</td>
</tr>
<tr>
<td>Reference to respondent or friend peer pressuring one another (All references)</td>
<td>4 (8.2%)</td>
<td>9 (20.5%)</td>
<td>2 (4.3%)</td>
<td>11 (28.2%)</td>
<td>5 (11.6%)</td>
<td>( \chi^2 (4, 31) = 13.39, p=0.01 )</td>
</tr>
</tbody>
</table>
In the Coercion stage of the Lake scenario, participants were asked if they would change their mind about going with their friend to push the person after their friend said “If you don’t come with me, you’re a loser and I’m not hanging out with you anymore. Trust me, it’ll be funny.” As previously mentioned, there was a significant association between age and whether participants were coerced, with eight year olds the most easily coerced by their friend, reporting they would now go with their friend at three times the rate of the other age groups. Thus, most participants retained their original decision not to participate, with only 12 participants reportedly convinced by their friend to push the person. There were no significant associations between reported decision to push the person and rationale given for this decision. Thus, young people considered similar factors whether they decided to push the person or not. As such, these associations are not displayed below. However, it should be noted that the top rationales participants gave for their decision are the same as those displayed in Table 22 below.

Although there was little variation in the justifications participants gave for their decision, developmental trends were investigated. However, too few participants reported they were convinced to push the person to explore age-trends. Nevertheless, the top rationales provided by participants who were coerced by their friend were investigated for comparison. Social Repercussions were mentioned by 40% of this sample, and an alternative course of action (other than pushing the person) and peer pressure were mentioned by a third of the sample. Of those participants than mentioned peer pressure, half labelled their friend trying to peer pressure them, and half reported they would try to peer pressure their friend into not pushing the person. Table 22 below shows age-based trends in the top rationales participants provided for maintaining their decision not to go with their friend.
Table 22. The Association Between Age and the Top Rationales Young People Provided when Justifying their Reported Decision Not to Push the Person at the Coercion Stage

<table>
<thead>
<tr>
<th>Reason</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference to respondent or friend peer pressuring one another (All references)</td>
<td>9 (21.4%)</td>
<td>15 (34.9%)</td>
<td>16 (34.8%)</td>
<td>20 (54.1%)</td>
<td>20 (47.6%)</td>
<td>χ² (4, 80) = 10.96, p=0.03</td>
</tr>
<tr>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>8 (19%)</td>
<td>13 (30.2%)</td>
<td>15 (32.6%)</td>
<td>15 (40.5%)</td>
<td>12 (28.6%)</td>
<td>χ² (4, 63) = 4.55, p=0.34</td>
</tr>
<tr>
<td>Reference to relationship with friend as a reason to push or not push the person</td>
<td>4 (9.5%)</td>
<td>10 (23.3%)</td>
<td>13 (28.3%)</td>
<td>13 (35.1%)</td>
<td>13 (31%)</td>
<td>χ² (4, 53) = 8.46, p=0.08</td>
</tr>
<tr>
<td>Potential for harm to people (All references)</td>
<td>14 (33.3%)</td>
<td>11 (25.6%)</td>
<td>6 (13%)</td>
<td>7 (18.9%)</td>
<td>9 (7.1%)</td>
<td>χ² (4, 41) = 11.44, p=0.02</td>
</tr>
<tr>
<td>Reference to pushing the person being motivated by retaliation or revenge</td>
<td>2 (4.8%)</td>
<td>1 (2.3%)</td>
<td>9 (19.6%)</td>
<td>11 (29.7%)</td>
<td>10 (23.8%)</td>
<td>χ² (4, 33) = 17.70, p=0.001</td>
</tr>
</tbody>
</table>
There was a significant association between mentioning peer pressure and age, with approximately half of 14 and 16 year olds mentioning this rationale, and between 20 and 35% of eight, 10 and 12 year olds mentioning this justification. Further analyses of peer pressure sub-categories indicated that close to 90% of participants that mentioned peer pressure stated they would resist their friend’s attempts to peer pressure them into pushing the person. Thus, older participants reported resisting peer pressure more frequently than younger participants.

Similarly, age was associated with mentioning retaliation or revenge, with 12, 14 and 16 year olds mentioned their decision not to push the person being motivated by retaliation or revenge at five times the rate of the other age groups. Mentioning potential harm to people was associated with age, with the proportion of participants utilising this justification declining as age increased. Thus, when making the decision not to push the person, different age groups considered different factors. Specifically, resisting peer pressure noting that pushing the person would be motivated by retaliation or revenge informed the decisions of 14 and 16 year olds most often, while the decisions of younger participants (particularly eight year olds) was informed by the potential harm to people that could be caused by pushing the person.

The 35 participants who agreed to go with their friend to push the person into the lake in the Invitation stage were asked if they would keep going to push the person in after seeing the Deep Water sign. As discussed in aim one, while approximately 65% said they would back out at this point, approximately 35% stated they would keep going. There was no significant association between age and decision to keep going or not after seeing the Deep Water sign (Escalation stage), $\chi^2 (4, n=35) = 3.98, p=0.41$. Considering the small sample size, only the association between reported decision and the most cited rationale, potential for
harm to people, could be calculated. This was not significant, indicating individuals mentioned harm to people at similar rates irrespective of decision to push the person. No other associations between decision and justification could be calculated due to expected cell counts of less than five. For the same reason, associations between age and rationales provided at the Escalation stage could not be calculated either. However, the top rationales participants provided were potential for harm to people, potential to receive sanctions, and contingencies that could escalate risk or reduce safety.

Participants’ rationales for their reported decisions were then coded into the master categories to further summarise the above findings or elucidate age-based trends not seen in the top five rationales provided above. Table 23 lists each of the original categories that made up the Master Categories. The reader is referred to the Method Chapter for definitions of the Master Categories and corresponding exemplars. Table 24 and 25 below display the associations between age and the master categories for the Invitation stage of the lake scenario.
Table 23. List of Original Categories Included in the Master Categories

<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>Risk of harm to others</th>
<th>Morality</th>
<th>Practical Consequences</th>
<th>Social Considerations</th>
<th>Prosocial thinking / behaviour</th>
<th>Antisocial thinking / behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to the respondent or friend(^{86})</td>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with dropping rock(s) / pushing the person</td>
<td>Reference to potential victim not deserving rock(s) dropped on them or to be pushed / dropping rocks or pushing the person not justified</td>
<td>Potential damage to inanimate objects as a result of dropping rock(s) / pushing the person</td>
<td>Reference to respondent or friend experiencing negative or positive social repercussions as a result of dropping rock(s) or pushing the person</td>
<td>Contingencies that could escalate risks / reduce safety (risk-aware - thinks more risky contingencies are possible)</td>
<td>Contingencies that could reduce risk / increase safety (risk naïve - thinks less risky contingencies are possible)</td>
</tr>
<tr>
<td>Potentially receive sanctions</td>
<td>Potential for harm to people (non-specific)(^{86})</td>
<td>Reference to morality as a common ideal</td>
<td>Dropping rock(s) could damage nature / trees(^{87})</td>
<td>Reference to respondent or friend peer pressuring one another</td>
<td>Respondent would warn the person</td>
<td>Respondent would watch their friend but not participate</td>
</tr>
<tr>
<td>Reference to respondent being wrongly implicated / blamed for dropping rock(s) / pushing the person</td>
<td>Reference to putting someone's life at risk</td>
<td>Reference that takes the victim's perspective</td>
<td>Mention of danger or hazard resulting from dropping the rock(s) / pushing the person</td>
<td>Reference to relationship with friend as a reason to drop or not drop rock(s) or to push / not push the person</td>
<td>Dropping rocks or pushing the person is not fun or not funny</td>
<td>Considering pushing victim into lake / victim could fall into lake(^{81})</td>
</tr>
<tr>
<td>Potentially being caught / seen by others</td>
<td>Reference to putting a human life at risk</td>
<td>Reference to dropping rock(s) / pushing the person being on the respondent or</td>
<td>Dropping rock(s) or pushing the person would inconvenience people / the person</td>
<td>Reference to teasing / bullying as a result or dropping or not dropping the rock</td>
<td>Reference to existing knowledge of dangers associated with dropping rock(s) or</td>
<td>Reference to the type or amount of trouble the victim got the respondent in(^{88})</td>
</tr>
</tbody>
</table>

\(^{86}\) This is a sub-category of Potential for Harm to People
<table>
<thead>
<tr>
<th>Potential physical altercation</th>
<th>friend’s conscience</th>
<th>pushing or not pushing the person into the lake</th>
<th>pushing the person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people other than the respondent or friend86</td>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>Reference to monetary cost of damage as a result of dropping rock(s) / pushing the person</td>
<td>Reference to providing assistance or alerting others</td>
</tr>
<tr>
<td>Dropping rocks could hurt an animal87</td>
<td>Reference to the emotional effect(s) of dropping rock(s) on victims’ loved ones</td>
<td></td>
<td>Respondent would leave the scene</td>
</tr>
<tr>
<td>Potential deadly creature in the lake88</td>
<td>Dropping rocks is nasty / mean</td>
<td></td>
<td>Respondent stated they don’t want to be involved</td>
</tr>
<tr>
<td>Victim’s death implied but not explicitly stated88</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Master category results were only calculated when the sample size was large enough, which was when participants reported they would not push the person initially (Invitation stage) and that they were not convinced by their friend to push the person (Coercion stage). Consistent with findings from the Invitation stage of the Rock scenario, mentioning risk to self or the friend was significantly associated with age (see Table 24). Although the trend is not linear, eight, 10 and 12 year olds were approximately two times more likely to mention risk to

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86 This category was only used to code responses given in the Rock Scenario
88 This category was only used to code responses given in the Lake Scenario
themselves or their friend compared to 14 and 16 year olds. Thus, eight to 12 year olds were more concerned with the risks to themselves or their friend compared to older participants.

Table 24. The Association Between Age and Risk-Based Master Categories when Young People Justified their Reported Decision Not to Push the Person at the Initial Invitation Stage

<table>
<thead>
<tr>
<th></th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=49</td>
<td>n=44</td>
<td>n=47</td>
<td>n=39</td>
<td>n=43</td>
<td></td>
</tr>
<tr>
<td>Risk to respondent / friend</td>
<td>23 (46.9%)</td>
<td>23 (52.3%)</td>
<td>26 (55.3%)</td>
<td>10 (25.6%)</td>
<td>6 (14%)</td>
<td>χ²(4, 88)=23.91, p&lt;0.001</td>
</tr>
<tr>
<td>Risk to others</td>
<td>8 (16.3%)</td>
<td>14 (31.8%)</td>
<td>15 (31.9%)</td>
<td>10 (25.6%)</td>
<td>14 (32.6%)</td>
<td>χ²(4, 61)= 4.56, p=0.34</td>
</tr>
</tbody>
</table>

Mentioning social considerations was significantly associated with age. Again, the age trend was not linear, with a third of 14 year olds mentioning social considerations, followed by a quarter of 10 year olds. Mentioning prosocial thinking or behaviour was also significantly associated with age, and did linearly increase with age. That is, 16 year olds were more than two times more likely to mention prosocial thinking or behaviour compared to eight year olds.
Table 25. The Association Between Age and Additional Master Categories when Young People Justified their Reported Decision Not to Push the Person at the Initial Invitation Stage

<table>
<thead>
<tr>
<th>Category</th>
<th>8 yr olds n=49</th>
<th>10 yr olds n=44</th>
<th>12 yr olds n=47</th>
<th>14 yr olds n=39</th>
<th>16 yr olds n=43</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morality</td>
<td>18 (36.7%)</td>
<td>16 (36.4%)</td>
<td>22 (46.8%)</td>
<td>19 (48.7%)</td>
<td>23 (53.5%)</td>
<td>( \chi^2(4, 98)=4.16, p=0.39 )</td>
</tr>
<tr>
<td>Practical Consequences</td>
<td>4 (8.2%)</td>
<td>5 (11.4%)</td>
<td>1 (2.1%)</td>
<td>1 (2.6%)</td>
<td>4 (9.3%)</td>
<td>Not calculated (^9)</td>
</tr>
<tr>
<td>Social Considerations</td>
<td>6 (12.2%)</td>
<td>11 (25%)</td>
<td>3 (6.4%)</td>
<td>13 (33.3%)</td>
<td>6 (14%)</td>
<td>( \chi^2(4, 39)=13.78, p=0.008 )</td>
</tr>
<tr>
<td>Prosocial thinking / behaviour</td>
<td>9 (18.4%)</td>
<td>11 (25%)</td>
<td>17 (36.2%)</td>
<td>18 (46.2%)</td>
<td>21 (48.8%)</td>
<td>( \chi^2(4, 76)=13.76, p=0.008 )</td>
</tr>
<tr>
<td>Antisocial thinking / behaviour</td>
<td>7 (14.3%)</td>
<td>3 (6.8%)</td>
<td>2 (4.3%)</td>
<td>5 (12.8%)</td>
<td>8 (18.6%)</td>
<td>( \chi^2(4, 25)=6.04, p=0.20 )</td>
</tr>
</tbody>
</table>

Table 26 and 27 below display the associations between age and the master categories for the participants that reported they were not convinced by their friend to push the person (Coercion stage).

\(^9\) Expected cell count less than five.
Table 26. The Association Between Age and Risk-Based Master Categories when Young People Justified their Reported Decision Not to Push the Person at the Coercion Stage

<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>8 yr olds (n=42)</th>
<th>10 yr olds (n=43)</th>
<th>12 yr olds (n=46)</th>
<th>14 yr olds (n=37)</th>
<th>16 yr olds (n=42)</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk to respondent / friend</td>
<td>17 (40.5%)</td>
<td>17 (39.5%)</td>
<td>14 (30.4%)</td>
<td>11 (29.7%)</td>
<td>5 (11.9%)</td>
<td>χ² (4, 64)=10.49, p=0.03</td>
</tr>
<tr>
<td>Risk to others</td>
<td>11 (26.2%)</td>
<td>11 (25.6%)</td>
<td>7 (15.2%)</td>
<td>8 (21.6%)</td>
<td>5 (11.9%)</td>
<td>χ² (4, 42)=4.28, p=0.37</td>
</tr>
</tbody>
</table>

Consistent with the Invitation stage, age was significantly associated with mentioning risk to respondent / friend. All age groups mentioned this factor at a lesser rate compared to the Invitation stage, and the age trend was altered, with eight to 14 year olds (rather than eight to 12 year olds) standing out as again approximately three times more likely to mention risk to respondent / friend compared to 16 year olds.
Table 27. The Association Between Age and Additional Master Categories when Young People Justified their Reported Decision Not to Push the Person at the Coercion Stage

<table>
<thead>
<tr>
<th>Category</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morality</td>
<td>11 (26.2%)</td>
<td>19 (44.2%)</td>
<td>19 (41.3%)</td>
<td>20 (54.1%)</td>
<td>14 (33.3%)</td>
<td>( \chi^2(4, 83)=7.52, p=0.11 )</td>
</tr>
<tr>
<td>Practical Consequences</td>
<td>1 (2.4%)</td>
<td>0</td>
<td>4 (8.7%)</td>
<td>1 (2.7%)</td>
<td>1 (2.4%)</td>
<td>Not calculated**</td>
</tr>
<tr>
<td>Social Considerations</td>
<td>16 (38.1%)</td>
<td>26 (60.5%)</td>
<td>29 (63%)</td>
<td>32 (86.5%)</td>
<td>30 (71.4%)</td>
<td>( \chi^2(4, 133)=21.40, p&lt;0.001 )</td>
</tr>
<tr>
<td>Prosocial thinking / behaviour</td>
<td>10 (23.8%)</td>
<td>10 (23.3%)</td>
<td>14 (30.4%)</td>
<td>14 (37.8%)</td>
<td>14 (33.3%)</td>
<td>( \chi^2(4, 62)=3.01, p=0.56 )</td>
</tr>
<tr>
<td>Antisocial thinking / behaviour</td>
<td>6 (9.5%)</td>
<td>13 (30.2%)</td>
<td>16 (34.8%)</td>
<td>16 (43.2%)</td>
<td>15 (35.7%)</td>
<td>( \chi^2(4, 64)=12.50, p=0.01 )</td>
</tr>
</tbody>
</table>

** Expected cell count less than five.
Mentioning social considerations was significantly associated with age, with a linear age trend evident between the ages of eight and 14. Sixteen year olds did not follow this linear age trend, mentioning social considerations at a lower rate than 14 year olds. Age was also significantly associated with mentioning antisocial thinking or behaviour. Again, mentioning this factor increased linearly between the ages of eight and 14, with 16 year olds mentioning this at a rate lower than 14 year olds.

As only 35 participants reported they would go with their friend to push the person in, the association between age and master categories could not be calculated for participants who reported they would push the person or would not push the person in the Escalation stage. Consistent with the rock scenario, the most frequently cited master category at the Escalation stage was risk to others. Table 28 below collates the significant associations found between age and the rationales participants provided to justify their choice of label throughout the rock scenario. Only the Escalation stage with sufficient sample size is included in the below table, and the age groups that were most likely to mention the category are highlighted in orange. If more than one age group is highlighted, they mentioned that category at a similarly high rate, within 5% of the age group that cited that factor the most. Age groups highlighted in yellow mentioned that factor at a rate within 10% of the age groups that cited that factor the most. This table does not highlight significant differences (as chi square analyses cannot make such claims), but rather is a visual representation of age groups that cited these factors at similarly high rates. Master Categories are bolded to distinguish them from regular categories. While green highlighting on a category name indicates a positive linear age trend, blue highlighting indicates a negative linear age trend.
Table 28. Summary of Significant Associations Between Age and Rationales Young People Provided when Justifying Decisions to Push the Person

<table>
<thead>
<tr>
<th>Stage</th>
<th>Decision</th>
<th>Rationale</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Invitation</strong></td>
<td>Not push the person</td>
<td>Respondent peer pressuring friend</td>
<td>15 (30.6%)</td>
<td>18 (40.9%)</td>
<td>18 (38.3%)</td>
<td>6 (15.4%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not to push the person</td>
<td>4 (8.2%)</td>
<td>9 (20.5%)</td>
<td>2 (4.3%)</td>
<td>11 (28.2%)</td>
<td>5 (11.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Risk to Respondent/Friend</strong></td>
<td>23 (46.9%)</td>
<td>23 (52.3%)</td>
<td>26 (55.3%)</td>
<td>10 (25.6%)</td>
<td>6 (14%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Social Considerations</strong></td>
<td>6 (12.2%)</td>
<td>11 (25%)</td>
<td>3 (6.4%)</td>
<td>13 (33.3%)</td>
<td>6 (14%)</td>
</tr>
<tr>
<td></td>
<td><strong>Pросocial thinking / behaviour</strong></td>
<td></td>
<td>9 (18.4%)</td>
<td>11 (25%)</td>
<td>17 (36.2%)</td>
<td>18 (46.2%)</td>
<td>21 (48.8%)</td>
</tr>
<tr>
<td><strong>Coercion</strong></td>
<td>Not push the person</td>
<td>Resist peer pressure</td>
<td>9 (21.4%)</td>
<td>15 (34.9%)</td>
<td>16 (34.8%)</td>
<td>20 (54.1%)</td>
<td>20 (47.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Harm to people</td>
<td>14 (33.3%)</td>
<td>11 (25.6%)</td>
<td>6 (13%)</td>
<td>7 (18.9%)</td>
<td>9 (7.1%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motivated by retaliation or revenge</td>
<td>2 (4.8%)</td>
<td>1 (2.3%)</td>
<td>9 (19.6%)</td>
<td>11 (29.7%)</td>
<td>10 (23.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Risk to Respondent / Friend</strong></td>
<td>17 (40.5%)</td>
<td>17 (39.5%)</td>
<td>14 (30.4%)</td>
<td>11 (29.7%)</td>
<td>5 (11.9%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Social Considerations</strong></td>
<td>16 (38.1%)</td>
<td>26 (60.5%)</td>
<td>29 (63%)</td>
<td>32 (86.5%)</td>
<td>30 (71.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Antisocial Thinking / Behaviour</strong></td>
<td>6 (9.5%)</td>
<td>13 (30.2%)</td>
<td>16 (34.8%)</td>
<td>16 (43.2%)</td>
<td>15 (35.7%)</td>
</tr>
</tbody>
</table>
Aim Two Lake Scenario Summary

- There were few significant associations between participants’ decisions to go with their friend and push the person into the lake (or not) and the process they reported using when making this decision. Thus, participants often reported making different decisions for similar reasons.

- Participants who reported they would not go with their friend initially (Invitation stage) reported that their decision was informed by thinking pushing the person was immoral or wrong and that the person didn’t deserve to be pushed.

- In the Coercion stage, none of the top five justifications were associated with reported decision to push the person or not. So, participants justified their decision in similar ways whether they reported they would push the person or not.

- In the Escalation stage, participants who agreed to push the person mentioned harm to people at similar rates to the rest. Small sample size meant the association between decision and other justifications could not be explored.

Aim Three Lake Scenario Summary

- Age was a better indicator of rationale choice than decision. Across both the Invitation and Coercion stages, younger participants (eight to 12 year olds) were more concrete and self-referential in their rationales, mentioning sanctions, harm to people and the risks to themselves and their friend at higher rates than the other age groups.
• Older participants (14 and 16 year olds) mentioned rationales that required consideration of socially-focussed rationales including peer pressuring their friend to not push the person, resisting peer pressure from their friend, and mentioning that pushing the person would be motivated by retaliation or revenge. Master category findings showed that 14 and 16 year olds more often reported thinking about social considerations as well as prosocial and antisocial aspects of pushing the person. Sixteen year olds did have a tendency to deviate from linear age trends, often mentioning rationales less frequently than fourteen year olds.

**Overall Summary Aim Two and Three**

• The process young people reported using to make decisions varied. At times, age trends were seen in young people’s reported decision making process.

• The above discussed significant associations between age and justifications for reported decision highlighted no consistent age trends. However, there was a trend towards eight to 12 year olds being more concrete and self-referential when justifying their decisions, while 14 and 16 year olds were more abstract and demonstrated a wider consideration of factors in their responses, particularly related to the social aspects of dropping rocks or pushing the person (e.g. peer pressure).

Now that young people’s decisions as well as their process for making those decisions has been explored, the next analysis links participants’ decision to drop rocks or push the person with how they labelled these scenarios *not wrong at all,*
naughty, wrong, or seriously wrong). As mentioned, the law makes no age-based predictions about propensity to engage in illegal behaviour, and only predicts age-based variation in competency (and uses the terms seriously wrong and naughty as a proxy). Thus, aim four was to investigate the relationship between the label participants choose (not wrong at all, naughty, wrong, or seriously wrong) and the decisions they report they would make (go or not go with their friend). The intention of this aim was to investigate the proportion of individuals who would participate in the actus reus (by dropping rocks or pushing the person) that have the requisite mens rea (indicated under doli incapax as labelling the behaviour seriously wrong). Only at the Invitation and Escalation stages were participants asked to both label the scenario and report whether they think they would participate or not\(^1\). Thus, the association between chosen label and reported decision was only calculated for these stages\(^2\). Figure 13, below, shows the variables included in aim four.

As a reminder, in the Invitation stage of the rock scenario, participants were told they were riding their bike with their friend when they come to a bridge over a freeway. Their friend suggests they ride to the middle to drop rocks off. Participants were then asked to label the Invitation stage (not wrong all at, naughty, wrong, or seriously wrong) and after being asked why they chose that label\(^3\), participants were asked whether they would go with their friend or not.

---

\(^1\) At the Coercion stage, participants are only asked to report a decision, and at the Culmination stage participants are only asked to label the scenario from the provided labels. Thus, the association between label choice and reported decision cannot be calculated in these stages.

\(^2\) Numerous chi square analyses are conducted as a part of Aim Four. Because this thesis uses a novel design, is exploratory in nature, and aims to build theory, alpha levels remain at \(p<0.05\) throughout.

\(^3\) See aim seven and eight for findings related to the process young people reported using when choosing a label for the behaviour (including seriously wrong and naughty).
Figure 13. Pictorial Representation of the Variables Investigated in Aim Four

**Decision outcome:**
Reported decision to drop the rock / push the person (Actus reus)

**Decision process:**
Reasons young people gave for their decision to drop the rock / push the person

**Age:**
8, 10, 12, 14, and 16 year olds

**Moral outcome:**
Choice of legal labels from the following list: not wrong at all, naughty, wrong, seriously wrong
As shown in Table 29 below, 10 participants both agreed to drop rocks and labelled doing so as *seriously wrong*, which equates to 4.2% of the sample that would meet the *doli incapax* criteria. In terms of the association between reported decision and label choice, the association between label choice and reported decision was significant when all age groups were included. Almost 90% of the participants who stated they wouldn’t go with their friend labelled the scenario *seriously wrong*, while approximately 60% of those who said they would go with their friend chose this label. Participants who reported they would go with their friend were more likely to label the scenario as *wrong* compared to those who reported they would not go. However, when broken down by age group, the association between decision and label choice was only significantly associated for 10 and 16 year olds.

The single 10 year old that reported they would drop rocks used the label *wrong*, while 90% of 10 year olds that reported they would not drop rocks used the label *seriously wrong*. The trend was a little different for 16 year olds. Of the seven 16 year olds that reported they would drop rocks, just over a quarter used the label *wrong* and just over a half used the label *seriously wrong*. By comparison, 100% of the 16 year olds that stated they would not go drop rocks used the label *seriously wrong*. The association between reported decision and choice of label was not significant for the other age groups, as high rates of eight, 12 and 14 year old participants used *seriously wrong* to describe the Invitation stage of the rock scenario, regardless of their reported decision to drop rocks or not.
Table 29. The Association Between Decision to Drop Rocks and Legal Label used to Describe the Initial Invitation Stage of the Rock Scenario

<table>
<thead>
<tr>
<th>Age</th>
<th>Reported Decision</th>
<th>Rate of Label Choice</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All age groups</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naughty n=9</td>
<td>Would go with friend 1 (6.3%)</td>
<td>Wrong n=21 5 (31.3%)</td>
<td>Seriously wrong n=211 10 (62.5%)</td>
</tr>
<tr>
<td></td>
<td>Would not go with friend 8 (3.6%)</td>
<td>16 (7.1%)</td>
<td>201 (89.3%)</td>
</tr>
<tr>
<td>Naughty n=5</td>
<td>Would go with friend 0</td>
<td>Wrong n=5 1 (33.3%)</td>
<td>Seriously Wrong n=39 2 (66.7%)</td>
</tr>
<tr>
<td></td>
<td>Would not go with friend 5 (10.9%)</td>
<td>4 (8.7%)</td>
<td>37 (80.4%)</td>
</tr>
<tr>
<td><strong>8 year olds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naughty n=1</td>
<td>Would go with friend 0</td>
<td>Wrong n=5 1 (100%)</td>
<td>Seriously Wrong n=41 0</td>
</tr>
<tr>
<td></td>
<td>Would not go with friend 1 (2.2%)</td>
<td>4 (8.7%)</td>
<td>41 (89.1%)</td>
</tr>
<tr>
<td><strong>10 year olds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naughty n=1</td>
<td>Would go with friend 0</td>
<td>Wrong n=5 1 (33.3%)</td>
<td>Seriously Wrong n=42 2 (66.7%)</td>
</tr>
<tr>
<td></td>
<td>Would not go with friend 1 (2.2%)</td>
<td>4 (8.9%)</td>
<td>40 (88.9%)</td>
</tr>
<tr>
<td><strong>12 year olds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naughty n=1</td>
<td>Would go with friend 0</td>
<td>Wrong n=4 0</td>
<td>Seriously Wrong n=43 2 (100%)</td>
</tr>
<tr>
<td></td>
<td>Would not go with friend 1 (2.2%)</td>
<td>4 (8.7%)</td>
<td>41 (89.1%)</td>
</tr>
<tr>
<td><strong>14 year olds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naughty n=1</td>
<td>Would go with friend 1 (14.3%)</td>
<td>Wrong n=2 2 (28.6%)</td>
<td>Seriously Wrong n=46 4 (57.1%)</td>
</tr>
<tr>
<td></td>
<td>Would not go with friend 0</td>
<td>0</td>
<td>42 (100%)</td>
</tr>
</tbody>
</table>
Overall, the association between decision to drop rocks and the way participants labelled dropping rocks varied according to age. In legal terms, whether the individual who would drop rocks identified doing so as *seriously wrong* depended on age. However, the above findings do not align well with the current age-based assumptions under *doli incapax*. Specifically, all 10 year olds that would drop rocks would be held accountable for their actions, the law would assume more variance in label choice among 10 year olds. Also, 16 year olds are the age group most likely to drop rocks and most likely to choose a label other than *seriously wrong*. The law would assume that if 16 year olds were to engage in criminal behaviour, they would more consistently choose the label *seriously wrong* compared to other age groups. While it is acknowledged that these findings may be an artefact of the sample given few participants agreed to drop rocks (from any age group), the association between reported decision and label choice was age-dependent. Because all participants declined to drop rocks in the Coercion and Escalation stages of the rock scenario, the association between reported decision and label choice could not be calculated, due to lack of variance.

**Aim Four Rock Scenario Summary**

- Label choice (*not wrong at all, naughty, wrong, seriously wrong*) and reported decision (to drop rocks with the friend or not) were significantly associated in the Invitation stage. Participants that reported they would go with their friend chose *wrong* most often, while participants who reported they would not go with their friend chose *seriously wrong* most often.
- When broken down by age, label and decision were only significantly associated for 10 and 16 year olds.
The association between participants’ reported decision to push the person into the lake and how they labelled this behaviour was then investigated. As a reminder, in the Invitation stage of the lake scenario, participants were told they were with a friend in a park that has a lake in the middle of it. They see a person from their school sitting on the railing at the edge of the lake, and that person got them in trouble last week. Their friend suggests they push the person into the lake. Participants were then asked to label the scenario using the provided labels, and after being prompted for why they chose that label, participants were asked whether they would accompany their friend to push the person. Table 30 below displays participants’ decision to go with their friend and push the person, broken down by their label choice.
<table>
<thead>
<tr>
<th>Age</th>
<th>Reported Decision</th>
<th>Rate of Label Choice</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All age groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would go</td>
<td>4 (17.4%)</td>
<td>9 (39.1%)</td>
<td>7 (30.4%)</td>
</tr>
<tr>
<td>Would not go</td>
<td>0</td>
<td>19 (8.6%)</td>
<td>87 (39.2%)</td>
</tr>
<tr>
<td>8 year olds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would go</td>
<td></td>
<td>0</td>
<td>1 (50%)</td>
</tr>
<tr>
<td>Would not go</td>
<td>9 (18.4%)</td>
<td>13 (26.5%)</td>
<td>27 (55.1%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would go</td>
<td>1 (25%)</td>
<td>1 (25%)</td>
<td>1 (25%)</td>
</tr>
<tr>
<td>Would not go</td>
<td>4 (9.1%)</td>
<td>12 (27.3%)</td>
<td>28 (63.6%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would go</td>
<td>1 (50%)</td>
<td>1 (50%)</td>
<td>0</td>
</tr>
<tr>
<td>Would not go</td>
<td>0</td>
<td>18 (38.3%)</td>
<td>29 (61.7%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would go</td>
<td>3 (33.3%)</td>
<td>4 (44.4%)</td>
<td>2 (22.2%)</td>
</tr>
<tr>
<td>Would not go</td>
<td>0</td>
<td>4 (10.3%)</td>
<td>18 (46.2%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would go</td>
<td>3 (50%)</td>
<td>2 (33.3%)</td>
<td>1 (16.7%)</td>
</tr>
<tr>
<td>Would not go</td>
<td>2 (4.7%)</td>
<td>26 (60.5%)</td>
<td>15 (34.9%)</td>
</tr>
</tbody>
</table>
As shown above, only three participants (1.2% of the overall sample) agreed to push the person and labelled doing so as seriously wrong. When all age groups were included, the association between label choice and reported decision was significant. Over half of the participants that reported they wouldn’t go with their friend labelled the scenario seriously wrong, and almost 40% chose wrong. By contrast, those who stated they would go with their friend chose seriously wrong four times less often, and naughty four times more often than those who stated they wouldn’t go with their friend. Thus, reporting the decision to push the person was associated with choosing a label other than seriously wrong. To see whether this finding was consistent across age groups, the association between decision and label choice was then run for each age group individually. Results showed that reported decision was significantly associated with label choice for all age groups except for eight year olds. Eight year olds labelled pushing the person in a similar way regardless of whether they reported they would participate or not.

Although reported decision and label choice were significantly associated for participants aged 10 to 16, label choices were distributed differently across these age groups. The four ten year old participants that reported they would push the person into the lake were equally as likely to choose any of the labels (not wrong at all, naughty, wrong, or seriously wrong), while almost two thirds of 10 year olds who would not push the person chose seriously wrong. Although only two 12 year olds reported they would push the person into the lake, neither of them chose the label seriously wrong, while close to two thirds of 12 year olds that reported they would not push the person chose seriously wrong. Although directional trends cannot be inferred from the above results, the decision not to participate was associated with seeing pushing the person as more wrong for 10
and 12 year olds. Conversely, the reported decision to participate was associated with seeing pushing the person as less wrong.

Of the nine 14 year olds that reported they would push the person, none chose the label seriously wrong. However, the 14 year old that reported they would not push the person labelled doing so wrong and seriously wrong at similar rates (approximately 45%). Half of the six 16 year olds that reported they would push the person chose the label naughtyc while the 16 year olds that reported they would not push the person were most likely to choose the label wrong. Again, a directional relationship cannot be inferred from the above findings, however, 14 and 16 year olds that reported they would push the person most often chose the label naughtys while those who reported they would not push the person most often chose the label wrong. This trend is consistent with that seen in the 10 and 12 year olds, except that overall, 14 and 16 year olds saw pushing the person a less wrong compared to younger participants, likely owing to there being objectively less risk associated with these age groups pushing the person. Again, it is acknowledged that these findings may be an artefact of the sample, as few participants agreed to push the person.

In the Escalation stage of the lake scenario, 35 participants had reported they would accompany their friend to push the person. After seeing the Deep Water sign, they were asked to label pushing the person into the lake and indicate whether they would continue with their friend to push the person. One participant labelled the scenario as not wrong at all. Not surprisingly, this participant reported they would continue with their friend to push the person into the lake after seeing the Deep Water sign. With this participant using that label, expected cell count was less than five, and the association between decision and label could not be
calculated. In order to calculate the association between label choice and decision, that participant was recoded as choosing the label *naughty*, the findings of which are presented in Table 31 below.

Table 31. *The Association Between Decision to Push the Person and Legal Label used to Describe the Escalation Stage of the Lake Scenario*

<table>
<thead>
<tr>
<th>Reported decision</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go with friend</td>
<td>6 (50%)</td>
<td>2 (16.7%)</td>
<td>4 (33.3%)</td>
<td>12 (100%)</td>
</tr>
<tr>
<td>Not go with friend</td>
<td>0</td>
<td>10 (43.5%)</td>
<td>13 (56.5%)</td>
<td>23 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (17.1%)</td>
<td>12 (34.3%)</td>
<td>17 (48.6%)</td>
<td>35 (100%)</td>
</tr>
</tbody>
</table>

The association between label choice and reported decision in the Escalation stage of the lake scenario was significant $\chi^2 (2, n=35) = 14.03, p=0.001$. Of the participants who stated they would not continue with their friend to push the person, just over half (n=13) chose the label *seriously wrong* and just under half (n=10) chose *wrong*. By comparison, half (n=6) of the participants who stated they would continue with their friend chose the label *naughty*, while a third (n=4) chose the label *seriously wrong* and approximately a sixth (n=2) chose *wrong*. These findings uphold the trend seen whereby individuals that would participate see their behaviour as less wrong than the individuals who would not participate. Unfortunately, expected cell count was less than five when the association between decision and label choice was calculated by age group. Thus, the impact of age on this association could not be explored.
Aim Four Lake Scenario Summary

- At the whole sample level, the label (not wrong at all, naughty, wrong, seriously wrong) participants chose was associated with the decisions participants reported making in both the Invitation and Escalation stages. In both stages, participants that reported they would go with their friend were more likely to label pushing the person as less wrong than participants that reported they would not go with their friend.

- When broken down by age in the Invitation stage, this significant association was maintained only for 10 to 16 year olds. Trends indicated that if participants agreed to push the person, they typically saw doing so as less wrong than participants who said they wouldn’t push the person. However, 14 and 16 year olds saw pushing the person as less wrong overall than younger age groups.

Overall Summary for Aim Four

- At the sample level, participants’ reported decision to drop rocks or push the person was associated with how wrong they thought these actions were in both scenarios. Participants who stated they would go with their friend to drop rocks or push the person saw doing so as less wrong than the participants who reported they would not go with their friend. Thus, the participants that would be more likely to commit the actus reus would be less likely to possess the requisite mens rea as measured by doli incapax.

- When the association between decision to drop rocks or push the person and label choice was calculated per age group, they were not consistently
associated. This indicates whether young people who commit the *actus reus* are less likely to possess the requisite *mens rea* is age-specific.

Now that participants’ reported decision to engage in risky behaviour (dropping rocks, pushing the person into the lake) has been explored, the next step in the legal process is investigated; assessing competence. The fifth aim was to investigate developmental trends across legally relevant age groups in psychometric measures of (a) decision making; (b) anti-social decision making; (c) moral judgement; and (d) moral reasoning in violent situations. Figure 14 provides a visual depiction of this aim. Considering that most of the psychometric measures employed in this study have not been used with eight and ten-year old participants, reliability analyses were first undertaken on each measure, and are presented in conjunction with descriptive statistics. The benchmark for internal consistency, as measured by Cronbach’s alpha, is often set at 0.8 (Henson, 2001; Nimon, 2012). Given that these scales have had minimal use with the age range utilised in this study, and that the purpose of using these psychometric measures is to explore developmental trends in order to create avenues for future research, Cronbach’s alpha of $\alpha=0.5$ or above was used to indicate acceptable reliability.
Figure 14. Pictorial Representation of the Variables Investigated in Aim Five

**Decision outcome:**
Reported decision to drop the rock / push the person or not (*Actus reus*)

**Decision process:**
Reasons young people gave for their decision to drop the rock / push the person

**Age:**
8, 10, 12, 14, and 16 year olds

**Psychometric measures:**
of decision making, anti-social decision making, moral judgement, moral reasoning in violent situations

**Moral outcome:**
Choice of legal labels from the following list: *not wrong at all, naughty, wrong, seriously wrong*
**Decision Making**

Part (a) of the above aim relates to the Adolescent Decision Making Questionnaire (ADMQ; Mann et al., 1988). As set out in the previous chapter, there are five subscales to the ADMQ: *Decision self esteem*, which measures confidence in making decisions, *Vigilance*, which investigates the use of varied decision making strategies, *Complacency*, which is the tendency to be apathetic and have minimal involvement in decisions, *Panic*, which is the tendency to make a hasty and impulsive choice, and *Cop-out*, the tendency to avoid decisions. Participants rate each item from zero to three, meaning that scale scores on the ADMQ can range from 0 to 18.

**Table 32. Descriptive Statistics and Reliability for the Decision Self Esteem Subscale of the Adolescent Decision Making Questionnaire**

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>5</td>
<td>18</td>
<td>12.2</td>
<td>2.43</td>
<td>0.60</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>5</td>
<td>16</td>
<td>10.96</td>
<td>2.31</td>
<td>0.32&lt;sup&gt;94&lt;/sup&gt;</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>6</td>
<td>17</td>
<td>12.15</td>
<td>2.38</td>
<td>0.66</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>7</td>
<td>16</td>
<td>11.98</td>
<td>2.24</td>
<td>0.55&lt;sup&gt;95&lt;/sup&gt;</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>7</td>
<td>18</td>
<td>12.88</td>
<td>2.37</td>
<td>0.59&lt;sup&gt;96&lt;/sup&gt;</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>6</td>
<td>17</td>
<td>13.10</td>
<td>2.44</td>
<td>0.69&lt;sup&gt;97&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

As Table 32 shows, the Self Esteem subscale appears to have moderate reliability overall. When broken down by age group, the decision self-esteem scale is least reliable with eight year olds. This may be to the scale or items not being age-appropriate for eight year olds. However, eight year olds are retained for the

<sup>94</sup> Alpha would be raised to 0.38 if item 1 removed, and to 0.37 if item 3 removed  
<sup>95</sup> Alpha would be raised to 0.57 if item 2 removed  
<sup>96</sup> Alpha would be raised to 0.67 if item 4 removed  
<sup>97</sup> Alpha would be raised to 0.70 if item 6 removed
analysis for comparison. In terms of mean scores, eight year olds have the lowest
decision self-esteem compared to other age groups, which is to be expected
developmentally. However, their low score may be explained in part by the items
not being age appropriate. ANOVA revealed significant age differences; $F(4, 240) =
6.61$, $p<0.001$, and post-hoc Tukey HSD tests revealed that eight year olds had
significantly lower decision self-esteem compared to both 14 and 16 year olds. No
other significant age differences were present, and the means did not follow a
linear age trend.

Table 33. Descriptive Statistics and Reliability for the Vigilance Subscale of the
Adolescent Decision Making Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>4</td>
<td>17</td>
<td>11.44</td>
<td>2.59</td>
<td>0.53</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>4</td>
<td>15</td>
<td>10.86</td>
<td>2.45</td>
<td>0.22$^{98}$</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>4</td>
<td>17</td>
<td>11.67</td>
<td>2.89</td>
<td>0.65$^{99}$</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>6</td>
<td>17</td>
<td>11.26</td>
<td>2.51</td>
<td>0.63</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>6</td>
<td>16</td>
<td>11.90</td>
<td>2.13</td>
<td>0.37$^{100}$</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>5</td>
<td>17</td>
<td>11.55</td>
<td>2.88</td>
<td>0.65$^{101}$</td>
</tr>
</tbody>
</table>

Consistent with Decision Self Esteem, the Vigilance subscale (see Table 33)
also had moderate reliability overall, and the scale was least reliable with eight
year olds. However, the Vigilance subscale was also unreliable for 14 year olds,
perhaps indicating a developmental drop in the use of decision making vigilance,
meaning that 14 year olds may make decisions quickly without considering all the

$^{98}$ Alpha would be raised to 0.23 if item 16 removed, and to 0.28 if item 27 removed
$^{99}$ Alpha would be raised to 0.66 if item 16 removed
$^{100}$ Alpha would be raised to 0.42 if item 13 removed, and to 0.44 if item 23 removed
$^{101}$ Alpha would be raised to 0.72 if item 23 removed
possible options. ANOVA revealed no significant age differences; $F(4, 240) = 1.18$, $p=0.32$, and no linear age trend was evident either.

Table 34. Descriptive Statistics and Reliability for the Complacency Subscale of the Adolescent Decision Making Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>0</td>
<td>15</td>
<td>4.95</td>
<td>2.94</td>
<td>0.67</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>0</td>
<td>15</td>
<td>6.47</td>
<td>3.52</td>
<td>0.65&lt;sup&gt;102&lt;/sup&gt;</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>0</td>
<td>10</td>
<td>4.46</td>
<td>2.22</td>
<td>0.44&lt;sup&gt;103&lt;/sup&gt;</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>0</td>
<td>12</td>
<td>4.59</td>
<td>2.75</td>
<td>0.73</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1</td>
<td>15</td>
<td>5.17</td>
<td>2.99</td>
<td>0.73&lt;sup&gt;104&lt;/sup&gt;</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>0</td>
<td>11</td>
<td>4.00</td>
<td>2.45</td>
<td>0.58&lt;sup&gt;105&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Table 34 shows that the Complacency subscale had slightly higher overall reliability compared to the Self Esteem and Vigilance subscales. While the complacency subscale is sufficiently reliable with most age groups including eight year olds, this subscale is less reliable for 10 year olds. ANOVA revealed that there are significant age differences in the complacency subscale; $F(4, 240) = 5.69$, $p<0.001$, and post hoc Turkey HSD tests showed 8 year olds were significantly more apathetic in their decision making than 10, 12 and 16 year olds. The other age groups were not significantly different from one another, and by comparison, eight and 14 year olds were not significantly different from each other; they are equally complacent in their decision making. Further, the means indicate the age trend was not linear.

<sup>102</sup> Alpha would be raised to 0.70 if item 30 removed
<sup>103</sup> Alpha would be raised to 0.45 if item 26 removed
<sup>104</sup> Alpha would be raised to 0.74 if item 26 removed
<sup>105</sup> Alpha would be raised to 0.63 if item 26 removed
Table 35. Descriptive Statistics and Reliability for the Panic Subscale of the Adolescent Decision Making Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>0</td>
<td>16</td>
<td>6.56</td>
<td>2.80</td>
<td>0.64</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>0</td>
<td>16</td>
<td>6.47</td>
<td>3.34</td>
<td>0.65</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>1</td>
<td>13</td>
<td>6.90</td>
<td>2.75</td>
<td>0.66</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>1</td>
<td>12</td>
<td>6.90</td>
<td>2.30</td>
<td>0.54</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>2</td>
<td>12</td>
<td>6.40</td>
<td>2.46</td>
<td>0.54</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>0</td>
<td>13</td>
<td>6.12</td>
<td>3.04</td>
<td>0.74</td>
</tr>
</tbody>
</table>

Table 35 shows that the Panic subscale is moderately reliable both overall and for the age groups separately. While 12 and 14 year olds are lower compared to the other age groups in terms of their reliability, they are still above the α = 0.5 cut off. ANOVA revealed no significant age differences on the subscale of Panic; F(4, 240) = 0.70, p=0.59. Further, the age trend was not linear.

Table 36. Descriptive Statistics and Reliability for the Cop-Out Subscale of the Adolescent Decision Making Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>0</td>
<td>12</td>
<td>4.33</td>
<td>2.59</td>
<td>0.68</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>0</td>
<td>12</td>
<td>5.39</td>
<td>3.19</td>
<td>0.65</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>0</td>
<td>8</td>
<td>3.60</td>
<td>2.26</td>
<td>0.67</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>0</td>
<td>9</td>
<td>3.84</td>
<td>2.41</td>
<td>0.75</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>0</td>
<td>10</td>
<td>4.02</td>
<td>2.12</td>
<td>0.58</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1</td>
<td>11</td>
<td>4.73</td>
<td>2.46</td>
<td>0.65</td>
</tr>
</tbody>
</table>

106 Alpha would be raised to 0.70 if item 25 removed
107 Alpha would be raised to 0.55 if item 15 removed, and to 0.56 if item 18 removed
108 Alpha would be raised to 0.63 if item 15 removed
109 Alpha would be raised to 0.66 if item 28 removed
110 Alpha would be raised to 0.62 if item 21 removed
111 Alpha would be raised to 0.69 if item 21 removed
As seen in Table 36, the Cop-out subscale is moderately reliable overall and by age group. Eight year olds have the highest level of cop out, meaning they avoid decisions more than the other age groups. ANOVA revealed significant age differences; \( F(4, 240) = 4.21, p=0.003 \), and post hoc Turkey HSD test showed eight year olds utilised significantly more cop-out in their decision making compared to 10, 12 and 14 year olds. Again, the age trend was not linear.

**Decision Making Summary**

The Adolescent Decision Making Questionnaire (ADMQ, Mann et al., 1988) has moderate overall reliability with the current sample in all subscales. When reliability was investigated by age group across the subscales, the following were deemed unreliable (below the \( \alpha=0.5 \) cut off):

- The Self Esteem subscale is unreliable for eight year old participants;
- The Vigilance subscale is unreliable for eight and 14 year old participants;
- The Complacency subscale is unreliable for 10 year old participants.

In terms of age-based trends in the decision making of participants, the following was found:

- Eight year olds had significantly less confidence in their decisions (Decision Self Esteem) compared to 14 and 16 year olds, however this scale was an unreliable measure of eight year olds’ confidence in their decision making;
- Eight year olds had significantly higher apathy (Complacency) when making decisions compared to 10, 12 and 16 year olds;
- Eight year olds were significantly more likely to avoid decision making (Cop-Out) compared to 10 and 14 year olds.
Together these findings indicate that the ADMQ is unsuitable for use with eight year olds, highlighting a gap in the available developmental decision making measures. Figure 15, below serves as a summary for the tables presented above, and displays the mean scores for each decision making styles across age group. The mean scores that are underlined are significantly different from the other age groups.
Figure 15. Average Adolescent Decision Making Questionnaire Scores per Age Group
Antisocial Decision Making

To address part (b) of the first aim, The Youth Decision Making Questionnaire (YDMQ; Cauffman & Steinberg, 2000) was used to investigate developmental trends across legally relevant age groups in psychometric measures of anti-social decision making. As mentioned in the previous chapter, the YDMQ was originally made up of five vignettes. However, due to the range of ages in this study, only two of the original vignettes were deemed applicable to the full age range, and one of those vignettes (stealing clothes) was adapted to be about stealing chocolate instead. Considering these modifications to the YDMQ, as well as the use of the measure here with a younger sample than in previous research, reliability was investigated for the three conditions (no consequences, definite consequences, unknown consequences) across the two vignettes. The same $\alpha=0.5$ guide was utilised as a way of noting poor reliability.

Table 37. Descriptive Statistics and Reliability for the No Consequences Condition of the Youth Decision Making Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1</td>
<td>4</td>
<td>3.13</td>
<td>0.68</td>
<td>0.34</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>2</td>
<td>4</td>
<td>3.44</td>
<td>0.63</td>
<td>0.71</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>2</td>
<td>4</td>
<td>3.27</td>
<td>0.60</td>
<td>0.37</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>1.5</td>
<td>4</td>
<td>3.29</td>
<td>0.65</td>
<td>0.45</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1</td>
<td>4</td>
<td>2.90</td>
<td>0.67</td>
<td>0.52</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1.5</td>
<td>4</td>
<td>2.73</td>
<td>0.59</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Table 37 shows that the overall No Consequences score did not meet minimum reliability requirements, and when broken down by age, the items were least reliable with 16 year old participants. Only eight and 14 year olds met
minimum reliability standards. Considering the lack of reliability of the No Consequences scale, an ANOVA was not conducted and the scale was eliminated from further analyses.

Table 38. Descriptive Statistics and Reliability for the Consequences Condition of the Youth Decision Making Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>2.5</td>
<td>4</td>
<td>3.74</td>
<td>0.37</td>
<td>0.04</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>3</td>
<td>4</td>
<td>3.86</td>
<td>0.28</td>
<td>0.28</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>3</td>
<td>4</td>
<td>3.90</td>
<td>0.23</td>
<td>-0.08</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>2.5</td>
<td>4</td>
<td>3.77</td>
<td>0.38</td>
<td>0.17</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>3</td>
<td>4</td>
<td>3.67</td>
<td>0.36</td>
<td>-0.04</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>2.5</td>
<td>4</td>
<td>3.49</td>
<td>0.42</td>
<td>-0.09</td>
</tr>
</tbody>
</table>

The overall reliability of the Consequences score is poor (see Table 38), and the consequences score does not meet minimum reliability requirements when broken down by age group either. As with the No Consequences score, no ANOVA was conducted with the Consequences condition, and it was precluded from further analyses.

Table 39. Descriptive Statistics and Reliability for the Unknown Consequences Condition of the Youth Decision Making Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1.5</td>
<td>4</td>
<td>3.30</td>
<td>0.56</td>
<td>0.27</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>1.5</td>
<td>4</td>
<td>3.34</td>
<td>0.64</td>
<td>0.66</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>2</td>
<td>4</td>
<td>3.45</td>
<td>0.53</td>
<td>0.65</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>2.5</td>
<td>4</td>
<td>3.49</td>
<td>0.47</td>
<td>0.08</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1.5</td>
<td>4</td>
<td>3.17</td>
<td>0.56</td>
<td>0.25</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>2</td>
<td>4</td>
<td>3.03</td>
<td>0.45</td>
<td>-0.03</td>
</tr>
</tbody>
</table>
Similarly, the Unknown Consequences score has poor reliability in the overall sample (see Table 39). When reliability was calculated by age group, the Unknown Consequences score met minimum reliability requirements with both eight and 10 year olds, but had poor reliability with 12, 14 and 16 year olds. Considering that the three consequences conditions have been shown to be unreliable, the YDMQ was not used in further analyses. It is noted that the modification of the YDMQ to suit the study’s age range likely contributed to low reliability.

**Antisocial Decision Making Summary**

- The Youth Decision Making Questionnaire does not have sufficient reliability across age groups to be included in future analyses;
- Adapting the Youth Decision Making Questionnaire by reducing the number of vignettes and modifying the vignette content to better suit the age range of this sample likely reduced the measure’s reliability.

**Moral Judgement**

The developmental trends across legally relevant age groups in moral judgement were investigated using the Socio-Moral Reflection Measure – Short Form (SRM-SF; Gibbs et al., 1992). The SRM-SF is made up of 11 items that, when averaged, make up the Sociomoral Reflection Maturity Score (SRMS), which indicates the level of sociomoral maturity in the participants’ responses overall. Table 40 (below) lays out how the four stages of Sociomoral Reflection (as detailed in the previous chapter) relate to the SRMS.
Table 40. Sociomoral Reflection Maturity Scores (SRMS) associated with each Sociomoral Stage

<table>
<thead>
<tr>
<th>Global Stage</th>
<th>SRMS range</th>
<th>Transition Stage</th>
<th>SRMS range</th>
<th>Transition Stage</th>
<th>SRMS range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>1.00-1.25</td>
<td>Transition 1(2)</td>
<td>1.26-1.49</td>
<td>Transition 2(1)</td>
<td>1.50-1.74</td>
</tr>
<tr>
<td>Stage 2</td>
<td>1.75-2.25</td>
<td>Transition 2(3)</td>
<td>2.26-2.49</td>
<td>Transition 3(2)</td>
<td>2.50-2.74</td>
</tr>
<tr>
<td>Stage 3</td>
<td>2.75-3.25</td>
<td>Transition 3(4)</td>
<td>3.26-3.49</td>
<td>Transition 4(3)</td>
<td>3.50-3.74</td>
</tr>
<tr>
<td>Stage 4</td>
<td>3.75-4.00</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

As with the other psychometric measures used in the current study, reliability analyses was conducted with the SRM-SF to check its utility with the age range of the current study.

Table 41. Descriptive Statistics and Reliability for the Sociomoral Reflection Maturity Score (Sociomoral Reflection Measure – Short Form)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1.44</td>
<td>3.77</td>
<td>2.54</td>
<td>0.49</td>
<td>0.83</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>1.44</td>
<td>2.70</td>
<td>2.04</td>
<td>0.33</td>
<td>0.60&lt;sup&gt;112&lt;/sup&gt;</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>1.75</td>
<td>3.18</td>
<td>2.35</td>
<td>0.34</td>
<td>0.72</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>1.64</td>
<td>3.14</td>
<td>2.53</td>
<td>0.33</td>
<td>0.69&lt;sup&gt;113&lt;/sup&gt;</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>2.14</td>
<td>3.5</td>
<td>2.76</td>
<td>0.31</td>
<td>0.71&lt;sup&gt;114&lt;/sup&gt;</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1.67</td>
<td>3.77</td>
<td>3.07</td>
<td>0.37</td>
<td>0.76&lt;sup&gt;115&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

As Table 41 shows, the SRM-SF has excellent reliability overall and exceeds the α=0.5 requirement when broken down by age group. ANOVA revealed that at

<sup>112</sup> Alpha would be raised to 0.63 if item 10 were removed  
<sup>113</sup> Alpha would be raised to 0.70 if item eight were removed  
<sup>114</sup> Alpha would be raised to 0.73 if item 10 were removed  
<sup>115</sup> Alpha would be raised to 0.77 if item six were removed
the overall SRMS level, there were significant differences between ages; \( F(4, 238) = 67.63, p<0.001 \). Post hoc Turkey HSD tests indicate that while 10 and 12 year olds did not significantly differ in terms of their Sociomoral maturity, all other age groups were significantly different to one another, meaning that as age increased so did moral judgement. With reference to Table 40, the means in Table 41 show that 14 and 16 year olds would be considered as having “mature” sociomoral judgement, reasoning primarily at Stage 3 or above. It should also be noted that 12 year olds were in transition Stage 3(2), meaning that while they mostly reasoned at Stage 3, there was still some Stage 2 (immature) moral reasoning present. Further, 10 year olds were in transition Stage 2(3), meaning they were beginning to show some mature sociomoral reasoning, but continued to rely mostly on Stage 2 (immature) reasoning. Thus, only participants aged 14 and 16 had on average transitioned to using mature moral reasoning.

**Moral Judgement Summary**

Before discussing age-based trends, it should be noted that:

- The SRM-SF is a reliable measure of sociomoral reasoning across the sample as a whole and each age group separately.

There are some clear age-based trends that present themselves when examining the Sociomoral Reflection Measure:

- The Sociomoral Reflection Maturity Score (SRMS) increased linearly with age;
- Sociomoral reasoning ability significantly improved between all age groups except for 10 and 12 year olds;
• Both 14 and 16 year olds reached Stage 3 in their SRMS, and would therefore be deemed as having “mature” sociomoral reasoning abilities.

Figure 16, below, shows the mean SRMS for each age group graphically, with another line depicting the threshold for mature moral reasoning. Means that are underlined are significantly different from one another.
Figure 16. Average Sociomoral Reflection Maturity Score (SRMS) per Age Group
Moral Reasoning in Violent Situations

The Moral Interpretation of Interpersonal Violence scale (MIIV; Krcmar & Valkenburg, 1999) was used to investigate developmental trends in moral reasoning in violent situations across legally relevant age groups, thereby addressing part (d) of the first aim. As mentioned in the previous chapter, the MIIV is made up of four vignettes: two that depict the use of justified violence, and two that depict the use of unjustified violence. Participants rated how wrong the use of violence was in the four vignettes on a seven-point scale ranging from very, very wrong to very, very right. Descriptive Statistics for the four vignettes broken down by age group are presented below. It should be noted that a score of 1 is equivalent to “very, very wrong”, 2 denotes “very wrong”, 3 denotes “a little wrong”, 4 denotes “in the middle”, 5 represents “a little right”, 6 represents “very right”, and 7 represents “very, very right”. In the first vignette, participants were told about Frank, who works in a supermarket, has big muscles and exercises every day. Participants were then told that Frank’s friend Jeff asks Frank why he is lying to him. Frank gets angry and kicks his friend several times. Young people’s ratings of this vignette are displayed in Table 42 below.
Table 42. *Descriptive Statistics for Vignette 1 (Unjustified Violence) of the Moral Interpretation of Interpersonal Violence Scale*

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1</td>
<td>5</td>
<td>1.90</td>
<td>0.79</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>1</td>
<td>4</td>
<td>1.88</td>
<td>0.84</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>1</td>
<td>5</td>
<td>1.92</td>
<td>0.92</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>1</td>
<td>4</td>
<td>1.92</td>
<td>0.70</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1</td>
<td>4</td>
<td>2.02</td>
<td>0.64</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1</td>
<td>5</td>
<td>1.78</td>
<td>0.85</td>
</tr>
</tbody>
</table>

As Table 42 shows, participants of all age groups thought the actions of the protagonist in vignette 1 were on average between very, very wrong and very wrong. ANOVA revealed no significant effect of age $F(4, 240)=0.59$, p=0.67, meaning all age groups saw this vignette as similarly wrong. In the second vignette, participants are told that Paul is walking home with his sister. A man grabs her hand bag, pushes her down, and runs away. Paul chases the man to get the hand bag back. When he gets hols of the thief, he kicks him several times and grabs the handbag. Participants’ ratings of this scenario are presented in Table 43 below.

Table 43. *Descriptive Statistics for Vignette 2 (Justified Violence) of the Moral Interpretation of Interpersonal Violence Scale*

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1</td>
<td>7</td>
<td>4.25</td>
<td>1.36</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>1</td>
<td>7</td>
<td>4.31</td>
<td>1.49</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>1</td>
<td>7</td>
<td>4.29</td>
<td>1.38</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>2</td>
<td>7</td>
<td>4.0</td>
<td>1.07</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1</td>
<td>7</td>
<td>4.44</td>
<td>1.43</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1</td>
<td>7</td>
<td>4.20</td>
<td>1.41</td>
</tr>
</tbody>
</table>
The descriptive statistics presented in Table 43 show that participants on average described the protagonist's use of justified violence in vignette two as “in the middle” or “a little right”. ANOVA revealed no significant effect of age $F(4, 240)=0.76$, $p=0.55$, meaning all age groups rated this vignette in a similar way. In the third vignette, participants are told about Barry, who is described as a tall guy. One day, his neighbour accidently parked his car too close to Barry's car. Barry became extremely angry and started to punch his neighbour. His neighbour had to go to the hospital. Participant’s ratings of this scenario are presented in Table 44, below.

Table 44. Descriptive Statistics for Vignette 3 (Unjustified Violence) of the Moral Interpretation of Interpersonal Violence Scale

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1</td>
<td>4</td>
<td>1.33</td>
<td>0.52</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>1</td>
<td>4</td>
<td>1.45</td>
<td>0.70</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>1</td>
<td>2</td>
<td>1.35</td>
<td>0.48</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>1</td>
<td>2</td>
<td>1.31</td>
<td>0.47</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1</td>
<td>2</td>
<td>1.27</td>
<td>0.45</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1</td>
<td>2</td>
<td>1.27</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Similar to participants' response to the first vignette, the use of unjustified violence in vignette 3 was characterised on average as very, very wrong or very wrong by all age groups (see Table 44). ANOVA revealed no significant effect of age $F(4, 240)=1.08$, $p=0.37$, meaning all age groups rated this vignette similarly. The fourth and final vignette described Phillip, whose grandmother lives in a neighbourhood that is frightened by some young men from a gang. The gang members regularly demand money from the older people. The older people
usually refuse, but they are frightened. One day, Philip is staying over at his grandmother’s when the doorbell rings. One of the gang members comes in and demands a drink and some money. Philip jumps from behind the curtain and starts to punch the gang member. The gang member had to go to the hospital.

Participants’ ratings of this vignette are presented in Table 45 below.

Table 45. Descriptive Statistics for Vignette 4 (Justified Violence) of the Moral Interpretation of Interpersonal Violence Scale

<table>
<thead>
<tr>
<th>Group</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1</td>
<td>7</td>
<td>3.82</td>
<td>1.32</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>1</td>
<td>7</td>
<td>3.57</td>
<td>1.43</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>1</td>
<td>7</td>
<td>3.77</td>
<td>1.24</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>1</td>
<td>6</td>
<td>3.63</td>
<td>1.11</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1</td>
<td>7</td>
<td>4.21</td>
<td>1.34</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1</td>
<td>7</td>
<td>3.94</td>
<td>1.38</td>
</tr>
</tbody>
</table>

Participants tended to characterise the use of justified violence in vignette 4 as slightly more wrong than in vignette 2, with the means in Table 45 showing vignette 4 was labelled as between “a little wrong” and “in the middle” by all age groups. ANOVA revealed no significant effect of age $F(4, 240)=1.91, p=0.11$, meaning all age groups rated this vignette in a similar way.

Participants’ ratings of how wrong the actions of the person in the vignette can then be averaged across the two justified vignettes to create the Index of Justified Violence, and the ratings across the unjustified vignettes can be averaged to create the Index of Unjustified Violence (Krcmar & Valkenburg, 1999). In order to reliably calculate the indices, the relevant vignettes need to be sufficiently correlated with one another. The two unjustified vignettes were significantly
correlated \( r = 0.28, p < 0.001 \), as were the two Justified vignettes \( r = 0.52, p < 0.001 \).

While statistically significant, the weak to average correlation coefficients were of concern. Before proceeding, in order to further explore the modest correlation coefficients prior to calculating the indices, correlations were calculated between the justified and unjustified vignettes respectively for each age group (see Table 15).

Table 46. Correlations between Justified and Unjustified Violence Vignettes per Age Group (Moral Interpretation of Interpersonal Violence Scale)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Correlation between justified violence vignettes</th>
<th>Correlation between unjustified violence vignettes</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>( r = 0.47, p = 0.001 )</td>
<td>( r = 0.19, p = 0.17 )</td>
</tr>
<tr>
<td>10 year olds</td>
<td>( r = 0.57, p &lt; 0.001 )</td>
<td>( r = 0.40, p = 0.004 )</td>
</tr>
<tr>
<td>12 year olds</td>
<td>( r = 0.43, p = 0.002 )</td>
<td>( r = 0.52, p &lt; 0.001 )</td>
</tr>
<tr>
<td>14 year olds</td>
<td>( r = 0.55, p &lt; 0.001 )</td>
<td>( r = 0.13, p = 0.38 )</td>
</tr>
<tr>
<td>16 year olds</td>
<td>( r = 0.56, p &lt; 0.001 )</td>
<td>( r = 0.22, p = 0.14 )</td>
</tr>
</tbody>
</table>

As Table 46 shows, the correlation between the two vignettes depicting justified violence are significantly correlated for all age groups. Although the correlation coefficient is moderate for the justified vignettes across all age groups, the consistent nature of these correlations indicates that calculating the Index of Justified Violence was warranted. The correlations for the unjustified violence vignettes were less consistent when broken down by age. For eight, 14 and 16 year olds, the correlation between the unjustified vignettes was not statistically significant. Further, the correlation coefficients for these same age groups were small. The Index of Unjustified Violence would therefore only be valid for 10 and 12 year olds, considering they were the only two age groups for whom the
vignettes were significantly correlated. Because of the lack of significant
correlation for the other three age groups, the Index of Unjustified Violence was
not calculated or utilised in any further analyses. The Index for Justified Violence
calculated for the sample overall and by age group is presented in Table 47 below.

Table 47. Descriptive Statistics and Reliability for the Index of Justified Violence

(Moral Interpretation of Interpersonal Violence Scale)

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>1</td>
<td>7</td>
<td>4.03</td>
<td>1.17</td>
<td>0.69</td>
</tr>
<tr>
<td>8 yr olds</td>
<td>1</td>
<td>6.5</td>
<td>3.94</td>
<td>1.25</td>
<td>0.64</td>
</tr>
<tr>
<td>10 yr olds</td>
<td>1.5</td>
<td>7</td>
<td>4.03</td>
<td>1.16</td>
<td>0.73</td>
</tr>
<tr>
<td>12 yr olds</td>
<td>1.5</td>
<td>6</td>
<td>3.81</td>
<td>0.92</td>
<td>0.60</td>
</tr>
<tr>
<td>14 yr olds</td>
<td>1</td>
<td>7</td>
<td>4.32</td>
<td>1.22</td>
<td>0.71</td>
</tr>
<tr>
<td>16 yr olds</td>
<td>1</td>
<td>6.5</td>
<td>4.07</td>
<td>1.23</td>
<td>0.72</td>
</tr>
</tbody>
</table>

As Table 47 shows, the rating of how right or wrong the use of justified
violence was in the vignettes was relatively similar overall and across age groups.
The aggregate and age-specific means indicate that participants on average said
the use of justified violence was “in the middle” or “a little wrong”. ANOVA
revealed no significant age differences $F(4, 240)=1.30, p=0.27$, meaning all age
groups saw the use of justified violence in a similar way.

Despite there being no age-based trends in how participants morally
reasoned about the four vignettes, the qualitative component of the MIIV scale was
investigated for age-based trends. The MIIV scale asks participants what they
meant when they labelled the actions of the perpetrator from very, very wrong to
very, very right. As additional questions for the current study, participants were
also asked if they had anything else to say and why they thought those actions
were very, very wrong to very, very right. The responses to these prompts were combined and coded into the six categories that Krcmar and Valkenburg (1999) utilised, which were adapted from Eisenberg-Berg (1979). The six categories are: 

*Authority/Punishment*, which captures references to an authority figure (such as the police) or references to being punished; *Stereotypical Reasoning*, which captures references to whether the behaviour is characterised as “good” or “bad”; *Hedonism*, which captures responded regarding selfish gains; *Needs Oriented*, which mentions the physical safety or injury of individuals; *Perspective Taking*, which includes references to the person’s social role, that the person is a human being, or the positive or negative motives of the person; and *Human Rights*, which captures references to the rights of the characters portrayed in the story.

Krcmar and Valkenburg (1999) rank these categories from least to most morally mature in the order they are presented above. Thus, it would be expected that as age increased so would references in the latter categories. Below are the chi square results for the association between participants’ judgements and age for the two vignettes depicting justified violence. During the coding process, it became apparent that utilising the theory-driven categories that Krcmar and Valkenburg adapted from Eisenberg-Berg (1979) did not fully capture the qualitative responses provided by participants. This highlighted the importance of using data-driven thematic analysis to capture the factors young people consider important when making moral judgements. Table 48 and 49 below show the associations between age and the categories of justifications participants gave for their moral judgements.

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116 Because this thesis uses a novel design, is exploratory in nature, and aims to build theory, alpha levels remain at p<0.05 throughout Aim Five.
Table 48. The Association between Age and Moral Justifications in Vignette 2 (Justified Violence)

<table>
<thead>
<tr>
<th>Category</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (4, n=245)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Authority/punishment</td>
<td>9 (17.6%)</td>
<td>16 (33.3%)</td>
<td>17 (34.3%)</td>
<td>17 (35.4%)</td>
<td>16 (32.7%)</td>
<td>χ² = 5.21, p=0.27</td>
</tr>
<tr>
<td>2 Stereotypical reasoning</td>
<td>24 (47.1%)</td>
<td>25 (52.1%)</td>
<td>30 (61.2%)</td>
<td>23 (27.9%)</td>
<td>23 (46.9%)</td>
<td>χ² = 2.90, p=0.58</td>
</tr>
<tr>
<td>3 Hedonism</td>
<td>16 (31.4%)</td>
<td>21 (43.8%)</td>
<td>13 (26.5%)</td>
<td>20 (41.7%)</td>
<td>22 (44.9%)</td>
<td>χ² = 5.63, p=0.23</td>
</tr>
<tr>
<td>4 Needs-oriented</td>
<td>12 (23.5%)</td>
<td>13 (27.1%)</td>
<td>12 (24.5%)</td>
<td>21 (43.8%)</td>
<td>20 (40.8%)</td>
<td>χ² = 8.30, p=0.08</td>
</tr>
<tr>
<td>5 Perspective taking</td>
<td>10 (19.6%)</td>
<td>9 (18.8%)</td>
<td>11 (22.4%)</td>
<td>18 (37.5%)</td>
<td>26 (53.1%)</td>
<td>χ² = 20.46, p&lt;0.001</td>
</tr>
<tr>
<td>6 Human rights</td>
<td>0</td>
<td>1 (2.1%)</td>
<td>2 (4.1%)</td>
<td>5 (10.4%)</td>
<td>6 (12.2%)</td>
<td>χ² = 10.36, p=0.04</td>
</tr>
</tbody>
</table>

As Table 48 shows, there was no significant association between age and making a reference that falls into the first four categories. However, references to Perspective Taking and Human Rights were significantly associated with age, with the number of responses in these categories increasing with age.
Table 49. The Association between Age and Moral Justifications in Vignette 4 (Justified Violence)

<table>
<thead>
<tr>
<th>Category</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (4, n=245)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority/punishment</td>
<td>6 (11.8%)</td>
<td>8 (16.7%)</td>
<td>16 (32.7%)</td>
<td>18 (37.5%)</td>
<td>14 (28.6%)</td>
<td>χ² = 12.29, p=0.02</td>
</tr>
<tr>
<td>Stereotypical reasoning</td>
<td>19 (37.3%)</td>
<td>20 (41.7%)</td>
<td>22 (44.9%)</td>
<td>16 (33.3%)</td>
<td>8 (16.3%)</td>
<td>χ² = 10.77, p=0.03</td>
</tr>
<tr>
<td>Hedonism</td>
<td>0</td>
<td>6 (12.5%)</td>
<td>4 (8.2%)</td>
<td>8 (16.7%)</td>
<td>5 (10.2%)</td>
<td>χ² = 8.95, p=0.06</td>
</tr>
<tr>
<td>Needs-oriented</td>
<td>29 (56.9%)</td>
<td>31 (64.6%)</td>
<td>33 (67.3%)</td>
<td>28 (58.3%)</td>
<td>29 (59.2%)</td>
<td>χ² = 1.67, p=0.80</td>
</tr>
<tr>
<td>Perspective taking</td>
<td>14 (27.5%)</td>
<td>17 (35.4%)</td>
<td>25 (51%)</td>
<td>27 (56.3%)</td>
<td>37 (75.5%)</td>
<td>χ² = 27.89, p&lt;0.001</td>
</tr>
<tr>
<td>Human rights</td>
<td>1 (2%)</td>
<td>2 (4.2%)</td>
<td>2 (4.1%)</td>
<td>2 (4.2%)</td>
<td>6 (12.2%)</td>
<td>χ² = 6.23, p=0.18</td>
</tr>
</tbody>
</table>

Table 49 shows, there is a significant associations between age and making a reference to Authority/Punishment, Stereotypical reasoning, Hedonism, and Perspective Taking. When frequencies were examined, 14 year olds most often mentioned Authority/punishment and Hedonism, while 12 year olds most often utilised Stereotypical reasoning, and 16 year olds relied upon Perspective taking most when making moral judgements. Compared to the linear trend seen in vignette 2 responses (see Table 17), the response pattern seen in vignette 4 is not strictly linear.
Moral Reasoning in Violent Situations Summary

- The unjustified vignettes of the MIIV scale were not reliable enough to calculate the Index of Unjustified Violence;
- While the justified vignettes of the MIIV scale were reliable enough to calculate the Index of Justified Violence, there were not significant age differences;
- Qualitative investigations showed significant associations between age and references to Perspective Taking and Human Rights in the first vignette depicting justified violence;
- There were also significant associations between age and references to Authority/Punishment, Stereotypical reasoning, Hedonism, and Perspective Taking in the second vignette depicting justified violence.

Overall Aim Five Summary

Overall, the psychometric data explored in aim five indicate that as age increases, typically so does performance on tests of decision making and moral reasoning. This supports the legal assumption that competence improves with age. Unfortunately, none of the measures used provide age-based norms with which to compare these findings. Nonetheless, the following age-trends were found:

Adolescent Decision Making Questionnaire

- Eight year olds performed significantly worse on tests of decision making compared to some of the other age groups. Specifically, they had less confidence in their decisions (Decision Self-Esteem) than 14 and 16 year olds, higher decision making apathy (Complacency) than 10, 12 and 16 year olds,
olds, and were more likely to avoid decision making (Cop-out) than 10 and 14 year olds.

- It should be noted that although the Adolescent Decision Making Questionnaire was not designed for application to eight year olds, eight year olds were included for comparison. Reliability analysis indicated that eight year olds’ performance on this measure was unreliable for two of the subscales (self-esteem and vigilance). However, 10 year olds were unreliable on the complacency subscale and 14 year olds were unreliable on the vigilance subscale.

_Youth Decision Making Questionnaire_

- This measure was not retained for analyses after it was found the measure had poor reliability. The modifications made to this measure to suit the age range of this study likely contributed to this poor reliability.

_Sociomoral Reflection Measure_

- Sociomoral reasoning ability was found to linearly improve with age. Each age group utilised significantly more mature sociomoral reasoning than the previous age group, apart from 10 and 12 year olds, who were similar in their level of sociomoral reasoning.

- Fourteen and 16 year olds are the only two age groups that would be considered to have “mature” sociomoral reasoning abilities according to their Sociomoral Reflection Maturity Score.

- The Socio-moral Reflection Measure had excellent reliability at both the whole sample and age-group level.
Moral Interpretation of Interpersonal Violence Scale

- There were no significant age differences when comparing means across the MIIV vignettes, although the qualitative component of the MIIV mirrored the SRM-SF results with younger participants tending to use less sophisticated moral reasoning techniques, and older participants tending to be more advanced in their moral reasoning.

Because *doli incapax* uses the legal labels *seriously wrong* and *naughty* as proxy for competence, aim six was to investigate whether participants that choose the label *seriously wrong* to describe the two vignettes have significantly better moral reasoning and decision making abilities than participants that chose the label *naughty* (see Figure 17 for a visual representation). To address this aim, ANOVAs were conducted, using only the labels articulated by the law (*seriously wrong* and *naughty*\(^\text{117}\)) as the independent variable, and the remaining psychometric measures as dependent variables (the Adolescent Decision Making Questionnaire, Sociomoral Reflection Measure, and the Index of Justified Violence calculated as part of the Moral Interpretation of Interpersonal Violence Scale). Table 50 below presents the findings from these analyses for the rock scenario. ANOVAs that had significant differences are highlighted.

\(^{117}\) The label *wrong* was excluded from analyses here, as it is not legally relevant.
Figure 17. Pictorial Representation of the Variables Investigated in Aim Six

**Decision outcome:**
Reported decision to drop the rock or not, or push the person or not (Actus reus)

**Decision process:**
Reasons young people gave for decision to drop rock or not and push the person or not

**Psychometric measures:**
decision making, anti-social decision making, moral judgement, moral reasoning in violent situations

**Age:**
8, 10, 12, 14, and 16 year olds

**Moral outcome:**
Choosing a legal labels from Not wrong at all, Naughty, Wrong, Seriously Wrong
Table 50. One-Way ANOVA: Psychometric Measures x Legal Label for Stage of the Rock Scenario

<table>
<thead>
<tr>
<th>Psychometric Measure</th>
<th>Invitation stage</th>
<th>Escalation Stage(^\text{119})</th>
<th>Culmination Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociomoral Reflection Maturity Score(^\text{120})</td>
<td>(F(1, 216) = 5.84, p=0.02)</td>
<td>(F(1, 191) = 10.41, p=0.001)</td>
<td>(F(1, 230) = 0.46, p=0.50)</td>
</tr>
<tr>
<td>Index of Justified Violence(^\text{120})</td>
<td>(F(1, 218) = 0.01, p=0.92)</td>
<td>(F(1, 193) = 0.36, p=0.55)</td>
<td>(F(1, 232) = 0.32, p=0.57)</td>
</tr>
<tr>
<td>Decision Self esteem(^\text{121})</td>
<td>(F(1, 218) = 1.76, p=0.19)</td>
<td>(F(1, 193) = 9.36, p=0.003)</td>
<td>(F(1, 232) = 0.03, p=0.87)</td>
</tr>
<tr>
<td>Vigilance(^\text{121})</td>
<td>(F(1, 218) = 3.14, p=0.08)</td>
<td>(F(1, 193) = 0.65, p=0.42)</td>
<td>(F(1, 232) = 0.67, p=0.41)</td>
</tr>
<tr>
<td>Complacency(^\text{121})</td>
<td>(F(1, 218) = 0.12, p=0.73)</td>
<td>(F(1, 193) = 19.78, p&lt;0.001)</td>
<td>(F(1, 232) = 3.00, p=0.09)</td>
</tr>
<tr>
<td>Panic(^\text{121})</td>
<td>(F(1, 218) = .09, p=0.77)</td>
<td>(F(1, 193) = 3.42, p=0.07)</td>
<td>(F(1, 232) = 3.04, p=0.08)</td>
</tr>
<tr>
<td>Cop-out(^\text{121})</td>
<td>(F(1, 218) = 1.00, p=0.33)</td>
<td>(F(1, 193) = 12.89, p=0.001)</td>
<td>(F(1, 232) = 0.43, p=0.51)</td>
</tr>
</tbody>
</table>

\(^{119}\) This Escalation stage captures the participants that reported they would not participate in dropping rocks at the Invitation Stage. It should be noted that the single participant who chose the label not wrong at all recoded as naughty. Without recoding this label choice, post hoc Tukey tests were unable to be conducted. Recoding the legal labels meant that degrees of freedom were reduced, and the significant ANOVA findings were more significant than before recoding.

\(^{120}\) Calculated as part of the Sociomoral Reflection Measure – Short Form (Gibbs et al., 1992)

\(^{121}\) Calculated as part of the Moral Interpretation of Interpersonal Violence Scale (Kemmis & Valkenburg, 1999)

\(^{122}\) Calculated as part of the Adolescent Decision Making Questionnaire (Mann et al., 1988)
In the Invitation stage, participants who chose the label *seriously wrong* had significantly better sociomoral reasoning abilities compared to participants who chose *naughty*. Compared to participants who labelled the Escalation stage *naughty*, participants who labelled it *seriously wrong* had significantly better sociomoral reasoning abilities, more confidence in their decision making, were less apathetic and avoidant when making decisions. However, it should be noted that only 12 participants chose the label *naughty* here, while 183 chose *seriously wrong*. Too few of the participants who agreed to drop rocks initially chose the label *naughty* after seeing their friend drop the first rock (Escalation stage) to calculate ANOVAs. In the Culmination stage, participants had similar moral reasoning and decision making abilities regardless of their label choice. Thus, the legal labels *seriously wrong* and *naughty* were poor indicators of competence at that stage of the rock scenario.

The same analyses was then conducted for the labels young people chose when describing the lake scenario. Table 51 below presents these findings, with significant differences highlighted. Again, the legal label participants used to describe the various stages of the lake scenario rarely differentiated moral reasoning and decision making ability. Participants’ moral reasoning and decision making abilities were not significantly different based on the label they chose (*naughty* or *seriously wrong*) in either the Invitation stage or the Escalation stage. Of the participants who reported they would not push the person into the lake, those who chose the label *seriously wrong* were less hasty and impulsive when making decisions under stress than participants who chose the label *naughty*.

---

122 Where participants had initially agreed to push the person into the lake.
Table 5.1. One-Way ANOVA: Psychometric Measures x Legal Label for Stage of the Lake Scenario

<table>
<thead>
<tr>
<th>Psychometric Measure</th>
<th>Invitation Stage</th>
<th>Escalation Stage&lt;sup&gt;123&lt;/sup&gt;</th>
<th>Escalation Stage&lt;sup&gt;124&lt;/sup&gt;</th>
<th>Culmination Stage&lt;sup&gt;125&lt;/sup&gt;</th>
<th>Culmination Stage&lt;sup&gt;126&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociomoral Reflection Maturity Score&lt;sup&gt;127&lt;/sup&gt;</td>
<td>$F(1, 144) = 0.0, p=0.98$</td>
<td>$F(1, 169) = 0.02, p=0.88$</td>
<td>$F(1, 20) = 0.11, p=0.74$</td>
<td>$F(1, 215) = 4.64, p=0.03$</td>
<td>$F(1, 7) = 6.36, p=0.04$</td>
</tr>
<tr>
<td>Index of Justified Violence&lt;sup&gt;128&lt;/sup&gt;</td>
<td>$F(1, 145) = 4.01, p=0.05$</td>
<td>$F(1, 171) = 0.60, p=0.44$</td>
<td>$F(1, 20) = 1.86, p=0.19$</td>
<td>$F(1, 217) = 1.0, p=0.76$</td>
<td>$F(1, 7) = 0.64, p=0.45$</td>
</tr>
<tr>
<td>Decision Self Esteem&lt;sup&gt;129&lt;/sup&gt;</td>
<td>$F(1, 145) = 0.29, p=0.59$</td>
<td>$F(1, 171) = 1.08, p=0.30$</td>
<td>$F(1, 20) = 0.20, p=0.66$</td>
<td>$F(1, 217) = 1.78, p=0.18$</td>
<td>$F(1, 7) = 1.05, p=0.34$</td>
</tr>
<tr>
<td>Vigilance&lt;sup&gt;129&lt;/sup&gt;</td>
<td>$F(1, 145) = 2.34, p=0.13$</td>
<td>$F(1, 171) = 1.14, p=0.71$</td>
<td>$F(1, 20) = 0.01, p=0.91$</td>
<td>$F(1, 217) = 0.15, p=0.70$</td>
<td>$F(1, 7) = 0.12, p=0.74$</td>
</tr>
<tr>
<td>Complacency&lt;sup&gt;129&lt;/sup&gt;</td>
<td>$F(1, 145) = 1.38, p=0.24$</td>
<td>$F(1, 171) = 1.77, p=0.19$</td>
<td>$F(1, 20) = 2.08, p=0.17$</td>
<td>$F(1, 217) = 17.74, p&lt;0.001$</td>
<td>$F(1, 7) = 1.04, p=0.34$</td>
</tr>
<tr>
<td>Panic&lt;sup&gt;129&lt;/sup&gt;</td>
<td>$F(1, 145) = 0.53, p=0.47$</td>
<td></td>
<td></td>
<td></td>
<td>$F(1, 7) = 0.09, p=0.77$</td>
</tr>
<tr>
<td>Cop-out&lt;sup&gt;129&lt;/sup&gt;</td>
<td>$F(1, 145) = 1.22, p=0.27$</td>
<td></td>
<td></td>
<td>$F(1, 217) = 4.60, p=0.03$</td>
<td></td>
</tr>
</tbody>
</table>

<sup>123</sup>This Escalation stage captures the participants that reported they would not participate in dropping rocks at the Invitation and/or the Coercion Stages.
<sup>124</sup>This Escalation stage captures the participants that reported they would participate in dropping rocks at the Invitation or the Coercion Stages.
<sup>125</sup>This Culpitiveness stage captures the participants that did not push the person into the lake.
<sup>126</sup>This Culpitiveness stage captures the participants that pushed the person into the lake. Tukey post hoc tests were unable to be calculated here due to less than two participants choosing two of the labels (not wrong at all, and naughty).
<sup>127</sup>Calculated as part of the Sociomoral Reflection Measure – Short Form (Gibbs et al., 1992)
<sup>128</sup>Calculated as part of the Moral Interpretation of Interpersonal Violence Scale (Kernan & Valkenburg, 1999)
<sup>129</sup>Calculated as part of the Adolescent Decision Making Questionnaire (Mann et al., 1988)
In both the Culmination stages, participants who labelled pushing the person into the lake *seriously wrong* had significantly better sociomoral reasoning abilities compared to the participants who chose the label *naughty*. Of the participants who had not agreed to push the person into the lake, those who chose the label *seriously wrong* were less apathetic and avoidant in their decision making than participants who chose *naughty*. Unexpectedly, participants who had agreed to push the person into the lake and labelled it *seriously wrong* were significantly more likely to make hasty and impulsive under stress than participants who chose *naughty*. However, considering only nine participants were included in this Culmination stage, this finding may be an artefact. Considering participants had similar moral reasoning and decision making abilities regardless of label choice for the most part, these findings add further weight to the argument that the legal labels *seriously wrong* and *naughty* are poor indicators of competence.

**Overall Summary Aim Six**

- The terms *seriously wrong* and *naughty* are poor indicators of moral reasoning and decision making performance on the above psychometric instruments. Choice of these terms rarely differentiated between moral reasoning and decision making ability.
- When the terms *seriously wrong* and *naughty* did differentiate between moral reasoning and decision making competence, choosing the label *seriously wrong* was typically associated with better moral reasoning and decision making abilities compared to *naughty*. 
While the psychometric findings seen in aim five help to inform our understanding of the legally relevant psychological abilities of young people, they look at decision making and moral reasoning in isolation from the legal criteria. Although this is the intention of these measures, the overarching theme of this piece is to relate the psychological constructs of decision making and moral reasoning to legal criteria, which the above measures do not do. This is why the Competencies Associated with Doli Incapax (CADI) was developed for the purposes of this study. It incorporates the legal criteria with process-based decisional and moral questions.

The law assumes a linear acquisition of moral reasoning and decision making abilities as age increases. Using *seriously wrong* as opposed to *naughty* as a proxy for competence, the law assumes that the ability to readily identify risky behaviour as *seriously wrong* increases significantly at age 10, and again at age 14. In relation to the current sample, the law assumes that eight year olds will not understand whether their risky behaviour is *seriously wrong*, that 10 and 12 year olds will be inconsistent in their ability to label risky behaviour as *seriously wrong*, and that 14 and 16 year olds will be the age groups most likely to identify risky behaviour as *seriously wrong*. That is, 14 and 16 year olds will be the age groups who most consistently have the competence to differentiate between *seriously wrong* and *naughty* behaviour. Therefore, aim seven was to highlight age-based patterns in the labels that young people use (including *seriously wrong* and *naughty*) to describe the two vignettes. Specifically, the association between age
and choice of provided label is explored across the rock and lake scenarios\textsuperscript{130} (see Figure 18 for a pictorial representation).

\textsuperscript{130} Numerous chi square analyses are conducted as part of Aim Seven. Because this thesis uses a novel design, is exploratory in nature, and aims to build theory, alpha levels remain at $p<0.05$ throughout.
Figure 18. Pictorial Representation of the Variables Investigated in Aim Seven

**Decision outcome:** Reported decision to drop the rock /or push the person (*Actus reus*)

**Decision process:** Reasons young people gave for their decision to drop rock / push the person

**Age:** 8, 10, 12, 14, and 16 year olds

**Psychometric measures:** of decision making, anti-social decision making, moral judgement, moral reasoning in violent situations

**Moral outcome:** Choice of legal labels from the following list: *not wrong at all, naughty, wrong, seriously wrong*
In the Invitation stage of the rock scenario, participants had been told their friend suggested they ride to the middle of the bridge and drop some rocks off. Participants were then asked to label their friend’s suggestion from the options provided (not wrong at all, naughty, wrong, seriously wrong). Results are presented in Table 52 below.

<table>
<thead>
<tr>
<th>Age</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>5 (10.2%)</td>
<td>5 (10.2%)</td>
<td>39 (79.6%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>1 (2.1%)</td>
<td>5 (10.6%)</td>
<td>41 (87.2%)</td>
<td>47 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>1 (2.1%)</td>
<td>5 (10.4%)</td>
<td>42 (87.5%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>1 (2.1%)</td>
<td>4 (8.3%)</td>
<td>43 (89.6%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>1 (2%)</td>
<td>2 (4.1%)</td>
<td>46 (93.9%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>9 (3.7%)</td>
<td>21 (8.7%)</td>
<td>211 (87.6%)</td>
<td>241 (100%)</td>
</tr>
</tbody>
</table>

Chi square revealed no significant association between age and label choice \(\chi^2 (8, n=241) = 9.20, p=0.33\), with the majority characterising the suggestion to drop rocks as seriously wrong. All age groups were similar in their ability to label the risky behaviour as seriously wrong. Nevertheless, there was a linear trend towards older participants choosing seriously wrong more often. It is also of note that five times the number of eight year olds described the suggestion as naughty compared to other age groups, although again this is a matter of five eight year olds compared to one participant from each of the other age groups. To directly test the age-based legal distinctions set out under doli incapax, age was recoded into three legally-relevant age groups (eight year olds; 10 and 12 year olds; 14 and 16 year olds). When the above association was run again with age recoded
according to the age-based legal divisions, chi square analyses found that the association between age and chosen label approached significance $\chi^2 (4, n=241) = 8.64, p=0.07$.

The 16 participants who stated they would go with their friend to drop the rock in the Invitation stage were told that they then rode to the middle of the bridge with their friend. In the Escalation stage, participants were told they see their friend drop a rock off the bridge onto the freeway below, and saw a car swerve to miss the rock. Their label of the situation after their friend dropped the first rock is displayed in Table 53, below.

Table 53. Young People’s Choice of Legal Label to Describe the Escalation Stage of the Rock Scenario

<table>
<thead>
<tr>
<th>Age</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>0</td>
<td>3 (100%)</td>
<td>3 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>0</td>
<td>1 (100%)</td>
<td>1 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>0</td>
<td>3 (100%)</td>
<td>3 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>0</td>
<td>2 (100%)</td>
<td>2 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>2 (28.6%)</td>
<td>5 (71.4%)</td>
<td>7 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>2 (12.5%)</td>
<td>14 (87.5%)</td>
<td>16 (100%)</td>
</tr>
</tbody>
</table>

Considering the expected cell count of the above table is less than five, chi square analysis was not conducted. Despite there being no clear age trend, over 85% of the participants described seeing their friend drop a rock as *seriously wrong*. For the 225 participants who stated they would not go with their friend to drop the rock in the Invitation stage (over 90% of the total sample), they were told that they then saw their friend drop the rock while they are standing at the side of
the bridge, and saw the car swerve to miss the rock from there. The labels they chose to describe the Escalation stage are shown in Table 54, below.

Table 54. Young People’s Choice of Legal Label to Describe the Alternate Escalation Stage of the Rock Scenario

<table>
<thead>
<tr>
<th>Age</th>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>0</td>
<td>9 (19.6%)</td>
<td>10 (21.7%)</td>
<td>27 (58.7%)</td>
<td>46 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>0</td>
<td>2 (4.3%)</td>
<td>7 (15.2%)</td>
<td>37 (80.4%)</td>
<td>46 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>0</td>
<td>1 (2.2%)</td>
<td>3 (6.7%)</td>
<td>41 (91.1%)</td>
<td>45 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>1 (2.2%)</td>
<td>0</td>
<td>8 (17.4%)</td>
<td>37 (80.4%)</td>
<td>46 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>0</td>
<td>0</td>
<td>1 (2.4%)</td>
<td>41 (97.6%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>1 (0.4%)</td>
<td>12 (5.3%)</td>
<td>29 (12.9%)</td>
<td>183 (81.3%)</td>
<td>225 (100%)</td>
</tr>
</tbody>
</table>

Chi square analysis showed a significant association between age and label chosen at this stage, $\chi^2 (12, n=225) = 40.423$, $p<0.001$. Younger participants were more likely to choose a label other than *seriously wrong* than all other age groups. Eight, 10 and 14 year olds were at least twice as likely to label the Escalation stage *wrong* compared to 12 and 16 year olds. By comparison, over 90% of 12 and 16 year olds and over 80% of 10 and 12 year olds chose the label *seriously wrong*. Compared to the Invitation stage, almost 20% more eight year olds and 10% more 10 and 14 year olds chose a label other than *seriously wrong*. Overall, 14 year olds do not align with the otherwise linear age trend. When age was recoded into the three groups set out by the law, the association between age and label chosen remained significant $\chi^2 (6, n=225) = 31.65$, $p<0.001$, indicating these age-based legal distinctions are useful.

After the Escalation stage, all participants reported they would not continue with their friend, and thus were all exposed to the same version of the Culmination
stage in which they were told they watched their friend drop a second rock from
the bridge onto the freeway. Participants were then told they saw the rock smash a
car windscreen, and the car stopped at the side of the road. The labels they chose
to describe the Culmination stage are shown in Table 55 below.

Table 55. Young People’s Choice of Legal Label to Describe the Culmination Stage of
the Rock Scenario

<table>
<thead>
<tr>
<th>Age</th>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>0</td>
<td>1 (2.0%)</td>
<td>3 (6.1%)</td>
<td>45 (91.8%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>0</td>
<td>1 (2.1%)</td>
<td>0</td>
<td>46 (97.9%)</td>
<td>47 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>0</td>
<td>0</td>
<td>1 (2.1%)</td>
<td>47 (97.9%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>1 (2.1%)</td>
<td>0</td>
<td>1 (2.1%)</td>
<td>46 (95.8%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>0</td>
<td>0</td>
<td>1 (2.0%)</td>
<td>48 (98.0%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>1 (0.4%)</td>
<td>2 (0.8%)</td>
<td>6 (2.5%)</td>
<td>232 (96.3%)</td>
<td>241 (100%)</td>
</tr>
</tbody>
</table>

Chi square analysis indicated no significant association between age and
label chosen, χ² (12, n=241) = 11.06, p=0.52, with over 90% of all age groups
choosing the label seriously wrong. This finding mirrors the Invitation stage, and
indicates that all age groups were equally as likely to label rock dropping as
seriously wrong. When the lone respondent who described the friend’s actions as
not wrong at all was recoded as naughty, the chi square result did not become
significant, χ² (8, n=241) = 6.04, p=0.64. Further, when age was recoded into the
three groups specified by the law, the association between age and label chosen
remained non-significant χ² (6, n=241) = 6.80, p=0.34.
Table 56 below summarises the rate at which each age group chose each label across the stages of the rock scenario.

Table 56. Percentage of Each Age Group That Chose Each Legal Label, Per Stage of the Rock Scenario

<table>
<thead>
<tr>
<th></th>
<th>Not wrong at all</th>
<th>Naughtly</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 y/o 10 y/o 12 y/o 14 y/o 16 y/o</td>
<td>8 y/o 10 y/o 12 y/o 14 y/o 16 y/o</td>
<td>8 y/o 10 y/o 12 y/o 14 y/o 16 y/o</td>
<td>8 y/o 10 y/o 12 y/o 14 y/o 16 y/o</td>
</tr>
<tr>
<td>Invitation stage(^{131})</td>
<td>0 0 0 0 0</td>
<td>10.2 2.1 2.1 2.1 2</td>
<td>10.2 10.6 10.4 8.3 4.1</td>
<td>79.6 87.2 87.5 89.6 93.9</td>
</tr>
<tr>
<td>Escalation Stage(^{132})</td>
<td>0 0 0 0 0</td>
<td>0 0 0 0 0</td>
<td>0 0 0 0 0</td>
<td>100 100 100 100 71.4</td>
</tr>
<tr>
<td>Escalation Stage(^{133})</td>
<td>0 0 2.2 0</td>
<td>19.6 4.3 2.2 0 0</td>
<td>21.7 15.2 6.7 17.4 2.4</td>
<td>58.7 80.4 91.1 80.4 97.6</td>
</tr>
<tr>
<td>Culmination stage(^{134})</td>
<td>0 0 2.1 0</td>
<td>2 2.1 0 0 0</td>
<td>6.1 0 2.1 2.1 2</td>
<td>91.8 97.9 97.9 95.8 98</td>
</tr>
</tbody>
</table>

\(^{131}\) N = 245  
\(^{132}\) N = 16  
\(^{133}\) N = 225  
\(^{134}\) N = 241
Aim Seven Rock Scenario Summary

- Overall, participants were very consistent in describing the rock scenario as *seriously wrong* with generally no less than 80% of any age group choosing *seriously wrong* in any given stage. The exceptions to this were that 70% of 16 year olds that initially agreed to drop rocks chose *seriously wrong* only after seeing their friend drop a rock (Escalation stage), and only 60% of eight year olds that declined to drop rocks chose *seriously wrong* after seeing their friend drop the first rock (Escalation stage).

- The only significant association between age and label choice (*not wrong at all, naughty, wrong, seriously wrong*) was in the Escalation stage (once participants had seen their friend drop the first rock and a car swerved to miss the rock). In the Invitation and Culmination stages, all age groups were similar in their label choice, with at least 80% of all age groups choosing *seriously wrong* in the Invitation stage and at least 90% choosing this label in the Culmination stage.\(^{135}\)

- Compared to the Invitation stage, almost 20% more eight year olds and 10% more 10 and 14 year olds chose a label other than *seriously wrong* in the Escalation stage. In fact, eight year olds were the age group most likely to choose a label other than *seriously wrong* across all stages of the Rock scenario.

---

\(^{135}\) Recoding age into the three legally relevant groups (8, 10 and 12, 14 and 16) did not change the associations between age and label choice, although it did bring non-significant associations closer to significance. The significant association between age and label choice at the Escalation stage remained significant once age was recoded.
In the Invitation stage of the Lake scenario, participants were told they were with their friend in a park and saw a person from their year at school (same age and sex as the participant) sitting on a railing by the edge of the lake. Participants were told the person on the railing had their back turned to them, and got them in trouble last week. They are then told their friend said “let’s go over and push her/him in”. Table 57, below, shows the labels that participants chose to describe the scenario, as broken down by age group.

Table 57. Young People’s Choice of Legal Label to Describe the Initial Invitation

<table>
<thead>
<tr>
<th>Age</th>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>0</td>
<td>9 (17.6%)</td>
<td>14 (27.5%)</td>
<td>28 (54.9%)</td>
<td>51 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>1 (2.1%)</td>
<td>5 (10.4%)</td>
<td>13 (27.1%)</td>
<td>29 (60.4%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>0</td>
<td>1 (2%)</td>
<td>19 (38.8%)</td>
<td>29 (59.2%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>3 (6.2%)</td>
<td>8 (16.7%)</td>
<td>20 (41.7%)</td>
<td>17 (35.4%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>0</td>
<td>5 (10.2%)</td>
<td>28 (57.1%)</td>
<td>16 (32.7%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>4 (1.6%)</td>
<td>28 (11.4%)</td>
<td>94 (38.4%)</td>
<td>119 (48.6%)</td>
<td>245 (100%)</td>
</tr>
</tbody>
</table>

There was a significant association between age and label choice, $\chi^2 (12, n=245) = 30.55, p=0.002$, which was maintained even when the four not wrong at all responses were recoded as naughty, $\chi^2 (8, n=245) = 24.92, p=0.002$. Compared to the Invitation stage of the rock scenario, the way participants labelled the lake scenario was much more varied. In the rock scenario, over 80% of the sample labelled the scenario as seriously wrong, while in the Invitation stage of the lake scenario, under 50% of the sample described it as seriously wrong.

In terms of age-based trends, 14 and 16 year olds were the age groups most likely to label the suggestion to push the person into the lake wrong, while eight,
10 and 12 year olds labelled this suggestion *seriously wrong*. There was a close to
linear age trend in the participants who described the lake scenario as *wrong*, with
16 year olds almost twice as likely to choose that label compared to eight year olds.
By contrast, roughly twice amount of eight, 10 and 12 year olds chose the label
*seriously wrong*, compared to 14 and 16 year olds. When age was recoded into
three groups, consistent with the age-based distinctions made by the law, the
association between age and chosen label remained significant $\chi^2 (6, n=245) =
19.31, p=0.004$. However, the age-trends indicated that younger (not older) age
groups were more likely to choose the label *seriously wrong*.

In the Escalation stage, the 35 participants who said they would go with
their friend to push the person walk up behind the person from school, and were
told they walked past a *Deep Water* sign. The labels that participants chose to
describe the scenario at this point are presented in Table 58, below.

Table 58. *Young People’s Choice of Legal Label to Describe the Escalation Stage of
the Lake Scenario*

<table>
<thead>
<tr>
<th>Age</th>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 year olds</td>
<td>0</td>
<td>0</td>
<td>2 (22.2%)</td>
<td>7 (77.8%)</td>
<td>9 (100%)</td>
</tr>
<tr>
<td>10 year olds</td>
<td>0</td>
<td>0</td>
<td>2 (40%)</td>
<td>3 (60%)</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>12 year olds</td>
<td>0</td>
<td>0</td>
<td>1 (33.3%)</td>
<td>2 (66.7%)</td>
<td>3 (100%)</td>
</tr>
<tr>
<td>14 year olds</td>
<td>1 (9.1%)</td>
<td>4 (36.4%)</td>
<td>4 (36.4%)</td>
<td>2 (18.2%)</td>
<td>11 (100%)</td>
</tr>
<tr>
<td>16 year olds</td>
<td>0</td>
<td>1 (14.3%)</td>
<td>3 (42.9%)</td>
<td>3 (42.9%)</td>
<td>7 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>1 (2.9%)</td>
<td>5 (14.3%)</td>
<td>12 (34.3%)</td>
<td>17 (48.6%)</td>
<td>35 (100%)</td>
</tr>
</tbody>
</table>

Chi square analysis was not conducted, due to an expected cell count of less
than five. There is little change in the spread of label choice from the Invitation
stage (see Table 57), with approximately 35% of the sample labelling scenario as
wrong and just over 45% as seriously wrong. While more participants described the Escalation stage as seriously wrong compared to the other labels, there is no linear age trend evident. In fact, eight, 10 and 12 year olds remained most likely to choose seriously wrong to label the Escalation stage, while 14 year olds were equally as likely to choose naughty or wrong, and 16 year olds were equally as likely to choose wrong or seriously wrong. While small sample size prevented analyses to test the current doli incapax age cut offs, the spread of responses indicates the use of seriously wrong does not linearly increase with age. However, these trends may have changed with a larger sample size.

In the alternate Escalation stage, participants who chose not to go with their friend were told they watched their friend from the sidelines walk up behind the person from school and saw the Deep Water sign. The labels they chose to describe the scenario, broken down by age, are presented in Table 59, below.

Table 59. Young People’s Choice of Legal Label to Describe the Alternate Escalation Stage of the Lake Scenario

<table>
<thead>
<tr>
<th></th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 years old</td>
<td>2 (4.8%)</td>
<td>6 (14.3%)</td>
<td>34 (81%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>10 years old</td>
<td>0</td>
<td>6 (14%)</td>
<td>37 (86%)</td>
<td>43 (100%)</td>
</tr>
<tr>
<td>12 years old</td>
<td>0</td>
<td>7 (15.2%)</td>
<td>39 (84.8%)</td>
<td>46 (100%)</td>
</tr>
<tr>
<td>14 years old</td>
<td>0</td>
<td>8 (21.6%)</td>
<td>29 (74.4%)</td>
<td>37 (100%)</td>
</tr>
<tr>
<td>16 years old</td>
<td>3 (7.1%)</td>
<td>10 (23.8%)</td>
<td>29 (69%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>5 (2.4%)</td>
<td>37 (17.6%)</td>
<td>168 (80%)</td>
<td>210 (100%)</td>
</tr>
</tbody>
</table>

Chi square analysis showed no significant association between age and label chosen to describe the scenario, $\chi^2(8, n=210) = 10.97, p=0.20$. Nevertheless, the age trend seen in the Invitation stage was seen again here, with a higher
proportion of 14 and 16 year olds (approximately 5%) describing the scenario as *wrong* compared to younger participants. Further, a higher proportion of younger participants (approximately 10%) described the scenario as *seriously wrong* compared to older participants. Although age trends were maintained, almost double the number of participants labelled the lake scenario as *seriously wrong* in this Escalation stage compared to the Invitation and above Escalation stage of the lake scenario. Recoding these few *naughty* responses as *wrong* did not make the association between age and label choice significant, $\chi^2(4, n=210) = 4.87$, $p=0.30$. Further, recoding the age groups into the three legally-relevant age ranges did not make the association between age and label choice significant either $\chi^2(4, n=210) = 6.46$, $p=0.17$. This indicates that all age groups chose the labels *wrong* and *seriously wrong* at similar rates.

While the majority of participants declined to continue with their friend to push the person into the lake, the 12 participants that did continue into the Culmination stage saying they would still push the person were told that they walked up behind the girl/guy from school with their friend, and pushed them into the lake. They were told they could see the girl/guy in the water splashing around and yelling out "I can’t swim". With the potential dangers and consequences now more obvious, the participants were asked to describe the scenario from the available labels, which are shown in Table 60, below.
Table 60. Young People’s Choice of Legal Label to Describe the Culmination Stage of the Lake Scenario

<table>
<thead>
<tr>
<th></th>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8 years old</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2 (100%)</td>
<td>2 (100%)</td>
</tr>
<tr>
<td><strong>10 years old</strong></td>
<td>0</td>
<td>0</td>
<td>1 (50%)</td>
<td>1 (50%)</td>
<td>2 (100%)</td>
</tr>
<tr>
<td><strong>12 years old</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>14 years old</strong></td>
<td>1 (16.7%)</td>
<td>0</td>
<td>1 (16.7%)</td>
<td>4 (66.7%)</td>
<td>6 (100%)</td>
</tr>
<tr>
<td><strong>16 years old</strong></td>
<td>0</td>
<td>1 (50%)</td>
<td>0</td>
<td>1 (50%)</td>
<td>2 (100%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1 (8.3%)</td>
<td>1 (8.3%)</td>
<td>2 (16.7%)</td>
<td>8 (66.7%)</td>
<td>12 (100%)</td>
</tr>
</tbody>
</table>

Chi square analysis was not conducted due to an expected cell count of less than five. No clear age trends are discernable, and it would be difficult to speculate given the low number of participants that chose this path of the questionnaire. It is noteworthy that over two thirds of participants (n=8) described pushing the person into the lake as seriously wrong, which is proportionately over 20% more than when these participants were in the corresponding Escalation stage.

In the alternate Culmination stage, the 232 participants who declined to continue with their friend to push the person into the lake were told they then saw their friend walk up behind the girl/guy from school, and push them into the lake. They were also told they could see the girl/guy in the water splashing around and yelling out “I can’t swim”. The number and proportion of responses for the each age group are presented in Table 61.
Table 61. Young People’s Choice of Legal Label to Describe the Alternate Culmination Stage of the Lake Scenario

<table>
<thead>
<tr>
<th></th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 years old</td>
<td>3 (6.3%)</td>
<td>2 (4.2%)</td>
<td>43 (89.6%)</td>
<td>48 (100%)</td>
</tr>
<tr>
<td>10 years old</td>
<td>1 (2.2%)</td>
<td>3 (6.5%)</td>
<td>42 (91.3%)</td>
<td>46 (100%)</td>
</tr>
<tr>
<td>12 years old</td>
<td>1 (2%)</td>
<td>1 (2%)</td>
<td>47 (95.9%)</td>
<td>49 (100%)</td>
</tr>
<tr>
<td>14 years old</td>
<td>0</td>
<td>1 (2.4%)</td>
<td>41 (97.6%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>16 years old</td>
<td>0</td>
<td>6 (12.8%)</td>
<td>41 (87.2%)</td>
<td>47 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>5 (2.2%)</td>
<td>13 (5.6%)</td>
<td>214 (92.2%)</td>
<td>232 (100%)</td>
</tr>
</tbody>
</table>

There was no significant association between age and label choice $\chi^2(8, n=232) = 12.47, p=0.13$, even when the *naughty* responses were recoded as *wrong* $\chi^2(4, n=232) = 4.8, p=0.31$. Over 90% of the sample described seeing their friend push the person into the lake as *seriously wrong*, which is an increase from all previous stages. In comparison to the alternate Culmination stage, 30% more participants chose the label *seriously wrong*. There are no linear age trends in terms of the other labels chosen, however, the amount of 16 year olds (n=6) describing the Culmination stage as *wrong* was at least double that of the any other age group. Recoding the age groups into three legally-relevant age ranges did not make the association between age and label choice significant $\chi^2(4, n=232) = 7.03, p=0.13$. Thus, by the Culmination stage of the lake scenario, all age groups were chose the label *seriously wrong* at similar rates. Table 62 below displays the percentage of each age group that chose each label across the stages of the lake scenario.
<table>
<thead>
<tr>
<th></th>
<th>Not wrong at all</th>
<th>Naughtly</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>y/o</td>
<td>y/o</td>
<td>y/o</td>
<td>y/o</td>
<td>y/o</td>
</tr>
<tr>
<td><strong>Invitation stage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>136</td>
<td>0.00</td>
<td>2.10</td>
<td>0.12</td>
<td>1.16</td>
</tr>
<tr>
<td><strong>Escalation Stage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>137</td>
<td>0.00</td>
<td>0.00</td>
<td>0.09</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Escalation Stage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>138</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Culmination stage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>139</td>
<td>0.00</td>
<td>0.00</td>
<td>0.17</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Culmination stage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>140</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

136 N = 245
137 N = 35
138 N = 210
139 N = 12
140 N = 232
### Aim Seven Summary Lake Scenario

- Overall, there was greater variance of label choice (not wrong at all, naughty, wrong, or seriously wrong) in the lake scenario, compared to the rock scenario. That is, more participants chose labels other than seriously wrong more often than in the rock scenario.

- Label choice (not wrong at all, naughty, wrong, or seriously wrong) was only significantly associated with age in the Invitation stage, where pushing the person was initially suggested. Thus, once participants had seen the Deep Water sign, and the victim in the lake, the age groups labelled the scenario in a similar way.\(^{141}\)

- Fourteen and 16 year old participants were more likely to choose a label other than seriously wrong in the Invitation stage compared to younger participants. That is, older participants were more likely to see the proposed act of pushing the person into the lake as less serious in the Invitation stage. This finding coincides with earlier findings that 14 and 16 year olds were more likely to agree to push the person (see aim one) and that their decision to push the person was significantly associated with label choice (see aim four).

- In the Escalation and Culmination stages where participants agreed to push the person, participants chose the label seriously wrong at a lower rate (50-66%) compared to the alternate stages where participants reported they would not push the person (80-90%). Thus, participants who reported they would not go with their friend labelled the lake scenario seriously wrong.

---

\(^{141}\) Recoding age into the three legally relevant groups (8, 10 and 12, 14 and 16) did not change the associations between age and label choice, although it did bring non-significant associations closer to significance. The significant association between age and label choice at the Invitation stage remained significant once age was recoded.
more frequently than participants who reported they would go (although
the association between age and label choice could not be calculated due to
low expected cell count. When sample size was large enough, there were no
significant associations between age and label choice at these stages,
meaning participants of all age groups that declined to participate labelled
the Escalation and Culmination stages similarly.

**Overall Summary for Aim Seven**

- Approximately 80% of participants labelled each stage of the rock scenario
  *seriously wrong*. There was much more variance in label choice across the
  stages of the lake scenario, with older participants (14 and 16 year olds)
  choosing labels other than *seriously wrong* more often than younger
  participants.

- Choice of legal label (*not wrong at all, naughty, wrong, seriously wrong*) was
  not consistently associated with age. In fact, age was only significantly
  associated with label choice in two stages: the Escalation stage of the rock
  scenario and the Invitation stage of the lake scenario. That is, eight year
  olds saw dropping the rock as less wrong compared to other age groups
  after they were told they saw their friend drop the first rock. In the lake
  scenario, 14 and 16 year olds initially saw pushing the person into the lake
  as less wrong than the other age groups.

- Recoding age into three legally relevant groups (8 year olds; 10 and 12 year
  olds; 14 and 16 year olds) did not change the associations between age and
  label choice, although it did bring non-significant associations closer to
  significance.
Considering different reasoning processes can reach the same moral judgement outcome, it was important to explore the reasons why young people reported choosing the above described labels. That is, participants may have chosen the same legal label (not wrong at all, naughty, wrong, or seriously wrong) for different reasons. The eighth aim was to explore the association between the labels that young people use (including seriously wrong and naughty) to describe the two vignettes and the justification they provide for choosing that label\textsuperscript{142}. The ninth aim was to highlight age-based patterns in the justifications young people provide for their label choice. This aim will explore whether different age groups use different reasoning processes when labelling risky behaviour. Considering both these aims relate to the same label choice, they are presented together for the sake of brevity. Figure 19 visually depicts the variables included in aim eight and nine.

\textsuperscript{142} Numerous chi square analyses are conducted as a part of Aim Eight and Nine. Because this thesis uses a novel design, is exploratory in nature, and aims to build theory, alpha levels remain at p<0.05 throughout.
Figure 19. Pictorial Representation of the Variables Investigated in Aim Eight and Nine

**Decision outcome:** Reported decision to drop the rock / push the person (*Actus reus*)

**Decision process:** Reasons young people gave for their decision to drop rock / push the person

**Age:** 8, 10, 12, 14, and 16 year olds

**Psychometric measures:** Of decision making, anti-social decision making, moral judgement, moral reasoning in violent situations

**Moral outcome:** Choice of legal label from the following list: not wrong at all, naughty, wrong, seriously wrong

**Moral process:** Reasons young people gave for their choice of legal label (not wrong at all, naughty, wrong, seriously wrong)
Before discussing the findings related to aim eight and nine, whether the number of rationales participants provided varied significantly across age groups was investigated. As Table 63 shows, participants provided a similar number of rationales when justifying their label choice in the Culmination stage of the rock scenario. However, number of rationales participants provided in the Invitation and Escalation stages of the rock scenario was significantly different between age groups. In the Invitation stage, post-hoc Tukey HSD tests revealed that eight year olds provided significantly fewer rationales different compared to 14 and 16 year olds. The Escalation stage followed the same trend, with post-hoc Tukey HSD tests revealing eight year olds provided significantly less rationales compared to 14 and 16 year olds. These findings add to the emerging trend for eight year olds to be less verbose than other age groups, which was first seen in the number of rationales young people provided when justifying their decision in the Coercion stage of the lake scenario (see Table 9, above).

In the Invitation stage of the lake scenario, as well as the Escalation and Culmination stages where participants had declined to push the person, the number of rationales provided was significantly different across age groups. In the Invitation stage, post-hoc Tukey HSD tests revealed that eight year olds gave significantly fewer rationales compared to 12 and 14 year olds. In the Escalation stage, post hoc Tukey HSD analyses revealed that eight year olds cited significantly less rationales than all other age groups. In the Culmination stage, Post hoc Tukey HSD analyses showed that eight year olds gave significantly fewer justifications for their choice of label compared to all other age groups. Conversely, for the participants who initially agreed to push the person into the lake, they provided a similar number of rationales at the Escalation stage, regardless of their age.
Together, these findings highlight eight year olds’ propensity to provide less rationales when justifying their label choice. Eight year olds were consistently less verbose when justifying label choices compared to reported decisions (see aim two).
Table 63. Average Number of Rationales Young People Provided when Justifying their Legal Label Choice (not wrong at all, naughty, wrong, seriously wrong)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (sd)</td>
<td>Mean (sd)</td>
<td>Mean (sd)</td>
<td>Mean (sd)</td>
<td>Mean (sd)</td>
<td></td>
</tr>
<tr>
<td>Rock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invitation Stage (n=241)</td>
<td>2.57 (1.17)</td>
<td>3.43 (1.73)</td>
<td>3.13 (1.52)</td>
<td>3.68 (2.18)</td>
<td>3.55 (1.44)</td>
<td>F(4, 236) = 3.55, p=0.008</td>
</tr>
<tr>
<td>Escalation Stage (n=225)</td>
<td>1.91 (1.13)</td>
<td>2.46 (1.17)</td>
<td>2.56 (1.42)</td>
<td>2.78 (1.65)</td>
<td>3.10 (1.65)</td>
<td>F(4, 220) = 4.24, p=0.003</td>
</tr>
<tr>
<td>Culmination Stage (n=241)</td>
<td>2.16 (1.39)</td>
<td>2.62 (1.39)</td>
<td>2.67 (1.51)</td>
<td>2.88 (1.88)</td>
<td>2.90 (1.31)</td>
<td>F(4, 236) = 4.28, p=0.11</td>
</tr>
<tr>
<td>Lake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invitation Stage (n=245)</td>
<td>2.57 (1.40)</td>
<td>3.10 (1.34)</td>
<td>3.86 (1.73)</td>
<td>3.54 (1.66)</td>
<td>3.43 (1.85)</td>
<td>F(4, 240) = 4.63, p=0.001</td>
</tr>
<tr>
<td>Escalation Stage (n=35)</td>
<td>2.78 (1.99)</td>
<td>3.40 (2.07)</td>
<td>2.67 (2.08)</td>
<td>3.64 (1.57)</td>
<td>3.57 (1.51)</td>
<td>F(4, 30) = 0.43, p=0.79</td>
</tr>
<tr>
<td>Escalation Stage (n=210)</td>
<td>2.05 (1.89)</td>
<td>3.14 (1.47)</td>
<td>2.87 (1.00)</td>
<td>3.32 (1.33)</td>
<td>3.24 (1.28)</td>
<td>F(4, 205) = 6.99, p=0.001</td>
</tr>
<tr>
<td>Culmination Stage (n=232)</td>
<td>2.17 (0.16)</td>
<td>3.20 (1.57)</td>
<td>3.04 (1.70)</td>
<td>3.29 (1.64)</td>
<td>3.43 (1.58)</td>
<td>F(4, 227) = 5.00, p=0.001</td>
</tr>
</tbody>
</table>

---

143 Because only 16 participants entered the Escalation stage of the Rock scenario, ANOVA was not calculated, as results are unlikely to be useful with such a small sample.  
144 Because only 12 participants entered the Culmination stage of the Lake scenario, ANOVA was not calculated, as results are unlikely to be useful with such a small sample.
Considering aim eight and nine relate to participants’ qualitative responses, Table 64 below displays the relevant categories used to code their responses. The full list of categories used to code participants’ qualitative responses were presented in the Method chapter, however the relevant categories are presented for the reader’s convenience before discussing the each scenario’s findings. Because there are at least three parties in each vignette, the participant, friend, and potential victim(s), for the sake of clarity the participant is referred to as the “respondent” in the below categories, as the friend and respondent can both participate in the scenario.

Table 64. Categories Used to Code the Rationales Young People Provided when Justifying their Choice of Legal Label in the Rock Scenario

<table>
<thead>
<tr>
<th>Category Name</th>
<th>Exemplars</th>
</tr>
</thead>
</table>
| Potential for harm to people (All references) | “People can get hurt”  
| | “Someone could die”  
| | “You could kill someone”  
| | “People could be seriously injured”  
| Potential damage to inanimate objects as a result of dropping rock(s) (All references) | “The car could swerve and then hit another car”  
| | “The car could crash”  
| | “She’s just damaged a car”  
| | “That car could cause an accident”  
| Potentially receive sanctions for dropping rock(s) (All references) | “She can go to jail”  
| | “We both would have got in trouble”  
| | “My parents would probably get involved and get angry and I’d probably have to do more chores”  
| | “You could get arrested and fined”  
| | “They might tell your mum”  
| | “I could get in trouble by my parents, by the police, and by my friend’s parents. Yeah, just get in trouble.”  
<p>| | “I could also get grounded” |</p>
<table>
<thead>
<tr>
<th>Mention of danger or hazard resulting from dropping the rock (All references) Poor quality of the idea / behaviour / decision Reference to the legal system / suggested or actual rock dropping being illegal Reference to monetary cost of damage as a result of dropping rock(s) Contingencies that could escalate risk / reduce safety Reference to existing knowledge of dangers associated with dropping rock(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“It’s really dangerous” “You could cause hazards on the road” “It is a hazard to the cars [to drop rocks]” “It’s very risky” “I wouldn’t want to be involved in a really bad decision” “Well, it’s not a very sensible idea” “I’d try and convince him that it’s not a good idea” “It’s a silly thing to do” “It’s just stupid that someone would even think of doing that” “She can go to jail”¹⁴⁵ “You could get arrested and fined”²⁴ “I was a witness so I could be taken to court as a witness” “There’d be some obligation legally to stop someone from doing that sort of thing” “Just because it’d be fun, doesn’t mean it’s legal” “It’s illegal” “My mum might make me pay to fix up the car or pay the hospital fee or something like that” “They would have to pay a lot just to get [the car] fixed” “You would have to pay for the damage” “If that car hadn’t swerved out of the way the rock could’ve hit it” “If the car didn’t actually see that rock and didn’t swerve out of the way then it would have got hit and that could have seriously injured the person in the car” “We saw a video at school about it (dropping rocks)” “You hear stories in the news and stuff of kids dropping rocks off bridges and stuff” “I have heard about people throwing rocks at cars” “I did once throw a little fruit at a car and I regret that a lot and there was some serious consequences”</td>
</tr>
</tbody>
</table>

In the rock scenario, participants were asked to label (not wrong at all, naughty, wrong, or seriously wrong) the Invitation stage, then justify why they

¹⁴⁵ These rationales would also be coded as mentioning a sanction.
chose that label. As mentioned, no significant association was found between age and label choice, with over 80% of every age group choosing the label *seriously wrong*. The top five reasons participants reported they chose these labels are presented in table 65, below. Mentioning potential harm to people and possible damage to inanimate objects dominated the justifications participants gave, as they were cited at over five times the rate of the next most cited rationale, possibly receiving sanctions (getting in trouble).
Table 65. The Association Between the Legal Label Young People Chose when Describing the Initial Invitation Stage of the Rock Scenario and the Top Rationales they Provided when Justifying their Label

<table>
<thead>
<tr>
<th>Reason</th>
<th>Overall N=241</th>
<th>Naughty n=9</th>
<th>Wrong n=21</th>
<th>Serioulsly Wrong n=211</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potential for harm to people (All references)</td>
<td>190 (78.8%)</td>
<td>5 (55.6%)</td>
<td>13 (61.9%)</td>
<td>172 (81.5%)</td>
<td>χ²(2, 190)=7.44, p=0.03</td>
</tr>
<tr>
<td>2 Potential damage to inanimate objects as a result of dropping rock(s) (All references)</td>
<td>178 (73.9%)</td>
<td>6 (66.7%)</td>
<td>17 (81%)</td>
<td>155 (73.5%)</td>
<td>χ²(2, 178)=0.81, p=0.67</td>
</tr>
<tr>
<td>3 Potentially receive sanctions for dropping rock(s) (All references)</td>
<td>35 (14.5%)</td>
<td>1 (11%)</td>
<td>0</td>
<td>34 (16.1%)</td>
<td>χ²(2, 35)= 4.08, p=0.13</td>
</tr>
<tr>
<td>4 Mention of danger or hazard resulting from dropping the rock(s) (All references)</td>
<td>31 (12.9%)</td>
<td>3 (33.3%)</td>
<td>1 (4.8%)</td>
<td>27 (12.8%)</td>
<td>χ²(2, 31)= 4.60, p=0.10</td>
</tr>
<tr>
<td>5 Poor quality of the idea / behaviour / decision</td>
<td>22 (9.1%)</td>
<td>1 (11%)</td>
<td>1 (4.8%)</td>
<td>20 (9.5%)</td>
<td>χ²(2, 22)= 0.56, p=0.76</td>
</tr>
</tbody>
</table>
When broken down by label chosen, a significant association was found between label choice and citing potential harm to people. Over 80% of participants who labelled the Invitation stage of the rock scenario seriously wrong mentioned the potential for harm to people, while between half and two thirds of participants who labelled this stage wrong or naughty mentioned harm to people. For participants who labelled the Invitation stage of the rock scenario as wrong or naughty, the top two rationales were reversed, with potential damage to inanimate objects being cited more often than potential harm to people.

For the sake of clarity, age-based trends in the rationales provided were investigated for each label choice separately. As too few participants chose naughty or wrong to meet minimum cell count requirements, the findings displayed in Table 66 show age-based trends in how participants that chose seriously wrong justified that label choice. All age groups mentioned that someone (either themselves or someone other than themselves) could be hurt or injured at a relatively even rate, with no significant association found between age and mentioning harm. Mentioning potential damage to inanimate objects was significantly associated with age. There was an almost linear negative age trend in the rate at which participants cited potential damage to inanimate objects, with almost 90% of eight and 10 year olds giving this justification, compared to almost 60% of 16 year olds. Considering age was not significantly associated with label choice at the Invitation stage of the rock scenario, this finding shows that age impacted the reasoning process young participants used to choose that label. That is, mentioning damage to objects differed by age, while label choice did not.
Table 66. The Association Between Age and the Top Rationales Young People Provided when Labelling the Invitation Stage of the Rock Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th>Potential for harm to people (All references)</th>
<th>8 yr olds n=39</th>
<th>10 yr olds n=41</th>
<th>12 yr olds n=42</th>
<th>14 yr olds n=43</th>
<th>16 yr olds n=46</th>
<th>$\chi^2$ (df, n) or</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential damage to inanimate objects as a result of dropping rock(s) (All references)</td>
<td>35 (89.7%)</td>
<td>36 (87.8%)</td>
<td>27 (64.3%)</td>
<td>33 (76.7%)</td>
<td>34 (52.2%)</td>
<td>$\chi^2(4, 155)=22.37, p&lt;0.001$</td>
<td></td>
</tr>
<tr>
<td>Potentially receive sanctions for dropping rock(s) (All references)</td>
<td>6 (15.4%)</td>
<td>9.8%</td>
<td>7 (16.7%)</td>
<td>12 (27.9%)</td>
<td>5 (10.9%)</td>
<td>$\chi^2(4, 35)=6.61, p=0.16$</td>
<td></td>
</tr>
<tr>
<td>Mention of danger or hazard resulting from dropping the rock(s) (All references)</td>
<td>2 (5.1%)</td>
<td>5 (12.2%)</td>
<td>5 (11.9%)</td>
<td>6 (14%)</td>
<td>9 (19.6%)</td>
<td>$\chi^2(4, 27)=4.04, p=0.40$</td>
<td></td>
</tr>
<tr>
<td>Reference to existing knowledge of dangers associated with dropping rock(s)</td>
<td>1 (2.6%)</td>
<td>2 (4.9%)</td>
<td>4 (9.5%)</td>
<td>7 (16.3%)</td>
<td>7 (15.2%)</td>
<td>Not calculated$^{146}$</td>
<td></td>
</tr>
</tbody>
</table>

$^{146}$ Expected cell count less than five
The next time participants were asked to label the rock scenario was in the Escalation stage. As mentioned, only 16 participants stated they would accompany their friend to drop rocks. All but two of these 16 participants described the friend’s actions as seriously wrong. When participants were asked to justify their choice of label, the most cited justification was potential damage to inanimate objects as a result of dropping rock(s), followed by potential for harm to people, followed by mentioning danger or hazard resulting from dropping the rock(s), followed by potentially receive sanctions for dropping rock(s), and finally making reference to the legal system / suggested or actual rock dropping being illegal. Because only a small number of participants entered this Escalation stage, the associations between both rationale and label, and rationale and age could not be calculated. However, it is of interest that the top two rationales participants provided here are in reverse order compared to the Invitation stage.

In the alternate Escalation stage, where participants stated they did not want to go with their friend to drop rocks and subsequently were told they observed their friend dropping the first rock from the side of the bridge, almost 60% of the sample described the friends’ actions as seriously wrong. No significant associations were found between label choice and rationale for choosing that label, thus findings are not displayed in table format. This finding indicates that participants chose different labels for similar reasons. Similar to the other Escalation stage, the top two rationales were reversed compared to the Invitation stage, with participants citing potential for damage to objects most often followed by harm to people.

To investigate age-based trends in how participants justified their description of the rock scenario (as not wrong at all, naughty, wrong, or seriously wrong), participants were first divided by their label choice. Table 67 below shows
the top rationales participants provided for choosing the label *seriously wrong.*
Citing the potential for damage to inanimate objects was significantly associated
with age, although the age-trend was not linear with over 90% of eight year olds
citing this rationale, compared to just over over half of the 14 year olds. No other
rationales were significantly associated with age. These findings indicate that apart
from younger participants being more likely to cite damage to objects, participants
chose *seriously wrong* for similar reasons, regardless of their age.

The number of participants that labeled seeing their friend drop the first
rock *wrong* met possible minimum cell requirements to investigate how different
age groups justified this label choice. As mentioned previously, there was a
significant association between age and label chosen (see aim seven), with eight
year olds choosing the label *wrong* at almost five times the rate of the other age
groups. However, no associations between age and justifications for choosing the
label *wrong* could be calculated, as too few participants cited each rationale. It is
noteworthy that of the top five rationales participants used to justify choosing the
label *wrong*, four were the same as participants that chose *seriously wrong*. The
one difference was that participants who chose *naughty* identified contingencies
that could reduce risk or increase safety, rather than the poor quality of the idea,
which may help to explain why they saw rock dropping as *wrong* rather than
*seriously wrong*, because they identified ways that risks could be reduced.
Table 67. The Association Between Age and the Top Rationales Young People Provided when Labelling the Escalation Stage of the Rock Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th>Potential damage to inanimate objects as a result of dropping rock(s) (All references)</th>
<th>8 yr olds n=27</th>
<th>10 yr olds n=37</th>
<th>12 yr olds n=41</th>
<th>14 yr olds n=37</th>
<th>16 yr olds n=41</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people (All references)</td>
<td>25 (92.6%)</td>
<td>31 (83.8%)</td>
<td>31 (75.6%)</td>
<td>21 (56.8%)</td>
<td>29 (70.7%)</td>
<td>( \chi^2(4, 137)=12.91, p=0.01 )</td>
</tr>
<tr>
<td>Mention of danger or hazard resulting from dropping the rock (All references)</td>
<td>10 (37%)</td>
<td>16 (43.2%)</td>
<td>21 (51.2%)</td>
<td>21 (56.8%)</td>
<td>22 (53.7%)</td>
<td>( \chi^2(4, 90)=3.36, p=0.50 )</td>
</tr>
<tr>
<td>Contingencies that could escalate risk / reduce safety</td>
<td>1 (3.7%)</td>
<td>6 (16.2%)</td>
<td>6 (14.6%)</td>
<td>9 (24.3%)</td>
<td>11 (26.8%)</td>
<td>( \chi^2(4, 33)=7.29, p=0.12 )</td>
</tr>
<tr>
<td>Poor quality of the idea / behaviour / decision</td>
<td>6 (22.2%)</td>
<td>2 (5.4%)</td>
<td>3 (7.3%)</td>
<td>5 (13.5%)</td>
<td>6 (14.6%)</td>
<td>Not calculated(^{147})</td>
</tr>
</tbody>
</table>

\(^{147}\) Expected cell count less than five.
Because all participants stated they would not participate in dropping rocks with their friend, the whole sample were told they saw their friend drop a second rock off the bridge, the rock smashes a car windscreen, and the car stops at the side of the road. Just as there was no significant association between age and label chosen at the Culmination stage (over 90% of participants described it as seriously wrong), there was no significant associations between label choice and rationale for choosing that label. Thus, these rationales are not diplayed in table format. Thus, participants chose labels for similar reasons. In line with the Invitation stage, participants mentioned potential harm to people most frequently, followed by damage to inanimate objects.

Given that 90% of participants chose the label seriously wrong, age-based trends could only be investigated for these participants. Table 68 shows how frequently each age group used the top rationales to justify choosing the label seriously wrong. There was a significant association between age and likelihood of mentioning potential harm to people, with approximately 20% fewer eight year olds citing this compared to all other age groups. This is the only stage at which mentioning harm to people was significantly associated with age; prior to the Culmination stage age groups cited harm at relatively even rates. Mentioning that the respondent or friend could potentially receive sanctions for dropping rocks was also significantly associated with age; approximately a fifth of all age groups except for 16 year olds (n=0) justified their description of rock dropping with this reference. In fact, 16 year olds only mentioned potentially receiving sanctions in the Invitation stage, after which they did not mention sanctions again when justifying their choice of label.
Table 68. *The Association Between Age and the Top Rationales Young People Provided when Labelling the Culmination Stage of the Rock Scenario as Seriously Wrong*

<table>
<thead>
<tr>
<th></th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>$\chi^2$ (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential for harm to people (All references)</strong></td>
<td>21 (46.7%)</td>
<td>33 (71.7%)</td>
<td>32 (68.1%)</td>
<td>30 (62.2%)</td>
<td>38 (79.2%)</td>
<td>$\chi^2(4, 154)=12.03, p=0.02$</td>
</tr>
<tr>
<td>Potential damage to inanimate objects as a result of dropping rock(s) (All references)</td>
<td>20 (44.4%)</td>
<td>26 (56.5%)</td>
<td>20 (42.6%)</td>
<td>24 (52.2%)</td>
<td>28 (58.3%)</td>
<td>$\chi^2(4, 118)=3.73, p=0.44$</td>
</tr>
<tr>
<td>Reference to monetary cost of damage as a result of dropping rock(s)</td>
<td>8 (17.8%)</td>
<td>7 (15.2%)</td>
<td>15 (31.9%)</td>
<td>15 (32.6%)</td>
<td>8 (16.7%)</td>
<td>$\chi^2(4, 53)=7.90, p=0.10$</td>
</tr>
<tr>
<td><strong>Potentially receive sanctions for dropping rock(s) (All references)</strong></td>
<td>9 (20%)</td>
<td>9 (19.6%)</td>
<td>8 (17%)</td>
<td>7 (15.2%)</td>
<td>0</td>
<td>$\chi^2(4, 33)=10.60, p=0.03$</td>
</tr>
<tr>
<td>Reference to the legal system / suggestion or behaviour being illegal</td>
<td>9 (20%)</td>
<td>6 (13%)</td>
<td>5 (10.6%)</td>
<td>4 (8.7%)</td>
<td>4 (8.3%)</td>
<td>$\chi^2(4, 28)=3.92, p=0.42$</td>
</tr>
</tbody>
</table>

The master categories outlined in the Method Chapter were then utilised to look for broader trends in the above findings or trends not captured by looking at the top five rationales. Table 69 below lists the original categories included in each of the master categories. The reader is referred to the method chapter for definitions and exemplars of the master categories.
<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>Risk of harm to others</th>
<th>Morality</th>
<th>Practical Consequences</th>
<th>Social Considerations</th>
<th>Prosocial thinking / behaviour</th>
<th>Antisocial thinking / behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to the respondent or friend(^{149})</td>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with dropping rock(s) / pushing the person</td>
<td>Reference to potential victim not deserving rock(s) dropped on them or to be pushed / dropping rocks or pushing the person not justified</td>
<td>Potential damage to inanimate objects as a result of dropping rock(s) / pushing the person</td>
<td>Reference to respondent or friend experiencing positive or negative social repercussions as a result of dropping rock(s) or pushing the person</td>
<td>Contingencies that could escalate risks / reduce safety (risk aware - thinks more risky contingencies are possible)</td>
<td>Contingencies that could reduce risk / increase safety (risk naïve - thinks less risky contingencies are possible)</td>
</tr>
<tr>
<td>Potentially receive sanctions</td>
<td>Potential for harm to people (non-specific)(^{146})</td>
<td>Reference to morality as a common ideal</td>
<td>Dropping rock(s) could damage nature / trees(^{149})</td>
<td>Reference to respondent or friend peer pressuring one another</td>
<td>Responder would warn the person</td>
<td>Responder would watch their friend but not participate</td>
</tr>
<tr>
<td>Reference to respondent being wrongly implicated / blamed for dropping rock(s) / pushing the person</td>
<td>Reference to putting someone’s life at risk</td>
<td>Reference that takes the victim’s perspective</td>
<td>Mention of danger or hazard resulting from dropping the rock(s) / pushing the person</td>
<td>Reference to relationship with friend as a reason to drop or not drop rock(s) or to push / not push the person</td>
<td>Dropping rocks or pushing the person is not fun or not funny</td>
<td>Considering pushing victim into lake / victim could fall into lake(^{150})</td>
</tr>
<tr>
<td>Potentially being caught / seen by others</td>
<td>Reference to putting a human life at risk</td>
<td>Reference to dropping rock(s) / pushing the person being on the</td>
<td>Dropping rock(s) or pushing the person would inconvenience</td>
<td>Reference to teasing / bullying as a result of dropping or not</td>
<td>Reference to existing knowledge of dangers associated with</td>
<td>Reference to the type or amount of trouble the victim got the respondent</td>
</tr>
</tbody>
</table>

\(^{149}\) This is a sub-category of Potential for Harm to People
<table>
<thead>
<tr>
<th>Potential physical alteration</th>
<th>respondent or friend’s conscience</th>
<th>people / the person dropping the rock / pushing or not pushing the person into the lake</th>
<th>dropping rock(s) or pushing the person</th>
<th>in\textsuperscript{149}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people other than the respondent or friend\textsuperscript{140}</td>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>Reference to monetary cost of damage as a result of dropping rock(s) / pushing the person</td>
<td>Reference to providing assistance or alerting others</td>
<td>Justification for dropping rock(s) or pushing the person</td>
</tr>
<tr>
<td>Dropping rocks could hurt an animal\textsuperscript{149}</td>
<td>Reference to the emotional effect(s) of dropping rock(s) on victims’ loved ones</td>
<td>Dropping rocks is nasty / mean</td>
<td>Respondent would leave the scene</td>
<td>Prediction of no negative consequences from dropping rock(s) / pushing the person</td>
</tr>
<tr>
<td>Potential deadly creature in the lake\textsuperscript{150}</td>
<td>Victim’s death implied but not explicitly stated\textsuperscript{150}</td>
<td></td>
<td>Respondent stated they don’t want to be involved</td>
<td>Dropping rock(s) or pushing the person is fun or funny</td>
</tr>
</tbody>
</table>

\textsuperscript{140} This category was only used to code responses given in the Rock Scenario
\textsuperscript{150} This category was only used to code responses given in the Lake Scenario
To remain consistent with the above results, the associations between master categories and age were only run for participants who chose the label seriously wrong, as too few participants chose the other available labels to run chi square analyses. For the Invitation stage of the rock scenario, no significant associations were found between age and the risk-based master categories (risk to respondent / friend, and risk to others). Thus, these findings are not presented in table format. As Table 70 shows, a significant association was found between age and mentioning morality, with a linear age-trend evident; the likelihood of mentioning morality increased with age. This finding is consistent with the psychometric results from Socio-Moral Reflection Measure – Short Form (SRM-SF), which also saw a linear increase in the use of sociomoral reasoning with age (see aim five findings). Consistent with the minimum age of criminal responsibility being set at 10, 10 year olds were five times more likely than eight year olds to mention morality, meaning they were more able to identify the moral concerns with dropping rocks than eight year olds. However, the ability to do this continued to improve with age. Mentioning the practical consequences of dropping a rock was also significantly associated with age. Eight and 10 year olds were more likely to cite this factor compared to the older age groups, with an almost linear age-trend evident. This fits with the above finding that over 85% of eight and 10 year olds mentioned damage to inanimate objects (one of the practical consequences categories) in the Invitation stage.
Table 70. The Association Between Age and Additional Master Categories when Young People Labelled the Initial Invitation Stage of the Rock Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th>Morality Practical Consequences</th>
<th>8 yr olds n=39</th>
<th>10 yr olds n=41</th>
<th>12 yr olds n=42</th>
<th>14 yr olds n=43</th>
<th>16 yr olds n=46</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Considerations</td>
<td>1 (2.6%)</td>
<td>4 (9.8%)</td>
<td>9 (21.4%)</td>
<td>10 (23.3%)</td>
<td>15 (32.6%)</td>
<td>( \chi^2(4, 39)=15.62, p=0.004 )</td>
</tr>
<tr>
<td>Practical Consequences</td>
<td>35 (89.7%)</td>
<td>36 (87.8%)</td>
<td>30 (71.4%)</td>
<td>36 (83.7%)</td>
<td>29 (63%)</td>
<td>( \chi^2(4, 166)=13.55, p=0.009 )</td>
</tr>
<tr>
<td>Prosocial thinking / behaviour</td>
<td>3 (7.7%)</td>
<td>5 (12.2%)</td>
<td>6 (14.3%)</td>
<td>8 (18.6%)</td>
<td>11 (23.9%)</td>
<td>( \chi^2(4, 33)=4.97, p=0.29 )</td>
</tr>
<tr>
<td>Antisocial thinking / behaviour</td>
<td>1 (2.6%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (2.3%)</td>
<td>1 (2.2%)</td>
<td>Not calculated\footnote{Expected cell count less than five.}</td>
</tr>
</tbody>
</table>

In the Escalation stage where participants had declined to drop rocks (n=225), neither of the risk-based master categories were significantly associated with choosing seriously wrong, consistent with the Invitation stage. This mirrors the findings that participants mentioned harm to people at similar rates regardless of their age in both these stages. Table 71 displays the remaining master categories.
Table 71. The Association Between Age and Additional Master Categories when Young People Labelled the Escalation Stage of the Rock Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th></th>
<th>8 yr olds n=27</th>
<th>10 yr olds n=37</th>
<th>12 yr olds n=41</th>
<th>14 yr olds n=37</th>
<th>16 yr olds n=41</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morality</td>
<td>0</td>
<td>6 (16.2%)</td>
<td>6 (14.6%)</td>
<td>9 (24.3%)</td>
<td>8 (19.5%)</td>
<td>χ²(4, 29)=7.5, p=0.11</td>
</tr>
<tr>
<td>Practical Consequences</td>
<td>25 (92.6%)</td>
<td>33 (89.2%)</td>
<td>32 (78%)</td>
<td>23 (62.2%)</td>
<td>33 (80.5%)</td>
<td>χ²(4, 146)=12.00, p=0.02</td>
</tr>
<tr>
<td>Social Considerations</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 (2.7%)</td>
<td>0</td>
<td>Not calculated¹²¹</td>
</tr>
<tr>
<td>Prosocial thinking / behaviour</td>
<td>6 (22.2%)</td>
<td>3 (8.1%)</td>
<td>5 (12.2%)</td>
<td>5 (13.5%)</td>
<td>6 (14.6%)</td>
<td>χ²(4, 25)=2.75, p=0.60</td>
</tr>
<tr>
<td>Antisocial thinking / behaviour</td>
<td>0</td>
<td>1 (2.7%)</td>
<td>2 (4.9%)</td>
<td>2 (5.4%)</td>
<td>0</td>
<td>Not calculated¹²¹</td>
</tr>
</tbody>
</table>

Mentioning practical consequences was significantly associated with age. Compared to the Invitation stage, 20% fewer 14 year olds cited this factor, while approximately 80% of all other age groups mentioned practical consequences. Further, 15% more 16 year olds mentioned practical consequences compared to the Invitation stage. This change in age-based trends may indicate that practical consequences are apparent to both 14 and 16 year olds, although it is not their only consideration, while younger participants appear fixated on practical consequences, mentioning them at a similar rate compared to the Invitation stage.

In the Culmination stage, age was significantly associated with mentioning the risk of harm to others, consistent with the significant association between age and mentioning harm to people at this stage. Over 80% of 16 year olds mentioned risk of harm to others, a rate which

¹²¹ Expected cell count less than five.
is more than 10% higher compared to the next closest age group. Eight year olds mentioned risk to others at almost half the rate of 16 year olds. No further significant associations were found between age and the remaining master categories. As such, they are not presented.

Table 72. The Association Between Age and Risk-Based Master Categories when Young People Labelled the Culmination Stage of the Rock Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th></th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=45</td>
<td>n=46</td>
<td>n=47</td>
<td>n=46</td>
<td>n=48</td>
<td></td>
</tr>
<tr>
<td>Risk to respondent / friend</td>
<td>4 (8.9%)</td>
<td>6 (13%)</td>
<td>6 (12.6%)</td>
<td>4 (8.7%)</td>
<td>1 (2.1%)</td>
<td>Not calculated¹⁵³</td>
</tr>
<tr>
<td>Risk of harm to others</td>
<td>21 (46.7%)</td>
<td>34 (73.9%)</td>
<td>32 (68.1%)</td>
<td>32 (67.4%)</td>
<td>40 (83.3%)</td>
<td>χ² (4, 150)=15.37, p=0.004</td>
</tr>
</tbody>
</table>

¹⁵³ Expected cell count less than five.
Categories are bolded to distinguish them from regular categories. While green highlighting on a category name indicates a positive linear age trend, blue highlighting indicates a negative linear age trend.

Table 73. Summary of Significant Associations Between Age and Rationales Young People Provided when Justifying the Legal Label they Chose to Describe the Rock Scenario (not wrong at all, naughty, wrong, seriously wrong)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Label choice</th>
<th>Rationale</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invitation Stage</td>
<td>Seriously wrong</td>
<td>Damage to inanimate objects</td>
<td>35 (89.7%)</td>
<td>36 (87.8%)</td>
<td>27 (64.3%)</td>
<td>33 (76.7%)</td>
<td>34 (52.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Morality</td>
<td>1 (2.6%)</td>
<td>4 (9.8%)</td>
<td>9 (21.4%)</td>
<td>10 (23.3%)</td>
<td>15 (32.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practical consequences</td>
<td>35 (89.7%)</td>
<td>36 (87.8%)</td>
<td>30 (71.4%)</td>
<td>36 (83.7%)</td>
<td>29 (69.3%)</td>
</tr>
<tr>
<td>Escalation Stage</td>
<td>Seriously wrong</td>
<td>Damage to inanimate objects</td>
<td>25 (92.6%)</td>
<td>31 (83.8%)</td>
<td>31 (75.6%)</td>
<td>21 (56.8%)</td>
<td>29 (70.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practical consequences</td>
<td>25 (92.6%)</td>
<td>33 (89.2%)</td>
<td>32 (78%)</td>
<td>23 (62.2%)</td>
<td>33 (80.5%)</td>
</tr>
<tr>
<td>Culmination Stage</td>
<td>Seriously wrong</td>
<td>Harm to people</td>
<td>21 (46.7%)</td>
<td>33 (71.7%)</td>
<td>32 (68.1%)</td>
<td>30 (62.2%)</td>
<td>38 (79.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receive Sanctions</td>
<td>9 (20%)</td>
<td>9 (19.6%)</td>
<td>8 (17%)</td>
<td>7 (15.2%)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Risk of harm to others</td>
<td>21 (46.7%)</td>
<td>34 (73.9%)</td>
<td>32 (68.1%)</td>
<td>32 (67.4%)</td>
<td>40 (83.3%)</td>
</tr>
</tbody>
</table>
**Aim Eight Rock Scenario Summary**

- There was consistency in the rationales provided, with two rationales dominating every stage; possible risk of harm to people, and potential for damage to inanimate objects.
- In the Invitation stage, mentioning the potential for harm to people was associated with the label participants chose. Specifically, participants who described dropping rocks as *seriously wrong* were more likely to mention potential for harm to people.
- There were no other significant associations between label chosen and top five rationales participants used to justify their label choice. That is, participants used a similar reasoning process regardless of the label they chose.

**Aim Nine Rock Scenario Summary**

- The process young people used to label the rock scenario differed more often according to their age than their label choice. Thus, age was a better indicator of process than label choice.
- Eight and 10 year olds were consistently preoccupied with practical consequences, mentioning damage to objects at higher rates than older participants in both the Invitation and Escalation stages. Eight, 10 and 12 year olds were more concerned with getting in trouble (receiving sanctions) than older participants in the Culmination stage.
- Sixteen year olds were consistently more able to see the broader, moral implications of dropping rocks and were more likely to mention harm to people in the Culmination stage compared to younger age groups. Sixteen
year olds were the only age group not concerned with getting in trouble (receiving sanctions) after seeing their friend drop the second rock (Culmination stage).

- Twelve and 14 year olds are difficult to classify. Although they are mentioning some of the same factors as 16 year olds, they are not doing so at the same rate. They also continue to cite similar factors to younger participants also, also again not at the same rate. Thus, 12 and 14 year olds appear to be in transition in terms of how they rationalise their label choices.

Before discussing the rationales participants provided when justifying their label choices (not wrong at all, naughty, wrong, or seriously wrong) in the Lake scenario, Table 74 outlines the relevant categories used to code the below discussed qualitative responses.

<table>
<thead>
<tr>
<th>Category Name</th>
<th>Exemplars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people (All references)</td>
<td>“He could fall into the water and he maybe would probably drown”</td>
</tr>
<tr>
<td></td>
<td>“The person on the railing could die”</td>
</tr>
<tr>
<td></td>
<td>“Especially if the person can’t swim, he could drown”</td>
</tr>
<tr>
<td></td>
<td>“They could get injured”</td>
</tr>
<tr>
<td></td>
<td>“She could get concussion if she hits her head somewhere”</td>
</tr>
<tr>
<td>Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified</td>
<td>“That’s a large overreaction or consequence for him just getting me in trouble last week”</td>
</tr>
<tr>
<td></td>
<td>“They wouldn’t deserve it because it wouldn’t have been that bad a thing (that they got you in trouble for)”</td>
</tr>
<tr>
<td></td>
<td>“It’s not fair how it’s two on one”</td>
</tr>
</tbody>
</table>
| Contingencies that could escalate risk / reduce safety | “They may have done something bad to you but that doesn’t mean you have to retaliate”  
“There could be shallow water”  
“If there was rocks she could hit her head”  
“If they don’t know how to swim they could drown”  
“There could be like crocodiles or something in there, or something that could eat her” |
|---|---|
| Reference to qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person | “He might not be able to swim”  
“She could not know how to swim and she could drown”  
“He might not be a confident swimmer”  
“If the girl can swim, it’s wrong, but if it was shallow water, that would be seriously wrong”  
“It’s safer if it’s deep I suppose, assuming they can swim” |
| Pushing the person is nasty or mean | “It wouldn’t be a nice thing to do”  
“It’s just kind of mean” |
| Justification for pushing the person | “I would probably do it since he got me in trouble”  
“’He deserves it”  
“If [they got you in trouble] for something you deserve then it’s fair” |
| Reference to thought process leading up to / at the time of the offence (Intent / Motivation) | “You had a fairly decent motivation or motive, I mean morally the motivation wasn’t that great”  
“You’d probably feel ‘I’d want to get this person back’ from getting you in trouble”  
“If it was done intentionally to hurt someone the it would be wrong” |
| Mention of danger or hazard resulting from pushing the person (All references) | “There might also be rocks on the bottom so she might also get really hurt as well”  
“They say deep water but you don’t know if there’s trees or something under there”  
“You should just try to ignore it and move on”  
“It might be safer to just leave it and then you won’t get into any more trouble”  
“You should tell her that you’re there and have a conversation with her”  
“It’s so easy to not do that and just walk away” |
In the Invitation stage of the Lake scenario, participants were told they saw a girl / guy (i.e. same sex as participant) from their year level at school sitting on a railing by the edge of a lake. The girl / guy had gotten them in trouble last week, and their friend suggested they push the person into the lake. Participants were first asked to label the Invitation stage (not wrong at all, naughty, wrong, or seriously wrong). As mentioned previously, there was a significant association between age and label chosen, with 14 and 16 year olds most often choosing a label other than seriously wrong. Participants were then asked to justify the label they chose, the five most cited of which are presented in Table 75 below.
Table 75. The Association Between the Legal Label Young People Chose when Describing the Initial Invitation Stage of the Lake Scenario and the Top Rationales they Provided when Justifying their Label

<table>
<thead>
<tr>
<th>Reason</th>
<th>Overall N=245</th>
<th>Not wrong n=4</th>
<th>Naughty n=28</th>
<th>Wrong n=94</th>
<th>Seriously Wrong n=119</th>
<th>χ² (3, n=245)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potential for harm to people (All references)</td>
<td>144 (58.8%)</td>
<td>1 (25%)</td>
<td>12 (42.9%)</td>
<td>51 (54.3%)</td>
<td>80 (67.2%)</td>
<td>χ²(3, 144)=11.31, p=0.01</td>
</tr>
<tr>
<td>2 Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified</td>
<td>103 (42%)</td>
<td>1 (25%)</td>
<td>7 (25%)</td>
<td>41 (43.6%)</td>
<td>54 (45.4%)</td>
<td>χ²(3, 103)=4.45, p=0.22</td>
</tr>
<tr>
<td>3 Contingencies that could escalate risk / reduce safety</td>
<td>96 (39.2%)</td>
<td>0</td>
<td>5 (17.9%)</td>
<td>36 (38.3%)</td>
<td>55 (46.2%)</td>
<td>χ²(3, 96)=12.99, p=0.005</td>
</tr>
<tr>
<td>4 Reference to qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person</td>
<td>68 (27.8%)</td>
<td>0</td>
<td>6 (21.4%)</td>
<td>24 (25.5%)</td>
<td>38 (31.9%)</td>
<td>χ²(3, 68)=4.63, p=0.20</td>
</tr>
<tr>
<td>5 Pushing the person is nasty or mean</td>
<td>36 (14.7%)</td>
<td>0</td>
<td>4 (14.3%)</td>
<td>10 (10.6%)</td>
<td>22 (18.5%)</td>
<td>χ²(3, 36)=3.29, p=0.35</td>
</tr>
</tbody>
</table>
Potential for harm to people was what participants reported considering most often when choosing a label (mentioned by over half the sample), and had a significant association with the label chosen. A linear trend was seen in the proportion of participants mentioning harm, with participants who chose *seriously wrong* more than twice as likely to cite potential harm to people when compared to those who chose the label *not wrong at all*. While the next most cited justification was that the person sitting on the railing didn’t deserve to be pushed (cited by 42% of the sample), the next significant association was between label chosen and citing contingencies that could escalate risk or reduce safety (see Table 74 for exemplars). A linear trend was again seen here; as participants saw pushing the person as increasingly wrong, more mentioned contingencies that could escalate risk or reduce safety.

To investigate age-based trends, the top responses given by participants that chose the label *seriously wrong* were associated with age (see Table 76). Age was significantly associated with mentioning the potential victim does not deserve to be pushed into the lake/pushing the person is not justified. Again, an almost linear age trend was evident, this time with 16 year olds three times more likely to mention the victim doesn’t deserve to be pushed compared to eight year olds.
Table 76. The Association Between Age and the Top Rationales Young People Provided when Labelling the Initial Invitation Stage of the Lake Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th>Rationale</th>
<th>8 yr olds n=28</th>
<th>10 yr olds n=29</th>
<th>12 yr olds n=29</th>
<th>14 yr olds n=17</th>
<th>16 yr olds n=16</th>
<th>$\chi^2$ (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people (All references)</td>
<td>20 (71.4%)</td>
<td>23 (79.3%)</td>
<td>20 (69%)</td>
<td>10 (58.8%)</td>
<td>8 (50%)</td>
<td>$\chi^2(4, 81) = 4.91, p=0.30$</td>
</tr>
<tr>
<td>Contingencies that could escalate risk / reduce safety</td>
<td>10 (35.7%)</td>
<td>14 (48.3%)</td>
<td>18 (62.1%)</td>
<td>7 (41.2%)</td>
<td>7 (43.8%)</td>
<td>$\chi^2(4, 56) = 4.39, p=0.36$</td>
</tr>
<tr>
<td>Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified</td>
<td>7 (25%)</td>
<td>10 (34.5%)</td>
<td>14 (48.3%)</td>
<td>11 (64.7%)</td>
<td>12 (75%)</td>
<td>$\chi^2(4, 54) = 14.40, p=0.006$</td>
</tr>
<tr>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person</td>
<td>4 (14.3%)</td>
<td>9 (31%)</td>
<td>14 (48.3%)</td>
<td>6 (35.3%)</td>
<td>6 (37.5%)</td>
<td>$\chi^2(4, 39) = 7.76, p=0.10$</td>
</tr>
<tr>
<td>Pushing the person is nasty or mean</td>
<td>3 (10.7%)</td>
<td>6 (20.7%)</td>
<td>7 (24.1%)</td>
<td>4 (23.5%)</td>
<td>2 (12.5%)</td>
<td>$\chi^2(4, 22) = 2.50, p=0.65$</td>
</tr>
</tbody>
</table>

Age-based trends were then investigated in the rationales participants provided when justifying choosing the label *wrong*. However, there were no significant age trends, indicating that participants chose the label *wrong* for similar reasons, regardless of their age. Same four top rationales as above.
Although 28 participants chose the label *naughty*, when the rationales they provided for choosing this label were broken down by age, age-trends were unable to be calculated due to cell sizes less than five. These participants also mentioned harm most frequently, followed by damage to objects, and justifying pushing the person into the lake.

The 23 participants who initially stated they would go with their friend to push the person in the Invitation stage, and the 12 participants that said they would be convinced to push the person (Coercion stage) were then told they saw a *Deep Water* sign while approaching the person on the railing. As mentioned, the association between age and label choice could not be calculated due to expected cell count less than five (see aim seven). The top three justifications for labelling the Escalation stage were: potential for people to be harmed, mentioning the qualities or abilities of the victim that would increase or decrease the risk associated with pushing them in (most often swimming ability), and mentioning contingencies that could escalate risk or reduce safety. However, due to expected cell count less than five, only the associations between label choice and the top two rationales could be calculated, both of which were non-significant. That is, participants mentioned the potential for people to be harmed and the qualities of abilities of the victim at similar rates, regardless of their label choice. In terms of age-based trends, only the association between age and the potential for harm to people could be calculated, and was also not significant. Thus, participants made reference to the harm pushing the person into the lake could cause, regardless of their label choice or age.

In the alternate Escalation Stage, where participants reported choosing not to go with their friend to push the person, they were told they saw their friend walk up behind the person on the railing and noticed the *Deep Water* sign. As
previously mentioned, there was no significant association between age and label chosen, with 80% of participants describing pushing the person as *seriously wrong* after seeing the *Deep Water* sign, compared to just under 50% at the Invitation stage (where the association was significant). Unlike the Invitation stage, there were no significant associations between label choice and justification for that label, indicating that participants utilised a similar process when choosing different labels. However, mentioning qualities or abilities of the victim that could increase or decrease the risk associated with pushing them (most often their swimming ability) was close to being significantly associated with label. Participants who labelled the Escalation stage *wrong* were most likely to mention this reason, followed by participants who described pushing the person as *seriously wrong*.

Age-based trends were then investigated by breaking the sample up by their label choice. Table 77 shows how the participants who labelled the Escalation stage *seriously wrong* justified this label choice. Mentioning potential harm to people was not significantly associated with age, with approximately 70 to 85% of all age groups citing this factor. It is noteworthy that participants mentioned harm at a similar rate in the previous Escalation stage. Referencing the qualities or abilities of the victim that could increase or decrease the risk associated with pushing them (most often the victim’s swimming ability), was significantly associated with age. Participants aged 10 and over cited this rationale approximately two to three times more often than eight year olds did. Age was also significantly associated with mentioning the potential dangers and/or hazards associated with pushing the person, with the use of this justification linearly increasing with age, and 16 year olds providing this justification at almost six times the rate of eight year olds.
Table 77. The Association Between Age and the Top Rationales Young People Provided when Labelling the Escalation Stage of the Lake Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th>Rationale</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people (All references)</td>
<td>24 (70.6%)</td>
<td>32 (86.5%)</td>
<td>29 (74.4%)</td>
<td>23 (79.3%)</td>
<td>20 (69%)</td>
<td>χ² (4, 128)= 3.81, p=0.43</td>
</tr>
<tr>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person</td>
<td>8 (23.5%)</td>
<td>17 (45.9%)</td>
<td>20 (51.3%)</td>
<td>18 (62.1%)</td>
<td>20 (69%)</td>
<td>χ² (4, 83)= 15.64, p=0.004</td>
</tr>
<tr>
<td>Contingencies that could escalate risk / reduce safety</td>
<td>12 (35.3%)</td>
<td>15 (40.5%)</td>
<td>20 (51.3%)</td>
<td>16 (55.2%)</td>
<td>17 (58.6%)</td>
<td>χ² (4, 80)= 5.09, p=0.28</td>
</tr>
<tr>
<td>Mention of danger or hazard resulting from pushing the person (All references)</td>
<td>2 (5.9%)</td>
<td>4 (10.8%)</td>
<td>6 (15.4%)</td>
<td>9 (31%)</td>
<td>10 (34.5%)</td>
<td>χ² (4, 31)= 13.25, p=0.01</td>
</tr>
<tr>
<td>Victim’s death implied but not explicitly stated</td>
<td>3 (8.8%)</td>
<td>4 (10.8%)</td>
<td>6 (15.4%)</td>
<td>7 (24.1%)</td>
<td>4 (13.8%)</td>
<td>Not calculated</td>
</tr>
</tbody>
</table>

The age-based trends seen in the rationales participants that chose the label wrong were then investigated. As Table 78 below shows, age was significantly associated with mentioning qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person (swimming ability) when justifying choosing the label wrong. Looking at the exemplars, participants often stated that because the lake was deep, pushing the person would only be wrong rather than seriously wrong, if they victim could swim. Mentioning the

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154 Expected cell count less than five.
dangers or hazards associated with pushing the person was also significantly associated with age, and citing this factor linearly increased with age. Thus, participants identified dangers and hazards more frequently as age increased.

Table 78. The Association Between Age and the Top Rationales Young People Provided when Labelling the Escalation Stage of the Lake Scenario as Wrong

<table>
<thead>
<tr>
<th>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person</th>
<th>8 yr olds n=6</th>
<th>10 yr olds n=6</th>
<th>12 yr olds n=7</th>
<th>14 yr olds n=8</th>
<th>16 yr olds n=10</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people (All references)</td>
<td>1 (16.7%)</td>
<td>5 (83.3%)</td>
<td>7 (100%)</td>
<td>7 (87.5%)</td>
<td>5 (50%)</td>
<td>( \chi^2 (4, 25) = 14.00, p=0.007 )</td>
</tr>
<tr>
<td>Contingencies that could escalate risk / reduce safety</td>
<td>5 (83.3%)</td>
<td>3 (50%)</td>
<td>6 (85.7%)</td>
<td>2 (25%)</td>
<td>6 (60%)</td>
<td>Not calculated</td>
</tr>
<tr>
<td>Contingencies that could reduce risk / increase safety</td>
<td>3 (50%)</td>
<td>3 (50%)</td>
<td>1 (14.3%)</td>
<td>5 (62.5%)</td>
<td>3 (30%)</td>
<td>Not calculated</td>
</tr>
<tr>
<td>Victim’s death implied but not explicitly stated</td>
<td>0</td>
<td>1 (16.7%)</td>
<td>0</td>
<td>2 (25%)</td>
<td>5 (50%)</td>
<td>Not calculated</td>
</tr>
<tr>
<td></td>
<td>1 (16.7%)</td>
<td>2 (33.3%)</td>
<td>1 (14.3%)</td>
<td>3 (37.5%)</td>
<td>1 (10%)</td>
<td>Not calculated</td>
</tr>
</tbody>
</table>

\(^{155}\) Expected cell count less than five
Of the 35 participants who initially approached the person on the railing, 12 reported they would continue to approach the person with their friend after seeing the *Deep Water* sign (Culmination stage). After pushing the person into the lake with their friend, seeing the person in the water and hearing them say they can’t swim, participants were asked to choose a label (*not wrong at all*, *naughty*, *wrong*, or *seriously wrong*). However, the association between age and label choice could not be investigated due to small sample size. Small sample size also meant that the association between label choice or age and the justifications participants gave for choosing the above labels could not be calculated. Mentioning the qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person was cited by over 90% of the sample (11 participants). The next most cited rationale was potential harm to people, although only five participants mentioned this, followed by mentioning putting someone’s life at risk.

In the alternate Culmination Stage, 232 participants had opted not to participate, and instead watched their friend push the person into the lake. There was no significant association between age and label chosen, with over 90% of participants describing the vignette as *seriously wrong*. Table 79, below shows the top rationales participants gave for labelling the Culmination stage.
Table 79. The Association Between the Legal Label Young People (Who Didn’t Push the Person) Chose when Describing the Culmination Stage and the Top Rationales they Provided when Justifying their Label

<table>
<thead>
<tr>
<th>Reason</th>
<th>Overall N=232</th>
<th>Naughty n=5</th>
<th>Wrong n=13</th>
<th>Seriously Wrong n=214</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potential for harm to people (All references)</td>
<td>175 (75.4%)</td>
<td>2 (40%)</td>
<td>7 (33.8%)</td>
<td>166 (77.6%)</td>
<td>χ² (2, 175)=7.18, p=0.03</td>
</tr>
<tr>
<td>2 Reference to qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person</td>
<td>158 (68.1%)</td>
<td>4 (80%)</td>
<td>11 (84.6%)</td>
<td>143 (66.8%)</td>
<td>χ² (2, 158)=2.12, p=0.35</td>
</tr>
<tr>
<td>3 Contingencies that could escalate risk / reduce safety</td>
<td>41 (17.7%)</td>
<td>1 (20%)</td>
<td>2 (15.4%)</td>
<td>38 (17.8%)</td>
<td>χ² (2, 41)=0.07, p=0.97</td>
</tr>
<tr>
<td>4 Reference to thought process leading up to / at the time of the offence (Intent / Motivation)</td>
<td>30 (12.9%)</td>
<td>1 (20%)</td>
<td>3 (23.1%)</td>
<td>26 (12.1%)</td>
<td>χ² (2, 30)=0.53, p=0.47</td>
</tr>
<tr>
<td>5 Reference to putting someone’s life at risk</td>
<td>28 (12.1%)</td>
<td>0</td>
<td>0</td>
<td>28 (13.1%)</td>
<td>χ² (2, 28)=2.68, p=0.26</td>
</tr>
</tbody>
</table>
As with the Invitation stage, there was a significant association between label choice and mentioning harm to people, with proportionately more participants who described the vignette as *seriously wrong* mentioning harm, followed by those who described it as *wrong* then *naughty*. That is, the more wrong participants saw pushing the person, the more likely they were to mention the potential for harm. The remaining top rationales were cited at similar rates by the age groups, thus no further significant associations were found.

Because most participants labelled the Culmination stage *seriously wrong*, age-based trends could only be investigated for the young people that chose this label. Table 80 below shows the top rationalisations participants gave for choosing the label *seriously wrong*, as divided by age group. The top three rationales were not significantly associated with age, although mentioning harm to people approached significance, with 14 year olds mentioning harm 10-20% less than the other age groups. Age was significantly associated with mentioning the risk to the victim’s life, with the use of this rationale increasing linearly with age. In fact, almost 35% of 16 year olds mentioned the risk to the victim’s life, while no eight year olds cited this justification. Mentioning that the victim did not deserve to be pushed into the lake was also significantly associated with age. Although the age-trend was not linear, 16 year olds were more than two times more likely to cite this factor compared to 14 year olds and almost 15 times more likely to cite it compared to eight year olds.
Table 80. The Association Between Age and the Top Rationales Young People Provided when Labelling the Culmination Stage of the Lake Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th>Rationale</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to people (All references)</td>
<td>32 (74.4%)</td>
<td>35 (83.3%)</td>
<td>41 (87.2%)</td>
<td>36 (63.4%)</td>
<td>32 (78%)</td>
<td>χ²(4, 166)= 8.30, p=0.08</td>
</tr>
<tr>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person</td>
<td>29 (67.4%)</td>
<td>26 (61.9%)</td>
<td>32 (68.1%)</td>
<td>31 (75.6%)</td>
<td>25 (61%)</td>
<td>χ²(4, 143)= 2.56, p=0.63</td>
</tr>
<tr>
<td>Contingencies that could escalate risk / reduce safety</td>
<td>4 (9.3%)</td>
<td>8 (19%)</td>
<td>11 (23.4%)</td>
<td>8 (19.5%)</td>
<td>7 (17.1%)</td>
<td>χ²(4, 38)= 3.28, p=0.51</td>
</tr>
<tr>
<td>Reference to putting someone’s life at risk</td>
<td>0</td>
<td>1 (2.4%)</td>
<td>6 (12.8%)</td>
<td>7 (17.1%)</td>
<td>14 (34.1%)</td>
<td>χ²(4, 28)= 27.28, p&lt;0.001</td>
</tr>
<tr>
<td>Reference to thought process leading up to / at the time of the offence (Intent / Motivation)</td>
<td>3 (7%)</td>
<td>5 (11.9%)</td>
<td>4 (8.5%)</td>
<td>4 (9.8%)</td>
<td>10 (24.4%)</td>
<td>χ²(4, 26)= 7.64, p=0.11</td>
</tr>
<tr>
<td>Reference to potential victim not deserving to be pushed into lake / Pushing victim into lake not justified</td>
<td>1 (2.3%)</td>
<td>3 (7.1%)</td>
<td>2 (4.3%)</td>
<td>6 (14.6%)</td>
<td>14 (34.1%)</td>
<td>χ²(4, 26)= 26.44, p&lt;0.001</td>
</tr>
</tbody>
</table>
In order to summarise the above findings, as well as illuminate trends not seen in participants' top responses, participants' responses were coded into master categories for each of the above discussed questions. Table 81 lists the original categories that made up the Master Categories. The reader is referred to the Method Chapter for definitions and corresponding exemplars of the Master Categories.

Table 81. List of Original Categories Included in the Master Categories

<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>Risk of harm to others</th>
<th>Morality</th>
<th>Practical Consequences</th>
<th>Social Considerations</th>
<th>Prosocial thinking / behaviour</th>
<th>Antisocial thinking / behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for harm to the respondent or friend(^{156})</td>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with dropping rock(s) / pushing the person</td>
<td>Reference to potential victim not deserving rock(s) dropped on them or to be pushed / dropping rocks or pushing the person not justified</td>
<td>Potential damage to inanimate objects as a result of dropping rock(s) / pushing the person</td>
<td>Reference to respondent or friend experiencing positive or negative social repercussions as a result of dropping rock(s) or pushing the person</td>
<td>Contingencies that could escalate risks / reduce safety (risk aware - thinks more risky contingencies are possible)</td>
<td>Contingencies that could reduce risk / increase safety (risk naïve - thinks less risky contingencies are possible)</td>
</tr>
<tr>
<td>Potentially receive sanctions</td>
<td>Potential for harm to people (non-specific)(^{156})</td>
<td>Reference to morality as a common ideal</td>
<td>Dropping rock(s) could damage nature / trees(^{157})</td>
<td>Reference to respondent or friend peer pressuring one another</td>
<td>Respondent would warn the person</td>
<td>Respondent would watch their friend but not participate</td>
</tr>
<tr>
<td>Reference to respondent being</td>
<td>Reference to putting someone's</td>
<td>Reference that takes the victim's</td>
<td>Mention of danger or hazard resulting</td>
<td>Reference to relationship with</td>
<td>Dropping rocks or pushing the person</td>
<td>Considering pushing victim into</td>
</tr>
</tbody>
</table>

\(^{156}\) This is a sub-category of Potential for Harm to People
<table>
<thead>
<tr>
<th>Description</th>
<th>Perspective</th>
<th>Reference to dropping rock(s) or pushing the person</th>
<th>Reference to existing knowledge of dangers associated with dropping rock(s) or pushing the person</th>
<th>Justification for dropping rock(s) or pushing the person</th>
<th>Prediction of no negative consequences from dropping rock(s) or pushing the person</th>
</tr>
</thead>
<tbody>
<tr>
<td>wrongly implicated / blamed for dropping rock(s) / pushing the person</td>
<td>life at risk</td>
<td>friend as a reason to drop or not drop rock(s) or to push / not push the person</td>
<td>Reference to teasing / bullying as a result of dropping rock(s) or pushing the person into the lake</td>
<td>Reference to the type or amount of trouble the victim got the respondent in</td>
<td>Reference to dropping rock(s) or pushing the person is fun or funny</td>
</tr>
<tr>
<td>Potentially being caught / seen by others</td>
<td>Reference to putting a human life at risk</td>
<td>Dropping rock(s) or pushing the person would inconvenience people / the person</td>
<td>Reference to existing knowledge of dangers associated with dropping rock(s) or pushing the person into the lake</td>
<td>Reference to the type or amount of trouble the victim got the respondent in</td>
<td>Reference to dropping rock(s) or pushing the person is fun or funny</td>
</tr>
<tr>
<td>Potential physical altercation</td>
<td>Potential for harm to people other than the respondent or friend</td>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
<td>Reference to monetary cost of damage as a result of dropping rock(s) or pushing the person</td>
<td>Reference to providing assistance or alerting others</td>
<td>Reference to dropping rock(s) or pushing the person is fun or funny</td>
</tr>
<tr>
<td></td>
<td>Dropping rocks could hurt an animal</td>
<td>Reference to the emotional effect(s) of dropping rock(s) on victims’ loved ones</td>
<td>Reference to existing knowledge of dangers associated with dropping rock(s) or pushing the person into the lake</td>
<td>Reference to the type or amount of trouble the victim got the respondent in</td>
<td>Reference to dropping rock(s) or pushing the person is fun or funny</td>
</tr>
<tr>
<td></td>
<td>Potential deadly creature in the lake</td>
<td>Dropping rocks is nasty / mean</td>
<td>Reference to existing knowledge of dangers associated with dropping rock(s) or pushing the person into the lake</td>
<td>Reference to the type or amount of trouble the victim got the respondent in</td>
<td>Reference to dropping rock(s) or pushing the person is fun or funny</td>
</tr>
<tr>
<td></td>
<td>Victim’s death</td>
<td></td>
<td>Reference to existing knowledge of dangers associated with dropping rock(s) or pushing the person into the lake</td>
<td>Reference to the type or amount of trouble the victim got the respondent in</td>
<td>Reference to dropping rock(s) or pushing the person is fun or funny</td>
</tr>
</tbody>
</table>

157 This category was only used to code responses given in the Rock Scenario
158 This category was only used to code responses given in the Lake Scenario
To remain consistent with the above findings, and to meet minimum cell requirements, age-based trends in the master categories were only calculated when enough participants had chosen that label to meet minimum cell requirements (at least 25 participants). Thus, age-based trends in the master categories are first presented for participants that labelled the Invitation stage seriously wrong. In the Invitation stage of the lake scenario, age was significantly associated with participants mentioning risks to themselves or their friend. Over 50% of eight, 10 and 12 year olds mentioned this factor, while less than a quarter of 14 year olds and under 10% of 16 year olds mentioned it. There were no significant associations found between age and the remaining master categories thus, they are not presented in table format.

Table 82. The Association Between Age and Risk-Based Master Categories when Young People Labelled the Invitation Stage of the Lake Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th></th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>$\chi^2$ (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=28</td>
<td>n=29</td>
<td>n=29</td>
<td>n=17</td>
<td>n=16</td>
<td></td>
</tr>
<tr>
<td>Risk to respondent / friend</td>
<td>15 (53.6%)</td>
<td>18 (62.1%)</td>
<td>15 (51.7%)</td>
<td>4 (23.5%)</td>
<td>1 (6.3%)</td>
<td>$\chi^2 (4, 53)=17.67, p=0.001$</td>
</tr>
<tr>
<td>Risk of harm to others</td>
<td>5 (17.9%)</td>
<td>10 (34.5%)</td>
<td>8 (27.6%)</td>
<td>4 (23.5%)</td>
<td>4 (25%)</td>
<td>$\chi^2 (4, 31)=2.15, p=0.71$</td>
</tr>
</tbody>
</table>
Age-based trends in the master categories were then investigated for the 94 participants that labelled the Invitation stage wrong. As Table 82 shows, age was again significantly associated with mentioning risk to self / others for participants that chose the label wrong. The age trend was not linear, with over half the 12 year olds mentioning risk to themselves or their friend, followed by eight year olds, 10 year olds, 14, and then 16 year olds. Twelve year olds mentioned the risk to themselves or their friend at almost six times the rate of 16 year olds. No other significant associations were found between age and the remaining master categories, so they are not presented below.

Table 83. The Association Between Age and Risk-Based Master Categories when Young People Labelled the Invitation Stage of the Lake Scenario as Wrong

<table>
<thead>
<tr>
<th>Risk to respondent / friend</th>
<th>8 yr olds (n=14)</th>
<th>10 yr olds (n=13)</th>
<th>12 yr olds (n=19)</th>
<th>14 yr olds (n=20)</th>
<th>16 yr olds (n=28)</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of harm to others</td>
<td>2 (14.3%)</td>
<td>4 (30.8%)</td>
<td>8 (42.1%)</td>
<td>5 (25%)</td>
<td>10 (35.7%)</td>
<td>χ²(4, 29)=13.10, p=0.01</td>
</tr>
</tbody>
</table>

Although 35 participants stated they would accompany their friend to push the person initially, there was insufficient cell count to calculate the associations between the master categories and age. While the spread of responses is not provided in table format, it is noteworthy that the most popular master category was mentioning risk of harm to others, with over 85% of all age groups mentioning this. This is consistent with the top rationale of that Escalation stage being harm to others.
In the alternate Escalation stage, participants were again separated by their label choice before age-based trends in the master categories were calculated. Consistent with the previous Escalation stage, the most cited master category was risk of harm to others, just as the most cited general category was mentioning harm to others. Of the participants that labelled the Escalation stage seriously wrong, there were no age-based trends in the risk-based master categories. As such, these findings are not shown below. Table 84 shows the age-based trends for the remaining master categories. Mentioning practical consequences was significantly associated with age, and a linear age trend was evident; as age increased, so did mentioning practical consequences.

Table 84. The Association Between Age and Additional Master Categories when Young People Labelled the Escalation Stage of the Lake Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th>Category</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>( \chi^2 ) (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morality</strong></td>
<td>2 (5.9%)</td>
<td>4 (10.8%)</td>
<td>5 (12.8%)</td>
<td>5 (17.2%)</td>
<td>4 (13.8%)</td>
<td>Not calculated^159</td>
</tr>
<tr>
<td><strong>Practical Consequences</strong></td>
<td>3 (8.8%)</td>
<td>4 (10.8%)</td>
<td>8 (20.5%)</td>
<td>9 (31%)</td>
<td>10 (34.5%)</td>
<td>( \chi^2 (4, 34)=10.52, p=0.03 )</td>
</tr>
<tr>
<td><strong>Social Considerations</strong></td>
<td>0</td>
<td>1 (2.7%)</td>
<td>1 (2.6%)</td>
<td>1 (3.4%)</td>
<td>0</td>
<td>Not calculated^159</td>
</tr>
<tr>
<td><strong>Prosocial thinking / behaviour</strong></td>
<td>12 (35.3%)</td>
<td>15 (40.5%)</td>
<td>20 (51.3%)</td>
<td>17 (58.6%)</td>
<td>19 (65.5%)</td>
<td>( \chi^2 (4, 83)=7.92, p=0.09 )</td>
</tr>
<tr>
<td><strong>Antisocial thinking / behaviour</strong></td>
<td>1 (2.9%)</td>
<td>0</td>
<td>0</td>
<td>4 (13.8%)</td>
<td>2 (6.9%)</td>
<td>Not calculated^159</td>
</tr>
</tbody>
</table>

^159 Expected cell count less than five.
Because only 35 participants labelled the Escalation stage wrong, mentioning risk to others was the only master category with sufficient cell count to be calculated. However, the association between risk to others and age was not significant, and therefore not presented in table format. Only 12 participants progressed to the Culmination stage maintaining they would push the person into the lake. This meant there was insufficient cell count to calculate the association between age and the master categories for this Culmination stage. In the alternate Culmination stage, the associations between age and master categories were calculated for participants that labelled pushing the person seriously wrong. Again, age was not significantly associated with the risk-based master categories (risk to respondent / friend, and risk to others), so Table 85 below shows only the associations between age and the remaining master categories.
Table 8.5. The Association Between Age and Additional Master Categories when Young People Labelled the Culmination Stage of the Lake Scenario as Seriously Wrong

<table>
<thead>
<tr>
<th></th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
<th>χ² (df, n)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=43</td>
<td>n=42</td>
<td>n=47</td>
<td>n=41</td>
<td>n=41</td>
<td></td>
</tr>
<tr>
<td>Morality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical Consequences</td>
<td>2 (4.7%)</td>
<td>6 (14.3%)</td>
<td>2 (4.3%)</td>
<td>4 (9.8%)</td>
<td>3 (7.3%)</td>
<td>Not calculated (^{160})</td>
</tr>
<tr>
<td>Social Considerations</td>
<td>1 (2.3%)</td>
<td>1 (2.4%)</td>
<td>4 (8.5%)</td>
<td>2 (4.9%)</td>
<td>1 (2.4%)</td>
<td>Not calculated (^{160})</td>
</tr>
<tr>
<td>Prosocial thinking / behaviour</td>
<td>4 (9.3%)</td>
<td>9 (21.4%)</td>
<td>11 (23.4%)</td>
<td>8 (19.5%)</td>
<td>7 (17.1%)</td>
<td>χ²(4, 39)=3.51 p=0.48</td>
</tr>
<tr>
<td>Antisocial thinking / behaviour</td>
<td>2 (4.7%)</td>
<td>1 (2.4%)</td>
<td>4 (8.5%)</td>
<td>5 (12.2%)</td>
<td>2 (4.9%)</td>
<td>Not calculated (^{160})</td>
</tr>
</tbody>
</table>

\(^{160}\) Expected cell count less than five
Mentioning morality was significantly associated with age, with a linear age trend evident; citing morality increased with age. Specifically, 16 year olds were over 10 times more likely to cite morality compared to eight year olds, a much higher rate compared to the Invitation stage. Coinciding with the minimum age of criminal responsibility, 10 year olds are almost five times more likely than eight year olds to mention morality. This finding is also consistent with the psychometric findings seen in aim five; that sociomoral reasoning ability increases linearly with age. Similar to the master category findings of the Invitation stage, the association between mentioning morality and age was not captured in the top five rationales of the Culmination stage.

Table 86 below collates the significant associations found between age and the rationales participants provided to justify their choice of label throughout the rock scenario. Only the Escalation stage with sufficient sample size is included in the below table, and the age groups that were most likely to mention the category are highlighted in orange. If more than one age group is highlighted, they mentioned that category at a similarly high rate, within 5% of the age group that cited that factor the most. Age groups highlighted in yellow mentioned that factor at a rate within 10% of the age groups that cited that factor the most. This table does not highlight significant differences (as chi square analyses cannot make such claims), but rather is a visual representation of age groups that cited these factors at similarly high rates. Master Categories are bolded to distinguish them from regular categories. While green highlighting on a category name indicates a positive linear age trend, blue highlighting indicates a negative linear age trend.
Table 86. Summary of Significant Associations Between Age and Rationales Young People Provided when Justifying the Legal Label they Chose to Describe the Lake Scenario (not wrong at all, naughty, wrong, seriously wrong)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Label choice</th>
<th>Rationale</th>
<th>8 yr olds</th>
<th>10 yr olds</th>
<th>12 yr olds</th>
<th>14 yr olds</th>
<th>16 yr olds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Invitation</strong> Stage</td>
<td><strong>Seriously wrong</strong></td>
<td>Qualities/abilities of the victim</td>
<td>7 (25%)</td>
<td>10 (34.5%)</td>
<td>14 (48.3%)</td>
<td>11 (64.7%)</td>
<td>12 (75%)</td>
</tr>
<tr>
<td></td>
<td>Risk to respondent/friend</td>
<td>15 (53.6%)</td>
<td>18 (62.1%)</td>
<td>15 (51.7%)</td>
<td>4 (23.5%)</td>
<td>1 (6.3%)</td>
<td></td>
</tr>
<tr>
<td><strong>Wrong</strong></td>
<td>Risk to respondent/friend</td>
<td>6 (42.9%)</td>
<td>4 (30.8%)</td>
<td>11 (57.9%)</td>
<td>5 (25%)</td>
<td>3 (10.7%)</td>
<td></td>
</tr>
<tr>
<td><strong>Escalation</strong> Stage</td>
<td><strong>Seriously wrong</strong></td>
<td>Qualities/abilities of the victim</td>
<td>8 (23.5%)</td>
<td>17 (45.9%)</td>
<td>20 (51.3%)</td>
<td>18 (62.1%)</td>
<td>20 (69%)</td>
</tr>
<tr>
<td></td>
<td>Practical Consequences</td>
<td>3 (8.8%)</td>
<td>4 (10.8%)</td>
<td>8 (20.5%)</td>
<td>9 (31%)</td>
<td>10 (34.5%)</td>
<td></td>
</tr>
<tr>
<td><strong>Wrong</strong></td>
<td>Qualities/abilities of the victim</td>
<td>1 (16.7%)</td>
<td>5 (83.3%)</td>
<td>7 (100%)</td>
<td>7 (87.5%)</td>
<td>5 (50%)</td>
<td></td>
</tr>
<tr>
<td><strong>Culmination</strong> Stage</td>
<td><strong>Seriously wrong</strong></td>
<td>Putting someone’s life at risk</td>
<td>0</td>
<td>1 (2.4%)</td>
<td>6 (12.8%)</td>
<td>7 (17.1%)</td>
<td>14 (34.1%)</td>
</tr>
<tr>
<td></td>
<td>Victim didn’t deserve to be pushed/pushing victim into lake not justified</td>
<td>1 (2.3%)</td>
<td>3 (7.1%)</td>
<td>2 (4.3%)</td>
<td>6 (14.6%)</td>
<td>14 (34.1%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Morality</td>
<td>2 (4.7%)</td>
<td>9 (21.4%)</td>
<td>12 (25.5%)</td>
<td>14 (34.1%)</td>
<td>20 (48.8%)</td>
<td></td>
</tr>
</tbody>
</table>
Aim Eight Lake Scenario Summary

- Participants’ choice of label (not wrong at all, naughty, wrong, or seriously wrong) varied according to the process they reported using to choose that label more often than in the rock scenario. That is, participants thought about different factors depending on the label they chose.

- In both the Invitation and Culmination stages, mentioning harm to people was significantly associated with label choice; as participants’ label choice became increasingly “wrong”, this rationale was mentioned more often. Mentioning contingencies that could increase risk or reduce safety in the Invitation stage also increased with level of label “wrongness”. In the Escalation stage, mentioning the qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person (most often swimming ability) was also significantly associated with label choice, and was most often cited by participants who labelled the Escalation stage wrong.

- Despite these above examples where label choice was associated with differences in process, participants most often used the same process to choose different labels.

Aim Nine Lake Scenario Summary

- The process young people used to label the rock scenario differed more often according to their age than their label choice. Thus, age was a better indicator of process than label choice.

- Many of the significant associations between age and rationale were linear, meaning that participants increasingly cited these factors with age. Thus, 16
year olds stood out as being the age group most able to justify their label choice using broad factors that demonstrated they were able to think consequentially and abstractly about the scenario. Such factors included mentioning the morality of the situation, the qualities of the victim (swimming ability) that may have increased or decreased the risk of pushing them into the lake, that the victim didn’t deserve to be pushed, and that the victim’s life was at risk.

- The rationales 14 year olds provided demonstrated some of the same maturity seen in the 16 year olds' rationales, including the qualities and abilities (usually swimming ability) of the victim that may increase or decrease the risk of pushing them into the lake, and the practical consequences of pushing the person. However, 14 year olds were at times self-referential, mentioning the risks to themselves or their friend at higher rates than the other age groups in the Invitation stage.

- Younger age groups (eight to 12 year olds) stood out as mentioning these broader, more abstract factors less frequently than older age groups, although they did mention the risks to themselves and their friend at higher rates in the Invitation stage than older age groups.

Overall Summary Aim Eight and Nine

- Participants gave a wider variety of justifications in the lake scenario compared to the rock scenario, which was dominated by two justifications.

- There was a trend towards younger participants being more self-referential and concrete in the rationales they provided. Eight year olds were most
consistently like this, with 10 and 12 year olds less consistently being self-referential and concrete.

• There was a trend towards older age groups being more abstract and mentioning rationales that showed a consideration of the broad consequences. Again, the ages at which this was true varied, with 16 year olds being consistently like this, and 14 and 12 year olds showing evidence of being abstract or thinking more broadly.

• Eight year olds stood out as mentioning significantly fewer justifications for their label choice.

Before providing an overall summary of the results, Figure 20 gives a pictorial representation of the aims investigated in this chapter.
Figure 20. Pictorial Representation of the Variables Included and Aims Investigated in the Present Study

**Decision outcome:** Reported decision to drop the rock or not, or push the person or not (*Actus reus*)

**Decision process:** Reasons young people gave for decision to drop rock or not and push the person or not

**Psychometric measures:** decision making, anti-social decision making, moral judgement, moral reasoning in violent situations

**Age:** 8, 10, 12, 14, and 16 year olds

**Moral outcome:** Choosing a legal labels from Not wrong at all, Naughty, Wrong, Seriously Wrong

**Moral process:** Reasons young people gave for choosing the legal label not wrong at all/naughty/wrong/seriously wrong
Summary of Results

For obvious reasons, young people only enter the justice system if they commit an offence. Because this thesis gave participants the option of reporting they would engage in potentially risky behaviour (dropping rocks or pushing a person into the lake), the differences between individuals who would and would not participate were investigated. Initially, the association between age and decision to engage rock dropping or pushing the person was investigated.

- Overall, small numbers of participants reported they would participate in either dropping rocks or pushing the person into the lake, with the majority declining to participate. This meant meaningful comparisons were unable to be made between participants who reported they would participate and those who would not.

- In the rock scenario, over 85% of all age groups reported they would not participate in dropping rocks at every stage. Thus, the decision to (not) participate by dropping rocks was consistent across age groups.

- In the lake scenario, there was age-based variation in participants’ reported decision to push the person into the lake. Specifically, more 14 and 16 year olds initially reported they would push the person into the lake compared to eight to 12 year olds (Invitation stage). Of the participants that initially reported they would not push the person into the lake, eight year olds were the most easily coerced by their friend, agreeing to participate at two or more times the rate of the other age groups.

How participants reported making the decision to engage in rock dropping or pushing the person into the lake (or not) was then investigated. Whether there was an association between young people’s reported decision and the factors they
stated informed that decision (whether different outcomes were associated with different processes) was initially addressed.

- Participants reported considering different factors depending on their reported decision to drop rocks or push the person into the lake.
- In the Invitation stage of the rock scenario, participants that reported they wouldn’t go with their friends to drop were more likely to report thinking about getting in trouble (receiving sanctions), while those who said they would go reported thinking about peer pressuring their friend into not dropping rocks\textsuperscript{161}.
- In the lake scenario, young people that initially declined to push the person reported thinking pushing the person was immoral or wrong and that the person did not deserve to be pushed into the lake. After their friend tried to convince them to push the person, they reported considering the same factors regardless of their decision to participate or not.

It was then investigated whether the process young people used when deciding to drop rocks and push the person into the lake was associated with age. To ensure that the age-based trends were not confounded, participants were separated by their reported decision before age-based trends were calculated.

- Because few young people reported they would drop rocks or push the person, age-trends could only be calculated for participants that stated they would not participate. Overall, different age groups reported using different reasoning processes when making the decision not to drop rocks or push the person.

\textsuperscript{161} Because no participants were coerced by their friend or agreed to drop a rock themselves, differences in process were unable to be investigated past the Invitation stage.
• In the rock scenario, participants of all ages reported making the decision not to drop rocks in similar ways. However, master category findings indicated 10 and 12 year olds thought about the risks to themselves or their friend more frequently than other age groups, and 16 year olds reported more prosocial thinking than other age groups. All participants declined to drop rocks after their friend tried to convince them to participate (Coercion stage), however different age groups reported they made this decision for different reasons. Older participants mentioning resisting peer pressure and that dropping rocks was immoral or wrong, while younger participants were more concerned with the risks to themselves such as getting in trouble, and practical consequences including damaging objects.

• In the lake scenario, clear age trends emerged in the rationales young people provided for their decision not to push the person in both the Invitation and Coercion stages. Older participants (14 and 16 year olds) were more likely to report thinking about broader, more socially-focussed rationales including peer pressuring their friend not to push the person, resisting the friend’s attempts to peer pressure, mentioning that pushing the person would be motivated by retaliation or revenge, prosocial and antisocial aspects of pushing the person. Conversely, younger participants (eight to 12 year olds) were more concrete and self-referential in their rationales, mentioning sanctions, harm to people, and the risks to themselves or their friend at higher rates than the other age groups.

The law uses the terms seriously wrong and naughty to determine individuals who are competent in terms of moral reasoning and decision making abilities. The law assumes that of the young people who do commit offences, those under the age of 10 do not possess the requisite competence, those between the
ages of 10 and 13 may possess the requisite competence (although this is likely to vary) and those aged 14 and above are likely to be competent. Thus, the next analysis looked at the association between decision and choice of label (including seriously wrong and naughty) to see how many individuals who would drop rocks or push the person would also label these actions *seriously wrong* and would theoretically be held culpable under the law.

- In the Invitation stage of both the rock and lake scenarios, the decision to drop rocks or push the person was significantly associated with choice of label. Trends indicated that if people went with their friend, they saw it as less wrong. If they didn’t go, they saw it as more wrong.

- This finding was not consistent across age groups. In the rock scenario, reported decision was associated with label choice for only 10 and 16 year olds. In the lake scenario, reported decision was significantly associated for all age groups except eight year olds. These findings are consistent with the sentiment of *doli incapax*, that individuals may commit an offence, and not understand the seriousness of their actions.

Considering the terms *seriously wrong* and *naughty* are used by *doli incapax* to indicate moral reasoning and decision making ability, it was pertinent to explore whether these terms were associated with psychometric measures of moral reasoning and decision making across all age groups.

- Findings indicated that decision making and moral reasoning significantly and linearly improved with age. However, findings showed than only participants’ sociomoral reasoning abilities aligned with the current age-based legal distinctions set out by *doli incapax* at 10 and 14 year of age.

The *doli incapax* presumption utilised the terms *naughty* and *seriously wrong* as a proxy for moral reasoning and decision making competence. Being able
to identify risky behaviour as seriously wrong should therefore be associated with better moral reasoning and decision making abilities. This assumption was investigated for the sample as a whole, and for each age group.

- The terms seriously wrong and naughty did not consistently differentiate between moral reasoning and decision making competence, making these terms poor indicators of developmental maturity. However, when seriously wrong and naughty did differentiate between moral reasoning and decision making competence, seriously wrong usually indicated more mature abilities compared to naughty.

Under doli incapax, it is assumed that young people’s ability to identify risky behaviour as seriously wrong improves with age. Specifically, the law assumes that significant improvements in this ability happen at age 10 and age 14. To investigate this assumption, the association between age and participants’ description of dropping rocks and pushing the person into the lake (not wrong at all, naughty, wrong, seriously wrong) was investigated.

- In the rock scenario, age was not associated with label choice both initially (Invitation stage) and at the end (Culmination stage), with the majority of participants labelling rock dropping as seriously wrong. Once participants had seen the friend drop the first rock and the car swerved to miss the rock, age was significantly associated with label, with eight year olds labelling rock dropping wrong at five times the rate of the other age groups.

- In the lake scenario, age was associated with label choice initially (Invitation stage). Specifically, 14 and 16 year olds saw pushing the person into the lake as less wrong compared to other age groups. Once participants had seen the Deep Water sign or the person in the lake yelling “I can’t swim” participants labelled this seriously wrong at similar rates across age groups.
Following this, the factors that participants reported considering when labelling rock dropping or pushing the person into the lake (as not wrong at all, naughty, wrong, or seriously wrong) were investigated. First, whether choosing different labels was associated with citing different factors was investigated.

• In the rock scenario, participants who initially labelled rock dropping seriously wrong were more likely to report thinking about the potential for harm to people when choosing that label. For the rest of the rock scenario, participants reported considering similar factors regardless of the label they chose.

• In the lake scenario, participants reported considering different factors depending on the label they chose more often than the rock scenario. After having the scenario initially described to them (Invitation stage), those who labelled pushing the person into the lake seriously wrong were more likely to report thinking about the potential for harm to people and contingencies that could escalate risk or reduce safety. Similarly, after seeing the person in the lake yelling “I can’t swim” (Culmination stage), those who labelled this seriously wrong were again more likely to mention harm to people. In the Escalation stage (just after seeing the Deep Water sign), participants that chose the label wrong mentioned the qualities or abilities of the victim that would increase or decrease the risks associated with pushing the person (most often the person’s swimming ability).

Finally, whether individuals of different ages reported considering different factors when labelling dropping rocks or pushing the person into the lake (as not wrong at all, naughty, wrong, or seriously wrong) was investigated. To avoid confusion in the results, age-based trends were calculated depending on the label chosen.
• Because most participants labelled the rock scenario *seriously wrong*, the age-based trends described here relate to participants that described rock dropping as *seriously wrong*. In the rock scenario, younger participants (eight and 10 year olds) were more concrete in their reasoning compared to older age groups. Specifically, they reported thinking about practical consequences including damage to objects when labelling how wrong dropping rocks was both initially (Invitation stage) and after seeing the friend drop the first rock (Escalation stage). As age increased, participants increasingly reported considering broader, more abstract factors when labelling the rock scenario at the various stages. Specifically, older participants (especially 16 year olds) reported thinking about the morality of dropping rocks (Invitation stage), and that someone was likely to be harmed considering the rock hit the car windscreen (Culmination stage). However, 16 year olds were the only age group not to mention the possibility of getting in trouble in the Culmination stage, while the other age groups mentioned this possibility at a similar rate.

• Participants were more varied in the labels they chose to describe the lake scenario, thus age trends were investigated for participants that chose both *seriously wrong* and *naughty* in the Invitation and Escalation stages, and only *seriously wrong* in the Culmination stage. Many of the age based trends seen in the rationales provided by participants that chose *seriously wrong* initially (Initiation stage), after seeing the Deep Water sign (Escalation stage) and one the person was in the lake (Culmination stage) were linear in nature, and cited most often by 16 year olds. These rationales included practical consequences, mentioning morality, mentioning the qualities or abilities of the victim that could increase or decrease their risk if pushed
into the lake (usually their swimming ability), and the fact that pushing the person into the lake puts their life at risk. By contrast, in the Invitation stage, younger participants (eight to 12 year olds) that chose seriously wrong were more likely to mention risks to themselves or their friend. Of the participants that chose the label wrong, 12 year olds stood out as mentioning risks to themselves initially (Invitation stage) and qualities or abilities of the victim that could increase or decrease the risks associated with push the person (usually their swimming ability) at higher rates than other age groups. Overall, these findings continue the trend that younger participants are typically more concrete and self-referential, while older participants are more abstract and broader in the ways they rationalise their choice of moral labels.
Chapter 8

Discussion

The purpose of this thesis was to scrutinise young people’s reported decisions, their choices of legal descriptor (from a list including seriously wrong and naughty), and their rationales for these choices in relation to two scenarios depicting potentially criminal behaviour. This thesis also collected data from psychometric instruments that purported to measure developmental trends in decision making and moral reasoning. These data were gathered to scrutinise several aspects of the doli incapax presumption: the use of the presumption as an age-based herding mechanism, the role of moral reasoning and decision making as developmental indicators of competence, and the utility of the terms seriously wrong and naughty as representations of competence. Finally, this thesis aimed to inform future investigative models so that ongoing debates regarding the use of doli incapax in Australia may be informed by pertinent empirical research.

For over a century in Australia, young people who commit criminal offences have been processed separately from adults, in the Children’s Court. This is because young people’s offending is thought to be driven by different factors to adult offending. The law (generally) takes the view that young people are more amenable to changing their offending behaviour than adults, and that young people are still developing the psychological abilities that are key to making informed and valid decisions about offending (Bentham, 1996; Melton et al., 2007; Scott & Grisso, 1997; Scott & Steinberg, 2003). As mentioned in Chapter Two, the two psychological abilities central to determining competence and thus culpability in young people are moral reasoning and decision making. Developmental literature provides support for young people receiving concessions when determining their culpability, as their moral reasoning and decision making abilities are still
developing throughout adolescence into early adulthood (Cauffman & Steinberg, 2000; Fried & Reppucci, 2001; Gibbs et al., 1992; Modecki 2008; 2009; Ormond et al., 1991; Steinberg & Monahan, 2007).

In legal terms, young people under the age of 10 are presumed irrefutably doli incapax (to lack the requisite state of mind, or mens rea, to be held accountable). Between the ages of 10 and 13, young people are still presumed doli incapax, although this may be rebutted if the prosecution can show that the individual young person knew their actions were seriously wrong and not just naughty at the time of the offence. From the age of 14, young people are presumed doli capax (to possess the requisite mens rea to be held accountable), although this can be rebutted if the defence can show that the individual young person did not know their actions were seriously wrong at the time of the offence. Thus, the operation of the doli incapax presumption shifts at age 10 and again at age 14, meaning there is a legal assumption that young people are possibly (but unlikely to be) competent at 10 years of age and are presumed competent at 14 years of age.

The implications and mechanics of doli incapax are the source of ongoing debates in Australia. Often when a young person commits a serious violent offence, there are calls to abolish doli incapax on the basis that young people are “more mature” now than in previous generations, given their access to the internet, education, and nutrition (Doherty, 2001; DPP v W [1999]; Tobin, 2008). However, these claims are often a punitive, reactive response to one particular crime, and rarely draw from the available developmental literature, or consider the ongoing effects of abolishing doli incapax on future young people. Thus, there was a need for an initial psycholegal investigation into the development of psychological maturity in young people with particular reference to the age ranges and criteria incorporated in doli incapax.
Being able to distinguish an act that is *seriously wrong* from one that is *naughty* requires both moral reasoning and decision making skills. The terms *seriously wrong* and *naughty* clearly raise moral questions, and knowing when something is right, wrong, seriously wrong, and naughty requires moral reasoning skills, as outlined in the relevant *obiter dicta* discussed in Chapter Two. Further, when determining whether an act is *seriously wrong* or just *naughty*, decision making abilities are required in order to think consequentially, to identify and evaluate potential risks, and ultimately to decide whether to engage in risky behaviour. Despite these clear psychological underpinnings of *doli incapax*, previous research has not bridged the divide between psychological and legal perspectives. Instead, psychological issues surrounding immaturity of judgement in young people are written about with no reference to the legal issue of implementing *doli incapax*, and legal discussion makes only broad reference to the relevant psychological issues. It was argued that *doli incapax* is fundamentally a psycholegal issue, considering competence lies at the heart of the presumption.

The available developmental literature concerning maturity of judgement provides mixed support for the ages at which *doli incapax* currently functions. Rationalist decision making and moral reasoning research largely supports the changes in the way the law groups young people at age 10 and 14. Similar to the developmental assumptions made by the law (explored in Chapter 2), rationalist research also supports the notion that young people linearly acquire these key psychological abilities, making adult-like decisions and moral judgements by mid-adolescence. However, the limitations associated with using recognition measures or unrealistic scenarios means rationalist research findings may overstate the moral reasoning and decision making abilities of young people, as these abilities
are likely to be impeded when making real-life decisions, or if the young person is emotionally activated (Cauffman & Steinberg, 1995; Cauffman & Steinberg, 2000).

When decision making and moral reasoning is explored from a more adolescent-focussed, psychosocial perspective, findings have shown young people remain impaired in these legally-relevant abilities until late adolescence or early adulthood (Cauffman & Steinberg, 2000; Fried & Reppucci, 2001; Gardner & Steinberg, 2005; Modecki, 2008; 2009;). In fact, the psychosocial research shows a curvilinear developmental trend, with mid-adolescents making riskier decisions in comparison to younger and older adolescents (Steinberg & Monahan, 2007).

Findings from neuropsychological research show that young people's limbic system develops before their prefrontal cortex, providing a biological basis for the increased sensation seeking, impulsivity, and risk taking seen in mid-adolescents.

This thesis therefore made some key arguments when approaching this initial psycholegal investigation. Specifically, it was argued that the age ranges at which doli incapax apply have little basis other than history, and were not developed from a sound research base. Further, it was argued the terms seriously wrong and naughty are poorly defined and are unlikely to be useful indicators of competence, given their development through common law judgements over time.

Ultimately, this means that the terms seriously wrong and naughty are a loosely defined, subjective, and unstandardised way of indicating competence. The purpose of this thesis was therefore to bring preliminary empirical data to these areas of ambiguity by looking at young people's performance on legally-relevant tasks at ages before, during, and after when the doli incapax presumption changes (at 10 and 14 years). This study incorporated several elements to explore developmental trends and thus the above arguments from numerous angles. Psychometric measures of decision making and moral reasoning were utilised
alongside a process-focussed stimulus tool designed for the current study. The specially-designed tool incorporated the legal standard and explored three elements; young people’s reported decisions to engage (or not engage) in risky behaviour, their use of legal descriptors (including *seriously wrong* and *naughty*) when describing risky behaviour, and the process they reported using when making decisions and choosing labels.

In an effort to loosely follow the legal process (see Figure 21), participants’ reported decisions, and the rationales they provided for these decisions, were initially investigated, as young people must decide to engage in risky behaviour before entering the Children’s Court. Then, because the law makes assumptions about likely competence based on age, age-based trends in psychometric measures of moral reasoning and decision making were investigated. Finally, young people’s use of legal labels (including *seriously wrong* and *naughty*), and the rationales they provided for choosing these labels, was investigated. Because the terms *seriously wrong* and *naughty* lack consistent definitions, this study approached understanding the *doli incapax* presumption from numerous angles. Together, these elements bridge the divide identified in previous research by incorporating the *doli incapax* criteria into a developmental exploration of decision making and moral reasoning. Considering the present study is the first of its kind, and therefore marked an initial psycholegal investigation into *doli incapax*, posing directional hypotheses was premature. As such, the investigation was led by broad aims, displayed pictorially in Figure 22 below. Findings are discussed below in the order of the aims.
Figure 21. The Legal Process Relevant to Doli Incapax in Victoria

- Young person is irrefutably presumed to lack the requisite competence to be held accountable for offending.
- Young person deemed to have not understood their actions were seriously wrong and not just naughty at the time of the offence.
- Young person presumed competent on a group level. Individual competency assessment required if defence is to rebut this presumption.
- Young person has criminal act alleged against them (Actus reus).
- Under the age of 10.
- 10, 11, 12 and 13 year olds.
- 14 year olds to age of majority (18 years).
- Deemed doli incapax and therefore not held culpable for their offending behaviour.
- Deemed doli capax and therefore held culpable for their offending behaviour.
Figure 22. The variables included in the present study. Lines indicate relationships that are investigated by an aim.

**Decision outcome:** Reported decision to drop the rock or not, or push the person or not (*Actus reus*).

**Decision process:** Reasons young people gave for decision to drop rock or not and push the person or not.

**Psychometric measures:** decision making, anti-social decision making, moral judgement, moral reasoning in violent situations.

**Age:** 8, 10, 12, 14, and 16 year olds.

**Moral outcome:** Choosing a legal labels from Not wrong at all, Naughty, Wrong, Seriously Wrong.

**Moral process:** Reasons young people gave for choosing the legal label not wrong at all/naughty/ wrong/ seriously wrong.
Aim One Findings and Implications

Aim one was to highlight age-based patterns in the decisions that young people report making at key points in the two vignettes of the Competencies Associated with *Doli Incapax* (CADI) tool. Most participants reported they would not drop rocks or push the person into the lake. This trend was particularly evident in the rock scenario, with more that 85% reporting they would not drop rocks at the initial Invitation stage, and all reporting they would not drop rocks in the subsequent stages. The process by which participants stated they made this decision was explored as part of aim two and shed light on the nature of the reasons participants would not drop rocks.

This decision was not associated with age, because the overwhelming majority of participants across all age groups reported they would not drop rocks. It may be that participants’ overwhelming decision not to participate in the rock scenario was because the consequences of dropping rocks from a freeway overpass onto traffic were obvious, leading them to utilise a simple decision rule to make this decision, rather than engaging in an active decision making process. This is supported by the fact that participants’ top two rationales (that people could potentially be harmed, and that inanimate objects could be damaged by dropping rocks) for their decision were consistent throughout the rock scenario stages. This indicated that they utilised a similar process, even as new information was introduced (see aim two findings and implications for further discussion of this point).

Compared to the rock scenario, a larger proportion of participants stated they would engage in the risky act of pushing the person into the lake. Nevertheless, the majority of participants still reported they would not push the person into the lake. As mentioned in the previous chapter, there were two distinct
age-based trends at the Invitation and Coercion stages. Older age groups (14 and 16 year olds) were more likely to report they would push the person into the lake initially (Invitation stage). However, it must be noted that being told they were pushing a same-aged peer into the lake reduced the risk associated with pushing the person for these older age groups, because a 14 or 16 year old is more likely to be able to swim or get out of the lake due to their physical development. Further, the 14 or 16 year old participant doing the hypothetical pushing is more likely to be able to save the person in the lake due to their increased physicality and/or swimming ability if something were to go wrong. Even though older participants’ initial reported decision to push the person could be seen as sensation seeking or risk taking under a psychosocial framework (Steinberg & Cauffman, 1996; Scott et al., 1995), it is likely that older participants were in fact weighing the costs and benefits of pushing the person differently to younger age groups, and/or identified different costs and benefits (Furby & Beyth-Marom, 1992), given the different level of risk for older participants.

A different age trend was seen at the Coercion stage, where participants were told their friend tried to convince them to push the person. Here, eight year olds were twice as likely than other age groups to be convinced by their friend and engage in the risky act. Thus, older age groups were more likely to stay with their initial decision not to participate. This finding points to eight year olds’ susceptibility to peer influence, which is unexpected considering psychosocial theories would expect mid-adolescents to be most susceptible to peer influence (Steinberg & Cauffman, 1996; Scott et al., 1995). It is argued that this finding actually supports the rationalist notion that the younger the person is, the less able they are to think about long term consequences, instead prioritising short term gains, including the approval of their peers (Elkind, 1967; Furby & Beyth-Marom,
1992; Gerrard et al., 2008; Scott et al., 1995). Further, the fact that a portion of eight year olds changed their initial decision with only a little coercion points to the possibility that they recited rigid, stereotypical decisional sentiments (e.g. “that’s wrong”), rather than actively weighing the consequences when initially asked if they would push the person (Woolard, 1998) (see aim three for discussion of this point).

Collectively, these findings show that age was not a factor in decision making when the consequences were obvious. However, when consequences were less obvious, risks were subjective, or the risky nature of the act was contingent on further information, age was a factor in making decisions. Finally, eight year olds’ susceptibility to peer influence and engaging in risky behaviour provides very general support for the legal notion that under the age of 10, young people’s decision making is too unreliable for them to be held accountable for their actions. However, these findings only shed light on decisional outcome, which is why decisional process was investigated in aims two and three.

**Aim Two Findings and Implications**

Aim two investigated the relationship between reported decision (discussed above) and how young people justified their decision (their reported decision-making process). Just as participants’ reported decisions differed between the two vignettes, so did the rationales provided. As mentioned, most reported they would not drop rocks, and this relatively consistent decisional outcome was backed up by two consistent rationales: that people could potentially be hurt, and that inanimate objects (such as cars) could be damaged by dropping rocks. This supports the idea that the consequences of dropping rocks onto a freeway were obvious to participants from the beginning of the scenario, and that
once they engaged a rationale as to why they wouldn’t participate, their decision making process did not change at subsequent stages. Mann et al. (1989) would argue that these participants did not engage in a vigilant decision making process when deciding not to drop rocks, instead using a panic-driven (hypervigilant) process by persisting with the first rationale that entered their mind.

Looking past the top two most frequently cited rationales, of the small portion of young people that agreed to go with their friend initially, many reported they would do this to try and stop their friend from dropping rocks. Thus, the participants that reported they would go mostly did so for altruistic reasons, rather than because they were risk seeking. By contrast, the participants that stated they would not drop rocks did so because they thought they would get in trouble, a risk to themselves. While these trends are not broken down by age (see aim three for those findings), these findings do provide some insight into young people’s decision making process. Considering only a few reported they would go with their friend to drop rocks, it should be noted that not all young people who said they would go with their friend did so in order to prevent it. The young people who would willingly drop rocks onto traffic may simply be underrepresented in this sample.

Compared to the rock scenario, participants provided more varied rationales for their reported decision throughout the lake scenario. Those that reported they would not push the person into the lake initially rationalised this decision by stating that the act would be immoral or wrong, and that the person didn’t deserve to be pushed into the lake. However, there were no rationales that were only mentioned by participants that made the alternate decision (to push the person). Individuals who made either decision mentioned they might get in trouble, or harm someone. Having a larger and more diverse sample may have
produced more variation and therefore better illuminated decision making processes.

When the process used at the Coercion stage was investigated, participants reported utilising similar rationales regardless of whether or not they reported they would push the person. These reasons again included the act being immoral or wrong, mentioning peer pressure, and the social repercussions of pushing the person in. Although these rationales are not broken down by age (see aim three for discussion of age-based trends), such rationales show that participants were considering the morality as well as the social implications of pushing the person. Thus, young people thought about issues other than the potential for harm to people, or damage to inanimate objects, when making decisions in the lake scenario. It may be that in situations where the possible damage or harm is less obvious, young people have more abstract rationales at the top of their mind.

Together, these findings provide some insight into the factors young people reported thinking about when they were asked to make potentially risky decisions. Considering much of the previous developmental research into moral reasoning and decision making uses outcome-based, recognition measures (for example Cauffman et al., 2010; Mann et al., 1988), this thesis contributes much needed process-based data to this knowledge base. However, these findings mostly shed light on the process used when not engaging in risky behaviour because most participants reported they would not engage in the risky act. Participants who considered they might get in trouble, thought the risky behaviour was immoral or wrong, or that the victim didn’t deserve it, were less likely to report they would engage in the risky act. Even when participants reported they would accompany their friend, they did so for the altruistic reason of convincing their friend not to drop rocks. However, these findings speak only to the reported decision
participants made, and do not shed light on developmental trends. Developmental
trends were explored as part of aim three.

**Aim Three Findings and Implications**

Aim three built upon aim two by highlighting age-based patterns in the
ways young people justified their decisions at key points in the two vignettes. As
few participants reported they would engage in risky behaviour, most of the below
discussed findings relate to participants that reported they would not drop rocks
or push the person. There were no age-based trends in the ways young people
rationalised their initial decision to not drop rocks, meaning that all age groups
reported similar reasons when making this decision. This fits with the above
interpretation that participants used a restricted information search when making
this decision, choosing the most obvious, simple rationale to justify not dropping
rocks.

However, when the broader, master categories were looked at, younger
participants (particularly 10 and 12 year olds) emerged as more likely to be
concerned with the risks to themselves or their friend. The master categories
combined theoretically similar categories, so this finding indicates that young
people may have used different word choices to express the same sentiment.
Combining numerous categories in a theoretically relevant way meant that these
different word choices could be bypassed, and the age-based trend to mention risk
to themselves or their friend was visible. On a conceptual level, younger
participants mentioning risks to themselves or their friend fits with Kohlberg's
(1969) notion that individuals in the Preconventional stage of moral development
will be more concerned with the immediate players of a situation, and will find it
difficult to consider the consequences for broader groups such as their family and the community.

While risk-based notions were top of mind for younger participants, older participants (particularly 16 year olds) were more likely to mention factors that fell into the master category of prosocial thinking or behaviour. They were able to generate decision alternatives that were less risky, or conceptualise the broader risks of dropping rocks. Thus, older participants were able to think more broadly about alternatives to dropping rocks, showing they engaged abstract reasoning abilities. This is consistent with the rationalist notion that as young people get older they are increasingly able to think about consequences, project these into the future, and actively weigh risks and benefits (Furby & Beyth-Marom, 1992). However, this finding also aligns with fuzzy-trace theory (Reyna, 2004). Under fuzzy-trace theory, younger participants would be expected to reference specific (verbatim) details of the scenario when making decisions. This fits with their propensity to mention risk-based rationales, as such risks were obvious outcomes associated with dropping rocks. Because older participants have more decision making experience, fuzzy-trace theory would expect them to consider the scenario as a whole, rather than getting caught up in the detail. Older participants reported engaging in prosocial thinking and generating prosocial behaviours, which speaks to their ability to look beyond the surface details of the scenario and consider the situation more broadly. Although it can be said that older participants tended to provide justifications that would be considered more sophisticated by rationalist and dual-process theories, when these rationales were tracked through consecutive age groups, the age trend was not always strictly linear.

In the Coercion stage, all participants reported they would not drop rocks. Despite this similarity in decisional outcome, age-based trends were evident in the
process participants used to arrive at this outcome. Specifically, participants aged 10 to 16 mentioned that dropping rocks was immoral or wrong at a higher rate than eight year olds, and 12 to 16 year olds stated they would resist their friend’s attempts to pressure them more often than younger participants. While this does not indicate that younger participants would not resist the influence of their peers, it does indicate that reporting doing so was not at the top of their mind. The master categories echoed these findings, with older participants (12 to 16) mentioning social considerations more often than younger participants. This again demonstrates the importance of peers and their social standing to adolescents.

Younger participants (eight to 12 year olds) mentioned the potential for inanimate objects to be damaged by dropping rocks, and that they would possibly get into trouble for dropping rocks. Finally, participants aged 10 and over mentioned considering the morality of dropping rocks at a higher rate than eight year olds, possibly indicating that from the age of 10, young people more readily consider some of the moral aspects of a situation. This finding provides some support for the current minimum age of criminal responsibility being set at age 10. Again, these rationales highlight younger participants’ tendency to be self-referential when they make decisions, while older participants are able to think more abstractly about the scenario, consistent with rationalist theories (Gibbs et al., 1992; Furby & Beyth-Marom, 1992; Kohlberg, 1969). Despite this broad difference in what older and younger participants mention, age-trends were largely inconsistent. This variance in age-based trends highlights how variable development is, and therefore provides support for presuming young people doli incapax between the ages of 10 and 14, and possibly extending the presumption beyond 14.
Although participants’ initial decision in the lake scenario to not push the person was guided by a belief that doing so was immoral or wrong, or that the person didn’t deserve to be pushed, age-trends were not evident in these rationales. Participants across all age groups mentioned these factors at similar rates. Age-trends were seen in other rationales, however. When making the initial decision not to push the person, eight to 12 year olds reported the likelihood they would get in trouble if they pushed the person at more than double the rate of older age groups. This finding continues the emerging trend that younger participants are concerned mostly for themselves, and are concrete and absolute in their reasoning, just as rationalist theories would predict (Gibbs et al., 1992; Kohlberg, 1969). Reciting strict rule-based rationales also indicates that younger participants may be less active in the process of generating justifications for their decisions.

Similar age-trends were evident at the Coercion stage, with younger participants (particularly eight year olds) mentioning that people could be harmed by pushing the person into the lake. By contrast, older participants (particularly 14 and 16 year olds) mentioned peer pressure as a reason not to push the person, with approximately half of those identifying that their friend was trying to pressure them, and the other half stating they would pressure their friend into not pushing the person. Findings at the broader, master category level mirrored the above findings. A linear age trend was seen in the tendency to mention the risk to themselves or their friend, with younger participants more likely to mention this factor. Older participants (particularly 14 and 16 year olds) mentioned social considerations (e.g. peer pressure, social repercussions) and antisocial thinking or behaviour (e.g. justifying dropping rocks or pushing the person, dropping rocks or pushing the person is fun or funny) when deciding not to push the person.
These findings again illustrate younger participants’ tendency to think in a concrete way, and to focus on the consequences for themselves and those close to them, rather than the full range of people potentially affected. Again, this fits with the younger participants being at the Preconventional stage of moral reasoning (Kohlberg, 1969). Older participants continued to demonstrate abstract reasoning abilities, and also focussed on the social aspects of the situation, including peers. This fits with psychosocial findings indicating that mid-adolescents place importance on how their decisions will impact on their social standing (Gardner & Steinberg, 2005). Thus, both rationalist and psychosocial theories are relevant when understanding young peoples’ decision making process. Although these findings indicate that older participants considered different factors than younger participants when making decisions, few age trends followed a strictly linear or quadratic trajectory. There was more variance in development than either rationalist or psychosocial theories account for.

**Aim Four Findings and Implications**

Two elements are needed when determining criminal culpability; evidence the individual in question committed the act (*actus reus*) and evidence they had the requisite state of mind at the time of the offence (*mens rea*). Under *doli incapax*, young people are seen as competent if it can be shown they knew their actions were *seriously wrong* as opposed to *naughty* at the time of the offence. Aim Four was therefore to investigate whether reported decision and the labels that young people choose (including *seriously wrong* and *naughty*) to describe the two vignettes were associated, and whether this association differed according to age. Establishing that a young person knew their actions were *seriously wrong* in a
court of law is clearly more complex than simply choosing a legal descriptor, which participants in this study were asked to do. Nevertheless, relationships between stated actions, reasoning, and descriptors are worthy of investigation.

Reported decision and choice of legal descriptor were significantly associated at the sample level for both the rock and lake scenarios. Generally speaking, as participants’ choice of label became increasingly wrong, they were less likely to say they would participate in the risky act. However, there were still a proportion of young people that labelled the scenarios *seriously wrong* and stated they would participate. In the rock scenario, less than 7% of the sample reported they would drop rocks. However, *seriously wrong* was the label chosen most frequently by these participants. Less than 5% of the overall sample reported both that they would drop rocks and thought doing so was *seriously wrong*. It is possible that some of the young people who agreed to go with their friend did so to stop their friend, rather than participate. It is also possible that these are the young people that would be found culpable before a court, as a percentage of young people who commit offences are found to have understood their actions were *seriously wrong* at the time of the offence, and are held accountable for their actions (i.e. knowing it was *seriously wrong* did not prevent the action). When broken down by age group, this association was only maintained for 10 and 16 year olds, which indicates the association between decision and label choice is age-specific. Thus, how participants described the scenario and the decision they reported they would make were inconsistently associated.

In the lake scenario, participants that initially agreed to push the person into the lake (Invitation stage) and after seeing the *Deep Water* sign (Escalation stage) were more likely to choose a label other than *seriously wrong*. When the initial decision to push the person (Invitation stage) was broken down by age
group\textsuperscript{162}, this association was maintained for all ages except eight year olds. This finding makes sense particularly for 14 and 16 year olds as they chose a label other than \textit{seriously wrong} most often, in part due to the decreased risk of these age groups pushing someone into a lake, as mentioned. However, this same explanation is unlikely to apply to 10 and 12 year olds. Looking at how they justified their decision, these age groups identified the potential to get in trouble at more than twice the rate of 14 and 16 year olds. Thus, the 10 and 12 year olds that agreed to push the person, identified they might get in trouble but were willing to take that chance.

\textbf{Aim Five Findings and Implications}

Given that the law presumes decision making and moral reasoning abilities linearly improve (see Chapter 2 for discussion on this point), aim five was to investigate developmental trends across legally relevant age groups in psychometric measures of: decision making; anti-social decision making; sociomoral reasoning and; moral reasoning in violent situations. Further, because previous research had not utilised some of these developmental psychometric measures with ages spanning the \textit{doli incapax} age range (before, during, and after 10 and 14 years of age), this aim also sought to investigate the utility of such measures with age groups relevant to \textit{doli incapax}.

Findings related to the decision making measure (the Adolescent Decision Making Questionnaire (ADMQ), Mann et al., 1988) showed that eight year olds were more apathetic when making decisions than 10, 12 and 16 year olds, and

\textsuperscript{162}The association between reported decision and label chosen could not be broken down by age group in the Escalation stage, as there were too few participants in that Escalation stage (n=35).
avoided decision making more frequently than 10 and 14 year olds\textsuperscript{163}. These findings are somewhat consistent with previous decision making research in that eight year olds were poorer decision makers than older age groups (Weithorn & Campbell, 1982). Further, the findings that eight year olds were significantly more apathetic when making decisions is consistent with eight year olds reporting they were easily convinced by their friend coercing them to push the person into the lake (see aim one). However, rationalist theories would predict linear improvement with age (Gibbs et al., 1992; Kohlberg, 1969), which was not seen here. Nevertheless, the fact that eight year olds were significantly more apathetic and avoidant than 10 year olds supports the current minimum age of criminal responsibility, as the law assumes 10 year olds’ decision making to be significantly better than children under this age.

However, there were reliability issues with some scales of this measure for eight year olds in particular, and some decision making styles were not reliably measured for some other age groups also. While the ADMQ had not been used with eight or 10 year olds in previous research, the ADMQ failed to reliably measure vigilant decision making in 14 year olds. Thus, this developmental measure was unable to reliably capture the development of decision making abilities. Further to this point, the other psychometric instrument used to measure antisocial decision making (the Youth Decision Making Questionnaire, Ford et al., 1989) was unreliable to the point that it was excluded from analyses. Even though modifications to this measure were likely responsible for the lack of reliability, such modifications were made to increase the chance that participants of all ages included in this study could understand and relate to the vignettes used. The fact that this measure had to be modified further highlights the lack of appropriate

\textsuperscript{163} Eight year olds were also less confident in their decision making compared to 14 and 16 year olds, however this scale was not reliable for eight year olds.
developmental measures of decision making. It also speaks to a broader challenge of designing developmental measures that are applicable to a wide range of ages, while being sensitive enough to capture developmental trends. In this case, adjusting the measure so that it was appropriate for eight to 16 year olds could have contributed to it being less sensitive to developmental trends in decision making.

Although the decision making measures had variable reliability depending on age, the sociomoral reasoning measure (Sociomoral Reflection Measure – Short Form (SRM-SF), Gibbs et al., 1992) was reliable for all age groups. Findings showed that sociomoral reasoning ability improved linearly with age, consistent with predicted developmental trends (Gibbs et al., 1992; Kohlberg, 1969). In fact, sociomoral reasoning ability significantly improved between all age groups, except for 10 and 12 year olds. Further, 14 and 16 year olds were the only two age groups to consistently utilise “mature” sociomoral reasoning. Together these findings provide support for the current age-based legal distinctions at 10 and 14 years of age, considering the only two age groups not significantly different to one another (10 and 12 year olds) are currently presumed doli incapax due to their variable rates of development. The fact that 14 and 16 year olds were found to utilise mature sociomoral reasoning lends further support to young people from the age of 14 being presumed to possess the requisite competencies to be held doli capax.

In terms of moral reasoning in violent situations, no age-trends were seen in how wrong or right young people thought justified violence was. That is, young people of all age groups labelled vignettes of justified violence in a similar way, usually as “in the middle [of right and wrong]” or “a little wrong”. Thus, participants’ rationales for labelling the vignettes in this way (their moral reasoning process) were explored. Generally, older participants made mention of
more sophisticated moral reasons more frequently than younger participants, consistent with the rationalist notion that moral reasoning abilities improve with age (Gibbs et al., 1992; Kohlberg, 1969). However, older participants also made mention of less sophisticated moral reasons more frequently than younger participants, indicating that participants may have just became increasingly verbose with age.

With the exception of the Sociomoral Reflection Measure – Short Form, these findings show that many of the available developmental psychometric instruments fail to fulfil their purpose of capturing developmental trends. Developmental trends in sociomoral reasoning showed some support for the legal assumption that moral reasoning abilities improve with age, and the nature of the *doli incapax* presumption changing at 10 and 14 years of age. However, because these measures are typically administered in research settings, participants are likely to be calm and therefore using their “cold” or logical reasoning processes, rather than their emotionally activated, “hot” reasoning processes (Ableson, 1963; Janis & Mann, 1977). Psychometric instruments have therefore been criticised for overestimating moral reasoning and decision making abilities as young people are unlikely to perform to this standard in a real-life situation (Cauffman & Steinberg, 1995; Cauffman & Steinberg, 2000). However, many of the above measures do not even suffer from this limitation, as they are unable to reliably measure constructs in the first place. Considering the SRM-SF did reliably measure sociomoral reflection across all age groups, this measure’s requirement that participants produce (rather than recognise) moral reasons should be incorporated into future psychometric endeavours.
Aim Six Findings and Implications

If the court can determine a young person knew their criminal behaviour was *seriously wrong* at the time of the offence, the presumption is that they had sufficient moral reasoning and decision making abilities to be able to make such a judgement. While it is recognised that demonstrating a young person knew their actions were *seriously wrong* is more involved than simply asking them to choose a legal descriptor (see Chapter Two for discussion on this point), aim six was to investigate whether participants that choose the label *seriously wrong* performed significantly better on measures of moral reasoning and decision making than those who chose *naughty*. In both the rock and lake scenarios, those who chose *seriously wrong* rarely performed better than those who chose *naughty* on measures of moral reasoning and decision making. In fact, there were mostly no significant differences in the decision making and moral reasoning abilities of these two groups (as measured using the above discussed psychometric measures). That is, choosing the terms *seriously wrong* and *naughty* rarely indicated significant differences in decision making and moral reasoning. Where one’s choice of term did indicate significant differences in ability, participants that chose the label *seriously wrong* typically performed better on measures of moral reasoning and decision making than those that chose *naughty*. On one occasion, young people that chose *seriously wrong* were significantly more likely to make hasty and impulsive decisions under stress than participants who chose *naughty*. This may have captured the group of young people who would both see the risky act as *seriously wrong* and still do it.

There are a few possible explanations for these findings. First, the small number of participants who chose the label *naughty* meant significant differences were difficult to find. Second, because the psychometric measures were not
reliable, they were not sensitive enough to pick up differences between the moral reasoning and decision making abilities of participants that chose seriously wrong compared to naughty. Third, one’s choice of the term seriously wrong or naughty may simply be a poor proxy for moral reasoning and decision making competence. It is unclear what choosing one term or the other actually indicates. If the notions of seriously wrong and naughty are largely unrelated to the competencies they are purported to represent, they should be revised to better capture these competencies.

Aim Seven Findings and Implications

While establishing a young person knew their actions were seriously wrong as opposed to naughty is more involved than choosing a legal descriptor, these constructs are central to doli incapax and have received little research attention. Aim seven was to highlight age-based patterns in the labels that young people choose (including seriously wrong and naughty) to describe the two vignettes. Participants were provided with the labels set out in doli incapax as well as the additional options not wrong at all and wrong164. Just as most participants made the decision not to drop rocks, the majority labelled dropping rocks from the bridge as seriously wrong. There were no age trends in the label chosen initially (Invitation stage) or at the end of the rock scenario (Culmination stage). The serious nature of dropping rocks was obvious to participants of all ages at these stages. However, age-trends were evident once participants had been told they had seen the first rock dropped (Escalation stage). Fewer eight, 10, and 14 year olds chose the label seriously wrong than other age groups, indicating that these age

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164 Not wrong at all and naughty were included to provide participants with additional response options along the conceptual continuum of “wrongness” that underpins the current legal standard.
groups may have been expecting more serious consequences to result from the friend dropping the first rock than just a car swerving. However, younger participants are emerging as more rule-based and superficial in their decision making process than older participants. Thus, it may be that eight, 10, and 14 year olds saw dropping the rock as less wrong for different reasons (see aim nine for an exploration of this). Although age was associated with label choice at the Escalation stage, this trend was neither linear nor quadratic, and thus does not align with what rationalist or psychosocial theories would respectively predict (Gibbs et al., 1992; Scott et al., 1995; Steinberg & Cauffman, 1996).

Participants more frequently used a wider range of the provided legal labels in the lake scenario compared to the rock scenario. Age was associated with label choice for the Invitation stage only in the lake scenario, meaning that all age groups labelled the lake scenario similarly at both the Escalation and Culmination stages. As mentioned, 14 and 16 year olds were most likely to agree to push the person into the lake, and they were also most likely to choose a label other than seriously wrong to describe the lake scenario. It could be argued that this age trend broadly fits with a psychosocial perspective and indicates mid-adolescents tend to see pushing the person as not that risky, evaluate risks as less probable, and perceive gains associated with engaging in risky behaviour (Cohn et al., 1995).

However, it is more likely that 14 and 16 year olds’ tendency to initially choose a label other than seriously wrong is due to it being objectively less risky to push a 14 or 16 year old into a lake than younger people, given their increased: physical size, likelihood of being a competent swimmer, and the chance that the participant pushing them would have the physicality to pull the person out of the lake. Thus, it is argued that 14 and 16 year olds are simply assessing the risks associated with pushing the person into the lake, which happen to be reduced
compared to other age groups (Furby & Beyth-Marom, 1992). Findings from aim
nine shed light on the process different age groups reported using when choosing
legal descriptors. Age was not significantly associated with label choice after the
Invitation stage, possibly because the consequences of pushing the person became
increasingly obvious, and thus participants more consistently used the label
seriously wrong. Thus, age-based trends in label choice were only seen when the
consequences of the lake scenario were ambiguous.

Aim Eight Findings and Implications

In an effort to examine the process by which participants labelled the two
vignettes, aim eight was to explore the association between the labels that young
people used (including seriously wrong and naughty) to describe the two vignettes,
and the justifications they provided for choosing that label. When participants
initially had the rock scenario described to them, the most frequently cited
rationale was the potential for people to be harmed, which was more likely to be
mentioned by participants that chose the label seriously wrong than naughty or
wrong. In the remaining stages of the rock scenario (Escalation and
Culmination) the labels participants chose were not associated with the rationales
they provided.

When young people were initially asked to justify the label they used to
describe the lake scenario action (Invitation stage), the most cited rationale was
the potential for people to be harmed, with participants that chose the label
seriously wrong most likely to mention this, mirroring findings in the rock scenario.
Similarly, those who chose the label seriously wrong were most likely to mention

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165 Although identifying the potential for harm was associated with choosing the label seriously
wrong, developmental trends were not explored as part of this aim (see aim nine for a discussion on
that point).
contingencies that could escalate risk and/or reduce safety. They were also most likely to identify the risks associated with pushing the person into the lake, even when the consequences of pushing the person were ambiguous. Thus, participants typically reported choosing the label *seriously wrong* because they were able to think consequentially and identify the potential risks.

Once the participants who stated they would not go with their friend initially saw the *Deep Water* sign, the rationales they gave for labelling the Escalation stage were not associated with label chosen. That is, people chose different labels for similar reasons. However, the fact that participants increasingly labelled the lake scenario as *seriously wrong* as the stages progressed may have made it difficult to detect differences in process due to the small number of participants choosing labels other than *seriously wrong*. In the final stage of the lake scenario (Culmination stage), label choice was significantly associated with mentioning the potential for harm to people, with participants that chose *seriously wrong* the most likely to mention harm to people.

Overall, choosing the label *seriously wrong* was associated with identifying risks. However, label choice was most often not associated with any particular rationale, meaning young people chose different legal descriptors for similar reasons. This would indicate participants either had varying definitions of the legal descriptors provided (what *seriously wrong* meant to one participant was not the same as another participant), or identified similar factors when choosing a label but weighed these differently to reach a different outcome. However, considering most participants chose the label *seriously wrong*, the small number of participants choosing other labels would have reduced the likelihood of finding significant differences. A larger sample of participants choosing labels other than *seriously wrong* would be needed to clarify the relationship between process and outcome.
While these findings give some indication as to which rationales are going to be associated with seeing something as *seriously wrong*, thereby making one more likely to avoid the risky act (see aim four findings), a larger sample in future research would help to understand the process of choosing a different label and therefore being more likely to engage in the act. Even though this study shows an association between seeing something as *seriously wrong* and not engaging in that act, it is worth noting that the opposite is true for some young people; they engage in the act and are deemed *doli capax*. Thus, seeing an act as *seriously wrong* does not prevent all young people from engaging. A larger sample would allow the judgement process used by this sub-group of young people to be explored.

**Aim Nine Findings and Implications**

Aim nine was to highlight age-based patterns in the justifications young people provided for choosing legal descriptors (from a list including *seriously wrong* and *naughty*). Due to the majority of participants choosing *seriously wrong* throughout the vignettes, the below discussed findings mostly illuminate age-based trends in the rationales participants provided when justifying choosing the label *seriously wrong*.

Of the participants that labelled the rock scenario *seriously wrong* initially, mentioning harm was not significantly associated with age, indicating that the potential for harm was equally as obvious to participants of all ages that chose this label. Thus, those that chose the label *seriously wrong* may have been better able to think consequentialy or about others (rather than just themselves) than participants that chose a different label. Conversely, mentioning damage to inanimate objects (such as cars) was associated with age, with eight and 10 year olds the age groups most likely to mention this rationale. At the master category
level, younger participants (particularly eight and 10 year olds) mentioned practical consequences (including damage to objects) more frequently than older age groups. These findings are consistent with younger participants utilising more concrete reasoning than older participants. Also at the master category level, mentioning morality increased linearly with age, consistent with the earlier finding (both here and in previous research) that young people’s sociomoral reasoning improves linearly with age (Gibbs et al., 1992; Kohlberg, 1969).

Participants that chose the label *seriously wrong* once they saw their friend drop the first rock (Escalation stage) most often justified this label by mentioning potential for damage to objects, a rationale which was also associated with age. Specifically, eight year olds were the most likely age group to mention damage to objects, and 14 year olds were the least likely. Similarly, at the master category level, eight and 10 year olds were the age groups most likely to mention practical consequences (of which damage to objects is one). Consistent with the age-based trends seen in the Invitation stage, these findings indicate younger age groups tend to utilise concrete, rule-based, risk-focussed rationales, which are all qualities of moral reasoning at the Preconventional or Immature level (Gibbs et al., 1992; Kohlberg, 1969).

Age trends were also evident in the process used by young people that chose the label *seriously wrong* after seeing their friend drop the second rock (Culmination stage). Eight year olds mentioned potential for harm to people at a lower rate than other age groups, which was also mirrored in the master category findings. This contradicts previous trends for younger age groups to focus on harm as a risk-based rationale. It may be that because eight year olds were often significantly less verbose than older age groups, they may have already mentioned harm to people in previous stages, and simply not repeated it again here. However,
the younger participants were, the more inclined they were to mention they might get in trouble for dropping rocks, so it may be that they were more focussed on the consequences for themselves than for others by the Culmination stage.

On the whole, the age trends seen in how participants justified describing the rock scenario as seriously wrong support the trends seen in aim three, with younger participants being more egocentric and concrete in their reported reasoning process than older participants. Apart from increasingly considering the morality of dropping rocks, these findings shed little light on the rationales older participants uniquely used to justify describing the rock scenario as seriously wrong. Considering older participants were typically more verbose than younger participants, they are likely to have mentioned a broader range of factors than younger participants. This may have meant the most cited rationales were dominated by the few reasons younger participants consistently made mention of. This highlights the importance of using master categories to combine different expressions of similar sentiments in order to view broader process-based trends.

For participants that initially labelled the lake scenario seriously wrong (Invitation stage), mentioning that the potential victim didn't deserve to be pushed into the lake increased linearly with age. Making such a judgement utilises abstract reasoning and perspective taking abilities, and shows a more active processing of the scenario (by discussing the motive of pushing the person into the lake), rather than just the risks associated with this act. At the master category level, mentioning risk to yourself or your friend was significantly associated with age, with younger participants (eight and 10 year olds) mentioning this rationale most frequently. Again, this aligns with the trend for younger participants to consider aspects of the situation that affect themselves over others.
There were no age-based trends in the rationales young people that chose
the label *wrong* provided at the Invitation stage of the lake scenario. Young people
who chose this label did so for similar reasons, regardless of their age. Such
reasons were similar to those cited by participants that described pushing the
person as *seriously wrong*: the potential for harm to people, the victim didn’t
deserve to be pushed, and contingencies that could escalate risk and/or reduce
safety (e.g. “there could be shallow water”, “if there were rocks she could hit her
head” “if they don’t know how to swim they could drown”). However, at the master
category level, when rationales were combined into relevant theoretical categories,
age was associated with mentioning risk to yourself or your friend. The age-based
trend was slightly different to the previous trends, with 12 year olds citing these
sentiments most frequently, followed by eight and 10 year olds. It may be that 12
year olds are able to identify the possibility for these risks, but perceive
themselves as unlikely to experience these risks (Elkind, 1967; Gerrard et al.,
2008), informing their decision to label pushing the person as *wrong* rather than
*seriously wrong*. Considering the eight and 10 year olds who cited the same master
category more often chose the label *seriously wrong*, this highlights how two
different age groups can weigh similar factors to reach a different outcome. Just as
Furby and Beyth-Marom (1992) stated, young people of all ages may engage in a
rational decision making process, but how they identify and subjectively value
outcomes and evaluate risk can lead them to reach different outcomes.

Age-based trends were also evident in the rationales of participants who
chose the label *seriously wrong* once they saw the *Deep Water* sign (Escalation
stage). As age increased, participants mentioned the qualities or abilities of the
victim that could increase or decrease the risks associated with being pushed into
the lake (most often swimming ability) and the dangers and/or hazards associated
with pushing the person more frequently. Thus, seeing the *Deep Water* sign helped
to clarify the risks associated with pushing the person, especially for older
participants. Again, this fits with older participants being able to inferentially
reason about a situation, think consequentialy, and actively engage their
reasoning processes. The fact that the rationales used by younger participants did
not change from the Invitation stage indicates they were possibly simply reciting
rule-based rationales, considering the use of such justifications did not alter when
new information (the *Deep Water* sign) was introduced.

The process by which participants chose the label *wrong* to describe the
Escalation stage was then investigated. Age was found to be associated with
mentioning qualities or abilities of the victim that would increase or decrease the
risks associated with pushing them into the lake (most often their swimming
ability). While this same association was found for participants that labelled this
stage *seriously wrong*, the age trend seen here was not linear, with 10 to 14 year
olds that chose the label *wrong* most often considering swimming ability when
evaluating risk. This is another example of participants citing similar factors even
though they reached different decisional outcomes (chose different legal
descriptors), indicating the way they considered these factors was subjective and
age-dependent (Furby & Beyth-Marom, 1992). At the master category level,
mentioning practical consequences linearly increased with age, a finding that
contradicted what was seen in the rock scenario. However, in the rock scenario,
practical consequences (such as damage to objects) were obvious, whereas here
identifying the practical consequences of pushing someone into a lake after seeing
the *Deep Water* sign likely requires deductive reasoning and consequential
thinking abilities. This would explain why older participants were better able to
identify the practical consequences of pushing the person. Again, this
demonstrates that younger participants did not actively engage with the scenario, relying on Preconventional, rule-based sentiments about risk (Gibbs et al., 1992; Kohlberg, 1969).

In the final stage of the lake scenario (Culmination stage), mentioning harm to people was not associated with age, meaning that the participants that chose *seriously wrong* most frequently identified the potential for harm to people, regardless of age. Mentioning putting someone’s life at risk was associated with age, a rationale that was mentioned more often as age increased. Similarly, mentioning that the victim did not deserve to be pushed into the lake was most often cited by 16 year olds, showing that they had moved away from having risk-based notions at the front of their mind to having motive-based notions readily available. These findings may be explained by the master category finding that mentioning the morality of pushing the person was associated with age and linearly increased with age, as both of these rationales were included in the morality master category. This mirrors the psychometric finding that sociomoral reasoning ability also linearly increased with age.

Together, these findings show that, as age increased, participants tended to identify rationales which demonstrated they could think of a broader range of consequences, and consider the morality or motivation of these acts. Thus, older participants showed an ability to think abstractly and consider aspects of the situation that were indicative of Conventional moral reasoning (Kohlberg, 1969). By contrast, younger participants typically engaged rule-based, concrete, or self-referential rationales, which focussed on risk, and that is more consistent with Preconventional moral reasoning (Kohlberg, 1969). However, age trends did not consistently fit either linear or curvilinear trajectories, indicating development is more variable than rationalist or psychosocial theories account for. The *doli*
incapax presumption accounts for such variability in development between the ages of 10 and 14. Thus, these findings provide support for maintaining the doli incapax presumption. However, it does raise the question as to whether the ages at which young people are presumed doli incapax should be extended to include 14 and 16 year olds, given the inconsistent age-trends seen throughout.

Summary

Developmental considerations. Using a non-traditional, discursive approach, this piece aimed to collect data in and around doli incapax in order to (1) scrutinise the use of the presumption as an age-based herding mechanism, (2) inform the process of individual competency assessments across the ages at which the presumptive direction of doli incapax changes, and (3) guide future investigative models. As discussed, data were collected from multiple sources, including psychometric indicators purporting to measure decision making and moral reasoning, and two vignettes depicting potentially criminal behaviour. These vignettes allowed exploration of age trends in the decisional outcomes and choice of legal descriptors used by young people at set points during the scenarios. They also shed light on the process young people reported using when making such decisions and choosing from the available labels. This thesis therefore explored the basis of the presumption of doli incapax and the distribution of core skills that relate to competence (moral reasoning and decision making) from numerous angles, using multiple methods.

The most consistent finding was that developmental trends were inconsistent. Although some indicators in this study showed a particular developmental trend that aligned with a particular theoretical perspective, other
indicators contradicted this trend, or showed an inconsistent, unexpected, or uninterpretable trend. While young people’s sociomoral reflection improved linearly with age, other psychometric measures showed curvilinear developmental trends, or measured these core competencies poorly. At times, there were no age-based trends in participants’ reported decisions and choice of legal descriptors (including seriously wrong and naughty), while at other times these outcomes varied. Further, the justifications that young people provided for their decisions and choices were sometimes associated with age. However, at other times, young people provided similar rationales regardless of age.

When reported process was associated with age, younger participants were more likely to be rule-based in their reasoning process, typically considering short-term factors that affected themselves as opposed to other people. Specifically, younger participants tended to focus on risks to themselves (including getting in trouble), as well as practical consequences (such as inanimate objects being damaged). Such rationales would be considered contra indicators of competent decision making and moral reasoning by rationalist theories, because they are rule-based and demonstrate only a superficial understanding of the possible consequences. It is likely that these rationales have been modelled to these younger participants by their parents, and they are simply reciting them. By contrast, older adolescents typically identified factors that showed a consideration of broader, psychosocial aspects of the situation. They tended to focus more on the risks to others, including that others could be harmed, the morality of the situation, (i.e. that it was not right to drop rocks or push the person), as well as social considerations, including the positive or negative social repercussions associated with dropping rocks or pushing the person. Such rationales would be considered indicators of competent decision making and moral reasoning under rationalist
and dual-process theories, as older participants were able to see a broader range of factors, identify the impacts on individuals other than themselves, and evaluate the situation as a whole, rather than focussing on the details (Reyna, 2004). Further, psychosocial theories would expect older participants to be making reference to social considerations when making decisions and judgements, as mid-adolescents have typically shifted to prioritising their peers’ opinions over their parents’ (Scott et al., 1995; Steinberg & Cauffman, 1996).

While this broad dichotomy in younger and older participants’ reasoning processes was found most of the time, it was not consistent across each question. At times, age trends followed patterns that were neither linear nor curvilinear, and thus could not be neatly explained by either rationalist or psychosocial theories. Further, even when the general statement was true that younger participants used concrete, rule-based rationales and older participants took a broader, more abstract view of the scenario, a perfect linear trend was not often seen when the use of such rationales were tracked across consecutive age groups. Further, participants just as often used a similar reasoning process regardless of age, meaning at times there were no developmental trends in their reported process. This highlights that young people’s development of legally relevant competencies is more variable than current psychological theories allow for, and is variable for a longer period of time than the law allows for.

Where age based differences were seen in the rationales young people provided, the question remains as to whether these were the function of actual age-based differences in reasoning processes, or whether older participants simply used more sophisticated language when expressing their ideas. Was just the content of young people’s rationales expressed differently or was their underlying process used to generate and consider these rationales different? At times,
participants of all age groups seemed to be reciting rationales, as their rationales did not change when new information was presented. This fits with the dual process notion that most decisions and judgements are made using Type 1 processes, which use mental short cuts and rely on heuristics to make decisions quickly (Reyna, 2004). However, at other times there was evidence of older participants engaging in an active, deliberate, Type 2 thinking process, particularly when initially presented with the lake scenario. Here, older participants not only labelled that scenario as less wrong than other age groups, but engaged with why pushing the person into the lake may or may not be justified from a moral standpoint. This showed they had engaged in a more active thinking process than younger participants, who continued to recite rationales about risk, similar to those they mentioned in the rock scenario.

Although this broad trend was discernable from the findings, numerous questions arose when interpreting this trend. Were these differences in rationales representative of developmental improvement in young people's ability to conceptualise and identify consequences? It was unclear if the developmental trends seen in the results captured actual changes in capacity, or whether they simply signalled changes in command of language or expression. Alternatively, age-trends in the use of some rationales may be a reflection of the information that young people are exposed to at different ages. For example, mid-adolescents may be more aware of peer pressure if they are exposed to information regarding bullying in the school environment. Other developmental considerations that arose when interpreting results were whether all participants understood the wording of the questions in the same way, or whether development affected their understanding even at that level.
On a more macro level, this study asked participants to imagine themselves in two hypothetical situations. It is likely that there were developmental trends in young people’s ability to do this. Further, development would affect the relationship between what participants reported they would do and what they would actually do if faced with the situation in real life. Thus, the factor that impacted and confounded the current findings most was development itself. What this ultimately highlights is that the task of measuring developmental trends while being sensitive to them is a difficult one.

**Implications for doli incapax.** The above discussed findings have implications for *doli incapax*. As mentioned, the law initially groups people based on age; those between 10 and 14 are presumed *doli incapax*, and those 14 and over are presumed *doli capax*. There were some findings that supported maintaining the current age-based changes in *doli incapax* at 10 and 14. First, the acquisition of sociomoral reasoning ability improved linearly with age, with significant age differences seen between all the age groups except for 10 and 12 year olds. Further, the sociomoral reasoning abilities of participants under the age of 14 were considered immature. Fourteen and 16 year olds were the only two age groups found to be consistently using mature moral reasoning. These findings provide support for maintaining the minimum age of criminal responsibility at 10, continuing to presume 10 to 13 year olds *doli incapax*, and the presumptive direction of *doli incapax* changing at age 14.

Some of the age-based trends in the rationales young people provided when justifying their decisions and choice of legal label also support maintaining the *doli incapax* presumption as it currently functions. Eight year olds were the age group that were most consistently rigid, easily lead, and self-focussed in their decision
making and moral reasoning processes. This was demonstrated in their: use of
similar rationales regardless of new information being introduced throughout the
rock and lake scenarios, agreement to push the person into the lake after being
coerced by their friend, and tendency to think of the risks to themselves (and their
friend) before the risks to others. Rationalist theories would see these findings as
indicating a lack of decision making and moral reasoning competence (Gibbs et al.,
1992; Kohlberg, 1969). Thus, the irrefutable presumption that eight year olds are
doli incapax is fitting. While 10 year olds displayed some of these same
characteristics, they did so less consistently than eight year olds. This supports the
legal presumption that some 10 year olds may be competent enough to be held
culpable for their offending (even though most are unlikely to be).

In support of presuming young people 14 and over to be doli capax, 14 and
16 year olds often stood out as providing rationales that were socially-focussed,
showed consideration of motive and morality, rather than just risk, and thought
about the consequences for a broad range of people (not just themselves). Such
rationales would be considered indicators of mature moral reasoning or decision
making under rationalist and dual-process theories. These rationales also align
with psychosocial theories, as they would predict mid-adolescents to be concerned
with the social ramifications of their actions, given the importance of peers to this
age range (Scott et al., 1995; Steinberg & Cauffman, 1996). Further, 14 and 16 year
olds showed evidence of being able to actively reason through the morality and
motivation associated with pushing the person into the lake, by discussing
whether pushing the person was justified.

However, inconsistent developmental trends overall bring the ages at which
the doli incapax presumption changes into question. Age trends were not always
linear, challenging the legal presumption that young people progressively gain the
requisite abilities to be found *doli capax* with age. For example, when justifying their decision not to drop rocks after their friend tried to convince them to do so (Coercion stage), 12 year olds were the age group most likely to cite rationales that fell into the mater categories of practical consequences, and social considerations. Further, even though there was a trend for 14 and 16 year olds to provide rationales that were socially-focussed, showed consideration of motive rather than just risk, and thought about the consequences for a broader range of people (not just themselves), they did not consistently provide such rationales at every question. The inconsistency seen in developmental trends across all age groups, including 14 and 16 year olds, means that young people are still developing the requisite competencies to be held culpable for longer than the law currently presumes.

Although there is some evidence that would support extending the ages at which young people are conditionally presumed *doli incapax* (beyond 14), there is more evidence in support of maintaining the *doli incapax* presumption as it currently stands. Further, enshrining *doli incapax* in statute should be considered to ensure that young people's developing competence is raised as a central legal issue as a matter of course. This would hopefully address the issue of the *doli incapax* presumption being inconsistently applied to criminal cases involving young people (Cashmore, 2000). However, steps should be taken to avoid the issue seen in other Australian states where the legal standard has changed when enshrined in statute, without being empirically informed (see Chapter 2 for discussion on this point). Should further research support an extension of *doli incapax* past the age of 14, this would not necessarily mean fewer young people would be held accountable for their criminal behaviour. Such a change would
simply recognise that development remains variable beyond 14 years of age, and would help to protect the young people still too immature to be held accountable.

Regardless of whether young people are initially presumed *doli incapax* or *doli capax*, if their competence is contested, they may have their competence individually assessed to establish whether they knew their actions were *seriously wrong* at the time of the offence. However, individual competency assessments in their current state are problematic for a number of reasons. As mentioned in Chapter 2, being able to recognise your actions are *seriously wrong* as opposed to *naughty* requires both moral reasoning and decision making abilities. Thus, the notions of *seriously wrong* and *naughty* are designed to represent a significant shift in a young person’s competence and ability to understand the seriousness of their actions at the time of the offence. Here, participants were asked to choose from a list of terms including *seriously wrong* and *naughty* when describing the rock and lake scenarios, and it is acknowledged that the legal process of establishing the accused knew their actions were *seriously wrong* is a more involved process (Bartholomew, 1998; Crofts, 1998). Nevertheless, the finding that the terms *seriously wrong* and *naughty* rarely differentiated between moral reasoning and decision making abilities (as measured by psychometric instruments) raises questions about the utility of these terms. The position of this thesis is that young people’s use of the terms *seriously wrong* and *naughty* is a poor indicator of their competence. Thus, assessments looking to examine competence under *doli incapax* must involve a more in-depth investigation of these constructs, or consider revising these terms to better capture the abilities they represent.

Most of the developmental psychometric instruments used here were not able to reliably capture developmental trends, highlighting another issue with individual competency assessments. Thus, these instruments added little value
above and beyond the current legal process. Considering the main purpose of these measures is to act as developmental indicators of competence, the lack of sensitivity and reliability in measuring developmental trends is concerning. This highlights a significant gap in the current developmental psychometric instruments, which purport to measure moral reasoning and decision making. It also means that assessments looking to tap these competencies are going to be largely inaccurate, especially for younger age groups. This is especially concerning when such psychometric measures are used to inform the court of a young person's culpability. Further, this highlights the need for a developmentally appropriate, legally relevant interview protocol that can assist with the assessment of *doli incapax* from the age of 10.

The exception to this criticism is the Sociomoral Reflection Measure – Short Form (SRM-SF) (Gibbs et al., 1992). Despite a lack of use with eight and 10 year olds in much of the previous research, this instrument reliably measured sociomoral reflection across all included age groups. The SRM-SF is an excellent example of a measure that can reliably tap into development constructs across a broad range of ages. This can be attributed to numerous aspects of the SRM-SF, particularly the use of a production-based design, which encourages the participant to generate moral reasons. Underpinning this production-based design is a solid, stage-based theoretical model of moral reasoning, which allows development to be tracked from immature to mature moral reasoning. The SRM-SF is also accompanied by a manual, which collates years of research findings in order to provide a comprehensive set of rationales people are likely to provide. This allows people's responses to be coded in line with the appropriate stage of moral development. Finally, the manual incorporates a training system to ensure a certain level of competence in those scoring the SRM-SF.
Ideally, a standardised interview protocol, utilising some of these same elements as the SRM-SF, would be developed for assessing competence when *doli incapax* is at issue. Considering there is currently no standardised way that psychologists conduct *doli incapax* competency assessments, developing an interview protocol that ties together what was found in the present study and what is known from the current developmental theories and research is recommended. The process-based investigation of how young people justified their choice of legal labels and their reported decisions to drop rocks or push the person provided insights into factors that assessors should look for as indicators of competence under *doli incapax*. First, in terms of moral reasoning, if a young person mentions rationales related to morality (e.g. mentioning the victim doesn’t deserve to be victimised, that the risky act is immoral or wrong, that engaging in the risky act would be on their conscience), and/or social considerations (e.g. peer pressure, positive or negative social repercussions of engaging in the risky act) this may indicate mature moral reasoning, or Conventional moral reasoning abilities (Gibbs et al., 1992; Kohlberg, 1969). It should be noted that these trends were seen at the master category level. Thus, assessors should be mindful of different age groups expressing these sentiments using different words. However, if the young person in question expresses such moral sentiments in a stereotypical or rigid manner (e.g. “that’s wrong”, “that’s a bad idea”) and cannot provide elaboration as to why they think that, this would indicate immature moral reasoning competence, or Preconventional moral reasoning abilities (Gibbs et al., 1992; Kohlberg, 1969).

Second, in terms of decision making, if the young person being assessed can identify risks to a broader range of people than just themselves or those directly present (i.e. risks to others rather than just self), can generate decision alternatives that would reduce the risks in that situation, or can predict the possible reactions
of other people in the situation (e.g. identifying that the person on the railing may not be able to swim, and this could increase the risks associated with pushing the person into the lake), these would be indicators of competence. Rationales that would indicate a lack of decision making competence would be the young person focussing on the risks to themselves (e.g. getting in trouble), noting only obvious, practical consequences (such as inanimate objects being damaged), and mentioning the same rationales regardless of additional information.

Aside from the content of young people's rationales, the questions that are asked, how these are phrased, and when these are asked in the assessment process provide developmental insights. Younger participants often recited the same answers regardless of how the question was asked or whether new information was present. Thus, asking multiple, similarly worded questions will likely highlight young people that have limited competence, while allowing young people who are competent to elaborate further. It should also be kept in mind that older participants were more verbose as a rule, and produced more rationales than young people. This is not necessarily indicative of competence, although does give them more opportunities to mention a rationale that would indicate competence. Asking multiple questions would also allow assessors to see if young people's rationales changed if new information was introduced, which would be indicative of the individual engaging in an active thinking process.

**Limitations and Future Research**

There were positives and negatives associated with using a scenario-based method. Benefits included allowing participants some control over their decisions and the decisional path they took throughout the scenarios, (something previous research had not attempted). This “choose-your-own-adventure” method allowed
participants to make decisions in real time, and directed their path through the scenario. Further, asking about process provided insights into their choices at more than one point during the scenario. Similarly, this method allowed participants to label the scenario at numerous points using legal labels (including *seriously wrong* and *naughty*). Thus, changes in how wrong participants thought the scenarios were could also be tracked and explored. The third element, open-ended questions, provided insights into what young people reported thinking when making decisions and labelling the scenarios. The combination of these elements allowed for a broad exploration of the research questions, and provided rich data, which was necessary given the broad aims of this study. While this breadth was an asset to the current study, approaching *doli incapax* from so many angles meant a significant amount of time was committed to collecting, analysing, and reporting data.

The major limitation associated with using scenario-based research was that participants were not in the decision making situation itself. They had to imagine themselves in the hypothetical situation, which is possibly an ability that develops or changes with age. Thus, their responses likely reflected their logical, rational decision making and moral reasoning abilities rather than their abilities under decisional stress or while emotionally activated (Cauffman & Steinberg, 1995; Cauffman & Steinberg, 2000). This would help to explain the finding that indicators of decision making and moral reasoning competence generally increased with age, consistent with rationalist models of decision making and moral reasoning, as participants would have been engaging their logical “cold” cognitive abilities, rather than being triggered by psychosocial factors and reasoning while emotionally activated. Nevertheless, efforts were made in this study to make the vignettes realistic and engaging by using a choose-your-own-
adventure format, including photos to assist participants to visualise the situation, and presenting participants with an actual rock (see Appendix C). These additions built upon previous scenario-based tools, many of which are unrealistic, unimaginative, and lack application to young people.

Any future efforts to make scenario-based research feel more realistic or to simulate aspects of real-life risky situations, while remaining ethical, would help to elucidate changes in young people’s decision making and moral reasoning processes while psychosocial pressures are present. One possibility would be administering the vignettes to young people alone and in the company of their peers, similar to Gardner and Steinberg’s (2005) methodology, to investigate the influence of peer presence. Another possibility would be to simulate a more realistic decision making setting, perhaps using a computer-based task, in which participants progress through the stages of both scenarios and are asked questions while visually engaged in the task, rather than simply sitting opposite a researcher while answering the interview questions.

Considering young people are a difficult sample to access because their participation in research requires parent or guardian consent, a substantial number of participants were interviewed for this thesis. However, the sample size, composition of the sample, and nature of the task meant that small numbers of participants reported they would engage in risky behaviour. Thus, the current sample is unlikely to be representative of the young people that appear before the Children’s Court. Future research should seek a more diverse sample in terms of cultural background and socio-economic status. Research conducted with a larger, demographically diverse sample would help to illuminate the characteristics and processes associated with young people reporting they would engage in risky
behaviour. A sample of this nature would also help to shed light on the factors young people consider when assessing situations as wrong or naughty. Findings showed young people who reported they would engage in risky behaviour were likely to see doing so as wrong or naughty, rather than seriously wrong, so these may be the individuals more likely to appear before the Children’s Court. Thus, any insights into the decision making and moral reasoning processes used by these individuals would be valuable in developing a standardised doli incapax interview protocol.

In the present study, collecting so many interviews from young people required a large research team. While the number of interviews could not have been possible without a research team of this size, there was variation in how expansive researchers were when conducting interviews. It was evident from interview transcripts that some researchers consistently asked follow up questions, giving the participant opportunity to say more in response to open-ended questions. Other researchers inconsistently used follow up questions. Future research of a similar nature should select researchers carefully, engage in thorough training, and monitor the quality of interviews throughout the data collection process to ensure data collection is standardised, and all participants are given equal opportunity to elaborate on their answers.

The use of legally relevant age groups spaced at two-year intervals in the present study meant the developmental trends captured were specific and could be directly related to the ages at which the doli incapax presumption changes (10 and 14). Future research should maintain these age groups, and consider the inclusion of older age groups for comparison. The inclusion of adults (perhaps 18 and 20 year olds) would help to shed light on how much moral reasoning and

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166 It is noted that this was not the purpose of the current investigation. However, future research exploring such a line of enquiry would build upon the present findings.
decision making abilities continue to change past the age of 16, and would therefore serve as a comparison point for age groups currently presumed *doli incapax*. When designing future research, it should be noted that many of the developmental decision making and moral reasoning measures used here did not reliably measure developmental trends across eight to 16 year olds. Research using the same or similar age range could utilise the Sociomoral Reflection Measure – Short Form (Gibbs et al., 1992), as this was reliable with all included age groups. However, alternative developmental decision making psychometric measures would need to be sourced or developed for use in future research of this nature.

Arguably, many of these limitations stem from the *doli incapax* presumption being poorly defined from a psychological perspective. Although there have been efforts made to better understand and define *doli incapax* from a legal standpoint (see Bartholomew, 1998; Crofts, 1998; 2003), the psychological underpinnings of *doli incapax* lack exploration. While this study began such an exploration, the lack of clarity around certain aspects of *doli incapax* was part of why it was so difficult to explore the presumption, which lead to using numerous indicators in an effort to better understand concepts that parallel *doli incapax*. In particular, the terms *seriously wrong* and *naughty* lack operationalised definitions, making them of questionable utility when processing young people. Thus, future research on the topic of *doli incapax* would benefit from better understanding how young people conceptualise the terms *seriously wrong* and *naughty*.

A conceptual (not mathematical) continuum of “wrongness” exists between the terms *seriously wrong* and *naughty*. However, it is unclear whether young people perceive these terms in the same way across age groups. Future research could ask participants to freely label the rock and lake scenarios before asking
them to choose from a list of provided legal labels (including seriously wrong and naughty). This would help to understand the type of language young people spontaneously use, as well as the relationship between participants’ freely produced terms and the provided legal descriptors. Utilising open-ended questions where young people justify or define both their freely produced term, and their choice of legal label, would provide further insight into how young people use and understand the terms seriously wrong and naughty. Further, standardising the age of the person to be pushed into the lake (perhaps at age 10) would provide clarity in the decisions, labels and process used particularly by older participants, as the risk of pushing a same-aged peer in was reduced for them.

Considering the importance of doli incapax as a protective mechanism, and the dearth of legally relevant research, any psychological research that contributes to the empirical understanding of the criminal culpability of young people as it relates to doli incapax would be a welcome addition. Ideally, a standardised, jurisdiction-specific interview or assessment protocol would be developed (as discussed above). However, it is recognised that the functioning and wording of doli incapax varies across jurisdiction, and the presumption does not exist in some jurisdictions around the world. Thus, such a measure is unlikely to draw research attention, given its potentially specific application. The development of reliable developmental measures of core psychological competencies (decision making and moral reasoning) would reduce the need for a doli incapax-specific measure. As mentioned, current developmental assessment tools fail to capture developmental trends. There is a degree of difficulty associated with creating a measure that can be understood by a large range of ages, while remaining sensitive enough to measure varying developmental trends. However, such a measure is pertinent to not only furthering developmental research, but also being able to accurately
assess young people’s competence and thus culpability with relation to *doli incapax*. The dominant message from this thesis is that such a task is far from simple.

**Conclusion**

As a preliminary, psycholegal exploration into *doli incapax*, this thesis has contributed much needed empirical data to the *doli incapax* debate. As this thesis showed, the pace at which young people develop maturity of judgement is hugely varied, and dependent on tasks requirements. Young people showed evidence of more advanced moral reasoning and decision making skills when they were able to identify a broader range of consequences, to look at consequences that affected others, not just themselves, and to think about the risks associated with the situation as a whole, rather than getting caught up in the details. Young people demonstrated less developed decision making and moral reasoning skills when they were self-referential, focussed on how the situation would affect themselves rather than others, were concrete in the rationales they gave, and were not able to think about the situation as a whole. Broad age trends in these findings provided some empirical support for maintaining the *doli incapax* presumption in its current form. There was also some evidence that 14 and 16 year olds were still developing their moral reasoning and decision making capacities. However, considering the inconsistency seen in the age trends in this study, and the preliminary nature of this investigation, no recommendation is made for altering the *doli incapax* presumption at this time. Further research is recommended to continue engaging with this issue.

The terms *seriously wrong* and *naughty* under performed as indicators of decision making and moral reasoning competence. Although these terms have
historical and legal relevance, this study highlighted the need to move towards a more valid way of assessing young people’s competence. Considering that this thesis exposed the dearth of developmental psychometric instruments that were able to reliably measure developmental trends, the task of creating a legally-relevant, developmentally sensitive interview protocol for the purpose of assessing moral reasoning and decision making competence is significant. This thesis has shown that the presumption of *doli incapax* is a necessary legal safeguard for young people, given their varied rates of development. The presumption of *doli incapax* as it stands under common law in Victoria, Australia should be maintained, if not enshrined in statute to ensure the law continues to acknowledge that young people develop the necessary competencies to be held culpable for their actions at varying rates, especially during early adolescence.

While this thesis has contributed some much needed psychological data to the *doli incapax* debate, there are different pressures placed on *doli incapax* from different perspectives. From a human rights or cultural relativism stance, the minimum age of criminal responsibility should be raised to 12 years of age so that Australia can consider itself an international citizen by upholding the UN Convention on the Rights of the Child (United Nations, 2007). From a criminological standpoint, welfare and justice perspectives need to be balanced. Thus, *doli incapax* should be maintained if not expanded to ensure that young people are not disadvantaged by an adversarial court system. A procedural view would argue for better legal guidelines associated with processing young people in the Children’s Court, as *doli incapax* is inconsistently applied across metropolitan and rural regions of Victoria. This thesis highlights the need for an empirically driven, psychological position on *doli incapax*. While efforts have previously been made to collate psychological research relevant to the legal question of criminal
culpability, *doli incapax* deserves psycholegal research in its own right. Frankly, the lack of psychological data pertaining to the issue of young people’s culpability as determined by *doli incapax* is not good enough. Immediate research attention should be paid to *doli incapax* and the psychological issues surrounding the presumption. Without such research attention, the psychological perspective cannot meaningfully take a position on *doli incapax*, and should consider exiting the *doli incapax* debate.
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Appendices

Appendix A. Variation in the order measures were presented in the interview booklet.

The order that the psychometric instruments and measure of *doli incapax* appeared in the questionnaire were varied as per the table below:

Table A1. *The order in which each measure appeared in the interview booklet*

<table>
<thead>
<tr>
<th>Version of the questionnaire</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
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</thead>
<tbody>
<tr>
<td>Version 1</td>
<td>CADI</td>
<td>SRM-SF</td>
<td>MIIV</td>
<td>ADMQ</td>
<td>YDMQ</td>
</tr>
<tr>
<td>Version 2</td>
<td>SRM-SF</td>
<td>ADMQ</td>
<td>CADI</td>
<td>YDMQ</td>
<td>MIIV</td>
</tr>
<tr>
<td>Version 3</td>
<td>MIIV</td>
<td>YDMQ</td>
<td>SRM-SF</td>
<td>CADI</td>
<td>ADMQ</td>
</tr>
<tr>
<td>Version 4</td>
<td>ADMQ</td>
<td>SRM-SF</td>
<td>YDMQ</td>
<td>CADI</td>
<td>MIIV</td>
</tr>
<tr>
<td>Version 5</td>
<td>YDMQ</td>
<td>CADI</td>
<td>MIIV</td>
<td>SRM-SF</td>
<td>ADMQ</td>
</tr>
</tbody>
</table>

CADI: Competencies Associated with Doli Incapax (created for the purposes of this thesis).

SRM-SF: Sociomoral Reflection Measure – Short Form (Gibbs, Basinger & Fuller, 1992).

MIIV: Moral Interpretation of Interpersonal Violence Scale (Krcmar & Valkenburg, 1999)


YDMQ: Youth Decision Making Questionnaire (Cauffman, & Steinberg, 2000).
Appendix B. Number of times each version of the questionnaire was administered

Table B1. *Number of times each version of the questionnaire was administered*

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Number of times administered</th>
<th>Percentage of total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version 1</td>
<td>47</td>
<td>19.2</td>
</tr>
<tr>
<td>Version 2</td>
<td>50</td>
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<tr>
<td>Version 3</td>
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<td>18.8</td>
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<tr>
<td>Version 4</td>
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<tr>
<td>Version 5</td>
<td>53</td>
<td>21.6</td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
<td>100</td>
</tr>
</tbody>
</table>
- QUESTIONNAIRE – v1 (blue cover)

Data collector: ________________________________

ID code (data entry): ________________

Ask the parent/guardian:

1. The potential participant’s age? ______ years

2. The potential participant’s date of birth?

/ / 

NOTE: the participant must be aged 8, 10, 12, 14 or 16 (i.e. can’t be 11yrs 6mths) in order to qualify for the study. If the participant if one of these ages, continue to next question.

If the potential participant is not one of these specified ages, ask the parent/guardian if it’s OK to contact them when the participant will be 8, 10, 12, 14 or 16?

Date eligible: / / 

Contact name:

Preferred contact number / email address:

3. Is English the language mostly spoken at home?

Yes – continue to next question

No __________________________

If no is circled, thank the parent/guardian and/or potential participant for their time, and let them know that unfortunately their child does not meet the criteria for inclusion in the study.

4. Has the participant ever been diagnosed with an intellectual disability?

No – continue to next page

Yes __________________________

If yes is circled, thank the parent/guardian and/or potential participant for their time, and let them know that unfortunately their child does not meet the criteria for inclusion in the study.
DEMOGRAPHICS

Date of Interview: / / 201

Time of Commencement: am/pm

SAY: Thanks for agreeing to do this.
Ask a couple of these warm up
- What kind of music are you into?
- How was school?
- What grade are you in?
- What footy team do you go for?
- What did you get up to on the weekend?
- What do you know about what we're doing today?
- Do you have any questions?

Age

SAY: How old are you? Only note years, can calculate months

<table>
<thead>
<tr>
<th>Years</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

Gender:

SAY: Are you male or female?

Male Female

Postcode or Suburb: ________________________________

SAY: OK, thanks for that. Let’s move on to the questions. In this first set of questions, I’m going to give you a situation, and I want you to tell me what you would do and what you would think about when in the situation. There are no right or wrong answers, just tell me your opinion, tell me what you think. Try and imagine that you are in this situation right now and just say what comes to your mind – your first reaction. Let me know if you have any questions along the way, or if you want a break. OK, ready to start?
Make sure the participant has response options E1 in front of them.

SAY: Here are the possible answers to the questions. There are not right or wrong answers, these are just the choices. They will change depending on the questions I ask.

SAY: You are riding your bike with a friend, who is the same age as you, and you come to a bridge that goes over

SAY: Your friend suggests that you ride to the middle and drop some rocks off the bridge. The rocks you can see look like this

B.S1. How would you describe dropping rocks off the bridge [out of these options]?

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

B.S2. Why do you think that?

________________________________________________________________________________________

Any other reasons you think that’s [response option]?

________________________________________________________________________________________

B.S3. Would you go with your friend? YES NO

B.S4. Why / Why not?

________________________________________________________________________________________

B.S5. What could happen if you went with your friend?

________________________________________________________________________________________

Anything else that could happen if you went with your friend?

________________________________________________________________________________________

B.S6. What could happen if you say you don’t want to go with your friend?

________________________________________________________________________________________

Anything else that could happen if you say you don’t want to go with your friend?

________________________________________________________________________________________

If YES – Turn to page 7. If NO - Turn to page
SAY: Your friend says “Come on, it will be fun to drop rocks off the bridge and see what happens. It’s not a big deal. Don’t be such a wimp.”

B.N1. Would this change your mind about going with your friend?  YES  NO

B.N2. Why / why not?

If participant would now go with the friend – turn to

If participant would still not go with friend

SAY: You stay on the side of the bridge and watch your friend ride to the middle. They drop a rock off the bridge and a car on the freeway swerves to miss the rock

B.NN1. Do you think your friend dropping a rock off the bridge is...?

Not wrong at all  Naughty  Wrong  Seriously Wrong

B.NN2. Why do you think that?

Any other reason you think that’s [response option]?

B.NN3. At this point, what could happen?

Anything else that could happen at this point?
SAY: Your friend then drops a second rock off the bridge. You see the rock smash a car windscreen, and the car stops at the side of the road.

B.NN4. Do you think your friend dropping a rock off the bridge is...?

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

B.NN5. Why do you think that?

________________________________________________________________________

Any other reasons you think that's [response option]?

________________________________________________________________________

B.NN6. What makes dropping rocks from a bridge onto a freeway [say response option]?

________________________________________________________________________

What is [response option] about that?

________________________________________________________________________

B.NN7. Knowing that the rock hit the car windscreen, what could have happened to the people in the car?

________________________________________________________________________

Anything else that could have happened to the people in the car?

________________________________________________________________________
B.NN8. Knowing that the rock hit the car windscreen, what could have happened to the other cars on the freeway?

________________________________________________________________________________________

Anything else that could have happened to the other cars on the freeway?

________________________________________________________________________________________

B.NN9. Knowing that the rock hit the car windscreen, what could happen to you?

________________________________________________________________________________________

Anything else that could have happened to you?

________________________________________________________________________________________

SAY: Thanks, now I'm going to ask you about a different story.

Remove pictures P1 and P2 and rock

END – MOVE TO NEXT VIGNETTE (on page 10)
- PARTICIPANTS WHO SAID YES TO THEIR FRIEND JOIN HERE -

SAY: You and your friend ride to the middle of the bridge.

Show participant picture P2

SAY: Your friend drops a rock off the bridge onto the freeway below. You see a car swerve to miss the rock.

B.Y1. Do you think your friend dropping a rock off the bridge is...?

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

B.Y2. Why do you think that?

__________________________________________________________

__________________________________________________________

Any other reasons you think that's [response option]?

__________________________________________________________

__________________________________________________________

SAY: Your friend then tells you that it’s your turn to drop a rock.

B.Y3. What would you do? DROP THE ROCK NOT DROP THE ROCK

B.Y4. Why would you do that?

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

B.Y5. At this point, what could happen?

__________________________________________________________

__________________________________________________________

__________________________________________________________

Anything else that could happen at this point?

__________________________________________________________

__________________________________________________________

If drop the rock – Turn to page 8. If not drop the rock – Turn back to page 5.
SAY: You drop the rock off the freeway overpass. The rock you dropped smashes the windscreen of a car on the freeway, and you see the car stops at the side of the road.

B.YY1. Do you think dropping a rock off the bridge is...?

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

B.YY2. Why do you think that?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Any other reasons you think that's [response option]?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

B.YY3. What makes dropping rocks from a bridge onto a freeway [say response option]?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

What is [response option] about that?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

B.YY4. Knowing that the rock hit the car windscreen, what could have happened to the people in the car?

________________________________________________________________________
________________________________________________________________________
Anything else that could have happened to the people in the car?

________________________________________________________________________
________________________________________________________________________
B.YY5. Knowing that the rock hit the car windscreen, what could have happened to the other cars on the freeway?

Anything else that could have happened to the other cars on the freeway?

B.YY6. Knowing that the rock hit the car windscreen, what could happen to you?

Anything else that could happen to you?

SAY: Thanks, now I’m going to ask you about a different story.

Remove pictures P1 and P2 and rock

MOVE TO NEXT VIGNETTE (on next page).
**W.S1.** How would you describe pushing that person into the lake [out of these options]?  

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughtily</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

**W.S2.** Why do you think that?  

________________________________________

Any other reasons you think that's [response option]?  

________________________________________

**W.S3.** Would you go with your friend? YES NO

**W.S4.** Why / Why not?  

________________________________________

________________________________________

**W.S5.** What could happen if you went with your friend?  

________________________________________

Anything else that could happen if you went with your friend?  

________________________________________

**W.S6.** What could happen if you say you don’t want to go with your friend?  

________________________________________

Anything else that could happen if you say you don’t want to go with your friend?  

________________________________________

**If YES – Turn to page 14.**  

**If NO - Turn to page 11.**
SAY: Your friend says “If you don’t come with me, you’re a loser and I’m not hanging out with you anymore. Trust me, it’ll be funny.”

W.N1. Would this change your mind about going with your friend?  
YES  NO

W.N2. Why / why not?

If participant would now go with the friend – turn to page 14

If participant would still not go with the friend, continue

SAY: You stay where you are, and watch your friend walk up behind the girl / guy from school. You notice

W.NN1. Do you think your friend going to push that person into the lake is...?

Not wrong at all  Naughty  Wrong  Seriously Wrong

W.NN2. Why do you think that?

Any other reasons you think that’s [response option]?

W.NN3. At this point, what could happen?

Anything else that could happen at this point?
SAY: Your friend walks up behind the girl / guy from school. Your friend pushes the girl / guy into the water. You can see the girl / guy in the water. They are splashing around in the water and yelling out “I can’t swim”.

W.NN4. Do you think your friend pushing that person into the lake is...?

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

W.NN5. Why do you think that?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Any other reasons you think that's [response option]?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

W.NN6. What makes pushing that person into the lake [say response option]?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

What is [response option] about that?
________________________________________________________________________
________________________________________________________________________

Continued on next page...
W.NN7. Knowing that the person in the lake can’t swim, what could happen to her / him?

Anything else that could happen to her / him?

W.NN8. Knowing that the person in the lake can’t swim, what could happen to you?

Anything else that could happen to you?

SAY: OK. That’s the end of that set of questions. Well done. In the next set of questions, we want to find out the things you think are important, and especially why you think they are important. Please try to help us understand your thinking by SAYING AS MUCH AS YOU CAN TO EXPLAIN. If you can explain better or use different words to show what you mean, this helps us even more. Again, there is no right or wrong answer, so just say what you think.

Remove pictures P3 and P4

END OF MEASURE. TURN TO PAGE 17.
- PARTICIPANTS WHO SAID YES TO THEIR FRIEND JOIN HERE -

SAY: You and your friend walk up behind the girl / guy from school. You walk past this sign:

Show participant picture P4

W.Y1. Do you think that going to push that person into the lake is...?

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

W.Y2. Why do you think that?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

Any other reasons you think that’s [response option]?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

W.Y3. Would you keep going? YES NO

W.Y4. Why / Why not?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

W.Y5. At this point, what could happen?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

Anything else that could happen at this point?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

If participant would keep going – Turn to page 15.
If participant would stop – Turn back to page 12.
**SAY:** You and your friend walk up behind the girl / guy from school, and push them into the lake. You can see the girl / guy in the water. They are splashing around in the water and yelling out “I can’t swim”.

**W.YY1.** Do you think pushing that person into the lake is...?

<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously Wrong</th>
</tr>
</thead>
</table>

**W.YY2.** Why do you think that?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Any other reasons you think that’s [response option]?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

**W.YY3.** What makes pushing that person into the lake [say response option]?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

What is [response option] about that?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

**W.YY4.** Knowing that the person in the lake can’t swim, what could happen to her / him?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Anything else that could happen to her / him?

________________________________________________________________________

________________________________________________________________________
W.YY5. Knowing that the person in the lake can’t swim, what could happen to you?

 Anything else that could happen to you?

 SAY: OK. That’s the end of that set of questions. Well done. In the next set of questions, we want to find out the things you think are important, and especially why you think they are important. Please try to help us understand your thinking by SAYING AS MUCH AS YOU CAN TO EXPLAIN. If you can explain better or use different words to show what you mean, this helps us even more. Again, there is no right or wrong answer, so just say what you think.

 Remove pictures P3 and P4
Make sure participants have response options D1 in front of them

1. Think about when you’ve made a promise to a friend. How important is it for people to keep promises, if they can, to friends?

1.1 Circle one:

very important important not important

1.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

1.3 Any other reasons that it’s [response option] for people to keep promises, if they can, to friends?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2. What about keeping a promise to anyone? How important is it for people to keep promises, if they can, even to someone they hardly know?

2.1 Circle one:

very important important not important

2.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

2.3 Any other reasons that it’s [response option] for people to keep promises, if they can, even to someone they hardly know?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
3. How about keeping a promise to a child? How important is it for parents to keep promises, if they can, to their child?

3.1 Circle one:

very important   important   not important

3.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________

________________________________________

________________________________________

3.3 Any other reasons that it’s [response option] for parents to keep promises, if they can, to their child?

________________________________________

________________________________________

________________________________________

4. In general, how important is it for people to tell the truth?

4.1 Circle one:

very important   important   not important

4.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)

________________________________________

________________________________________

________________________________________

4.3 Any other reasons that it’s [response option] for people to tell the truth?

________________________________________

________________________________________

________________________________________
5. Think about when you've helped your mother or father. How important is it for children to help their parents?

5.1 Circle one:

very important       important       not important

5.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5.3 Any other reasons that it's [response option] for children to help their parents?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6. Let's say a friend of yours needs help and may even die, and you're the only person who can save him or her. How important is it for a person (without losing his or her own life) to save the life of a friend?

6.1 Circle one:

very important       important       not important

6.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6.3 Any other reasons that it's [response option] for a person (without losing his or her own life) to save the life of a friend?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
7. What about saving the life of anyone? How important is it for a person (without losing his or her own life) to save the life of a stranger?

7.1 Circle one:
very important           important           not important

7.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

7.3 Any other reasons that it's [response option] for a person to save the life of a stranger without losing his or her own life?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

8. How important is it for a person to live even if that person doesn't want to?

8.1 Circle one:
very important           important           not important

8.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

8.3 Any other reasons that it's [response option] for a person to live even if that person doesn't want to?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
9. How important is it for people not to take things that belong to other people?

9.1 Circle one:

<table>
<thead>
<tr>
<th>very important</th>
<th>important</th>
<th>not important</th>
</tr>
</thead>
</table>

9.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

9.3 Any other reasons that it’s [response option] for people not to take things that belong to other people?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

10. How important is it for people to obey the law?

10.1 Circle one:

<table>
<thead>
<tr>
<th>very important</th>
<th>important</th>
<th>not important</th>
</tr>
</thead>
</table>

10.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

10.3 Any other reasons that it’s [response option] for people to obey the law?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
11. How important is it for judges to send people who break the law to jail?

11.1 Circle one:
very important
important
not important

11.2 WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT (WHICHEVER ONE YOU CIRCLED)?

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

11.3 Any other reasons that it’s [response option] for judges to send people who break the law to jail?

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

Remove response options from table

SAY: Great, thanks for answering those questions. Now I'm going to ask you about a couple of different stories. Again, there are no right or wrong answers.
Make sure that the child/young person has response options A1 in front of them

Read to the participant:

**SAY:** Frank works in a supermarket. He has big muscles and exercises every day. One day, his friend Jeff asks Frank why he is lying to him. Frank gets angry and kicks his friend several times.

1. Was Frank: Right Wrong In the middle

**Show young person response options A2**

2. How right / wrong was Frank?

**Direct participant to the end of the scale they identified**

<table>
<thead>
<tr>
<th>Very, very wrong</th>
<th>Very wrong</th>
<th>A little wrong</th>
<th>In the middle</th>
<th>A little right</th>
<th>Very right</th>
<th>Very, very right</th>
</tr>
</thead>
</table>

3. What do you mean when you say that Frank was [say response option]?  


4. Anything else that makes what Frank did [response option]?  


5. Why is that [response option]?  


Put response options A1 facing up

Read to the participant:

SAY: Paul is walking home with his sister. A man grabs her hand bag, pushes her down, and runs away. Paul chases the man to get the hand bag back. When he gets hold of the thief, he kicks him several times and grabs the hand bag.

1. Was Paul: Right Wrong In the middle

Put response options A2 facing up

2. How right/wrong was Paul?

Direct participant to the end of the scale they identified

<table>
<thead>
<tr>
<th>Very, very wrong</th>
<th>Very wrong</th>
<th>A little wrong</th>
<th>In the middle</th>
<th>A little right</th>
<th>Very right</th>
<th>Very, very right</th>
</tr>
</thead>
</table>

3. What do you mean when you say Paul was [say response option]?

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

4. Anything else that makes what Paul did [response option]?

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

5. Why is that [response option]?

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________
Put response options A1 facing up

Read to the participant:

SAY: Barry is a tall guy. One day, his neighbour accidentally parked his car too close to Barry’s car. Barry became extremely angry and started to punch his neighbour. His neighbour had to go to the hospital.

1. Was Barry: Right Wrong In the middle

Put response options A2 facing up

2. How right/wrong was Barry?

Direct participant to the end of the scale they identified

<table>
<thead>
<tr>
<th>Very, very wrong</th>
<th>Very wrong</th>
<th>A little wrong</th>
<th>In the middle</th>
<th>A little right</th>
<th>Very right</th>
<th>Very, very right</th>
</tr>
</thead>
</table>

3. What do you mean when you say Barry was [say response option]?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

4. Anything else that makes what Barry did [response option]?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

5. Why is that [response option]?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
Put response options A1 facing up
Read to the participant:

SAY: Philip's grandmother lives in a neighbourhood that is frightened by some young men from a gang. The gang members regularly demand money from the older people. The older people usually refuse, but they are frightened. One day, Philip is staying over at his grandmother’s when the doorbell rings. One of the gang members comes in and demands a drink and some money. Philip jumps from behind the curtain and starts to punch the gang member. The gang member had to go to the hospital.

1. Was Philip: Right Wrong In the middle
Put response options A2 facing up

2. How right/wrong was Philip?

Direct participant to the end of the scale they identified

<table>
<thead>
<tr>
<th>Very, very wrong</th>
<th>Very wrong</th>
<th>A little wrong</th>
<th>In the middle</th>
<th>A little right</th>
<th>Very right</th>
<th>Very, very right</th>
</tr>
</thead>
</table>

3. What do you mean when you say that Philip was [say response option]?

4. Anything else that makes what Philip did [response option]?

5. Why is that [response option]?

Remove response options from table

SAY: Thanks for telling me what you thought about those stories. This next set of questions asks you about how you make decisions in general.
Make sure that the child/young person has response options B1 in front of them

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Not at all true for me</th>
<th>Sometimes true</th>
<th>Often true</th>
<th>Almost always true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I feel confident about my ability to make decisions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I am not as good as most people in making decisions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I think I am a good decision maker.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I feel so down that I give up trying to make decisions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>The decisions I make turn out well.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>It is easy for other people to convince me that their decision rather than mine is the correct one.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7.</td>
<td>I avoid making decisions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I take a lot of care before I make my choice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I put off making decisions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>When faced with a decision, I go along with what others suggest.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I panic if I have to make decisions quickly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I’d rather let someone else make a decision for me so that it won't be my problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Once I have made a decision then I don't change my mind.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I prefer to leave decisions to others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Whenever I get upset by having to make a decision, I choose on the spur of the moment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I like to think about a decision before I make it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>When I have to make a decision, I wait a long time before starting to think about it.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>---------------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>17.</td>
<td>I feel as if I’m under time pressure when making decisions.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>18.</td>
<td>I can't think straight if I have to make a decision in a hurry.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>19.</td>
<td>When I make a decision, I feel that I’ve made the best one possible.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>20.</td>
<td>I put little effort into making decisions.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>21.</td>
<td>The possibility that some small thing might go wrong causes me to immediately change my mind about what I’m going to do.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>22.</td>
<td>I like to make decisions myself.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>23.</td>
<td>When forced to make a decision, I couldn't care which way I choose.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>24.</td>
<td>I choose on the basis of some small thing.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>25.</td>
<td>I tend to drift into decisions without thinking about them.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>26.</td>
<td>When I decide to do something, I get right on with it.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>27.</td>
<td>I don't like to take responsibility for making decisions.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>28.</td>
<td>When making decisions I tend to choose the first option that comes to mind.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>29.</td>
<td>I prefer to do what others choose because I don't like to be different.</td>
<td>Not at all true for me</td>
<td>Sometimes true</td>
<td>Often true</td>
<td>Almost always true</td>
</tr>
<tr>
<td>30.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Make sure all responses are filled out before moving on

Remove response options from table

SAY: Thanks for answering those questions. There’s only one more set of questions to go. Now I’m going to read another couple of stories to you. Tell me what you think you would do if you were in this situation. There are no right or wrong answers, just tell me what you think.
Make sure that the child/young person has the response options C1 in front of them

SAY: You and a friend have the same test but are in different classes. You have that class in the morning and she/he has that class in the afternoon. At lunch, your friend asks you to tell him/her what questions were on the test. You realise that your friend has a real reason for not studying, but you know you shouldn't reveal the test questions.

1. First, imagine that nothing bad would happen to you (such as getting caught by the teacher) if you told your friend the questions on the test. Would you tell your friend the test questions, or not?

<table>
<thead>
<tr>
<th>DEFINITELY tell friend the questions</th>
<th>Probably tell friend the questions</th>
<th>Probably not tell friend the questions</th>
<th>DEFINITELY not tell friend the questions</th>
</tr>
</thead>
</table>

2. Now imagine that something bad would happen to you if you told your friend the questions on the test. Would you tell your friend the test questions or not?

<table>
<thead>
<tr>
<th>DEFINITELY tell friend the questions</th>
<th>Probably tell friend the questions</th>
<th>Probably not tell friend the questions</th>
<th>DEFINITELY not tell friend the questions</th>
</tr>
</thead>
</table>

3. Finally, imagine you didn’t know whether something bad would happen to you if you told your friend the questions on the test. Would you tell your friend the test questions or not?

<table>
<thead>
<tr>
<th>DEFINITELY tell friend the questions</th>
<th>Probably tell friend the questions</th>
<th>Probably not tell friend the questions</th>
<th>DEFINITELY not tell friend the questions</th>
</tr>
</thead>
</table>
Make sure that the child/young person has the response options C2 in front of them

SAY: You're in the shop with a friend and he/she decides to take some chocolate without paying for it. You don’t think it’s a good idea, but your friend says you should take something too.

1. First, imagine that nothing bad would happen to you if you took the chocolate. Would you decide to take the chocolate or not?

<table>
<thead>
<tr>
<th>DEFINITELY take the chocolate</th>
<th>Probably take the chocolate</th>
<th>Probably not take the chocolate</th>
<th>DEFINITELY not take the chocolate</th>
</tr>
</thead>
</table>

2. Now imagine that something bad would happen to you if you took the chocolate. Would you decide to take the chocolate or not?

<table>
<thead>
<tr>
<th>DEFINITELY take the chocolate</th>
<th>Probably take the chocolate</th>
<th>Probably not take the chocolate</th>
<th>DEFINITELY not take the chocolate</th>
</tr>
</thead>
</table>

3. Finally, imagine you didn’t know whether something bad would happen to you if you took the chocolate. Would you decide to take the chocolate or not?

<table>
<thead>
<tr>
<th>DEFINITELY take the chocolate</th>
<th>Probably take the chocolate</th>
<th>Probably not take the chocolate</th>
<th>DEFINITELY not take the chocolate</th>
</tr>
</thead>
</table>

SAY: That’s the end of the questions. Thanks so much for talking time to answer these questions. You did really well. Before we finish up, we want to let you know that throwing rocks off a bridge onto cars or pushing people into a lake or lake is dangerous. You might hurt someone or get into serious trouble. Do you have any questions before we finish?

Time finished: __________ : __________ am/pm

Don't forget to give participant their book store voucher
<table>
<thead>
<tr>
<th></th>
<th>Wrong</th>
<th>In the Middle</th>
<th>Right</th>
</tr>
</thead>
</table>

Very, very wrong  Very wrong  A little wrong  In the middle  A little right  Very right  Very, very right
<table>
<thead>
<tr>
<th>Not at all true for me</th>
<th>Sometimes true</th>
<th>Often true</th>
<th>Almost always true</th>
</tr>
</thead>
</table>

B1
<p>| DEFINITELY tell friend the questions | Probably tell friend the questions | Probably not tell friend the questions | DEFINITELY not tell friend the questions |
| DEFINITELY take the chocolate | Probably take the chocolate | Probably not take the chocolate | DEFINITELY not take the chocolate |</p>
<table>
<thead>
<tr>
<th>Not important</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
</table>

D1
<table>
<thead>
<tr>
<th>Not wrong at all</th>
<th>Naughty</th>
<th>Wrong</th>
<th>Seriously wrong</th>
</tr>
</thead>
</table>

Sample of Rocks used during the rock scenario.\footnote{The physical rock was presented during the administration of interview.}
Appendix D. Plain Language Statement: Participant Version

DEAKIN UNIVERSITY
PLAIN LANGUAGE STATEMENT

An Invitation to Participate in Research

Title of project: The Development of Decision Making Abilities in Children and Adolescents.

Hello, my name is Sarah Wilson, and I am studying at Deakin University to become a psychologist. I have a supervisor there called Terry Bartholomew, and he is helping me do a project on how young people make decisions.

My study looks at how young people (aged between 8 and 16 years) see different situations, and how they make decisions about what to do. You are invited to take part in this research project because it will allow us to better understand how young people make decisions.

If you decide to take part, I would like to ask you some questions about yourself, such as your age and the language you speak at home. Then you will be asked about what things you think about when you make decisions. Questions in the interview are things like “How important is it to keep promises?” and “When making decisions I tend to choose the first alternative that comes to mind.”

To answer all the questions, it takes about 45 minutes to one (1) hour. To make sure we get all of your answers, the interview will be recorded. Some of the questions ask you to choose your answer from a set of answers. For these questions you will have some possible answers in front of you and the researcher will ask you which one fits your ideas best. Some of the questions ask you about what you might do in a situation. We are interested in what you think, and so the researcher will ask you just to talk, and they will write notes from what you say. For example, you will be read a short story about someone and then asked if you think the decision they made was right or wrong or in the middle. After this, you will be asked why you think that. You can say what you think in your own words and the person doing the study will write your answers down.

Once you have finished all the questions, your answers will be put into an envelope. Your answers will be kept in a different place to the consent form with your name on it. This is so no one can tell which answers are yours.

Your parent/guardian has said that they are OK with you answering the questions in this interview. However, if you don’t want to take part in the interview, that is OK. After the interview is over, we won’t be able to tell which answers are yours, so we won’t be able to take them out of the study. If you change your mind during the interview, you can tell me and the interview can stop and we won’t use your answers to the questions.

Thank you for thinking about helping me to find out more about the kinds of things young people think about when they make decisions.
Appendix E. Plain Language Statement:
Parent/Guardian Version
DEAKIN UNIVERSITY
PLAIN LANGUAGE STATEMENT AND CONSENT FORM

TO: Parent/Guardian

Plain Language Statement
Date: 31/03/2011

Full Project Title: The Development of Decision Making Abilities in Children and Adolescents.
Principal Researcher: Dr Terry Bartholomew
Student Researchers: Ms Sarah Wilson, Ms Sophie Ruzyla, Ms Robyn Ming, Ms Stephanie Courtescas, Ms Samantha-Jayne Beh, and Ms Laura Clarke.

This Plain Language Statement and Consent Form is 5 pages long. Please make sure you have all the pages.

1. Your Consent
Your child/dependent is invited to take part in this research project.
This Plain Language Statement contains detailed information about the research project. Its purpose is to explain all the procedures involved as openly and clearly as possible so that you can make a fully informed decision about whether you will allow your child to participate.
Please read this Plain Language Statement carefully. Feel free to ask questions about any information in the document. Once you understand what the project is about and, if you agree to let your child participate, they will be asked to complete some anonymous questionnaires assessing moral reasoning, decision making and intellectual functioning.
You will be given a copy of the Plain Language Statement to keep as a record. Your child will also be given a simplified copy of this Plain Language Statement, and this will be read to them if they are 8 or 10 years old to ensure that they understand the study.

2. Purpose and Background
The purpose of this project is to examine the ages that young people’s decision making abilities develop. The legal system makes important assumptions about whether children are able to ascertain morally appropriate behaviour. The legal system assumes that children under the age of 10 are likely to be poor decision makers, while children over the age of 14 are likely to be as good at making decisions as adults. As such, children under the age of 10 can’t be held responsible for a crime, and children over the age of 14 can be held responsible. Between the ages of 10 and 14, the legal system assumes that young people understand the decisions they make, but may not fully understand the consequences of these decisions.
These age-based legal criteria are contentious, as it is often argued that modern children are more sophisticated in their decision making abilities than previous generations. Thus, the aim of this research is to examine the development of children’s abilities to make decisions and understand the moral consequences of their behaviour. My research will compare the responses of children of different ages (ranging from 8 to 16 years), to examine the validity of the current age-based legal criteria in Victoria. This research will inform the theses of students enrolled in the Graduate Diploma in Psychology and the Doctor of Psychology (Forensic) programs.

A total of 150 people will participate in this project.

3. **Procedures**

Your child’s participation in this project will involve answering 95 questions about how they make decisions in various contexts. All of the questions will be read to your child by the researcher, and require your child to respond verbally. To make sure that we don’t miss any of your child’s responses, the interview will be recorded.

At the beginning of the session, participants will be asked to provide some information about themselves (for example, their age, gender and the language they speak at home). This will be followed by two questionnaires about moral reasoning; one that measures your child’s views of what is right and wrong in morally ambiguous situations, and another that asks them about aspect of moral behaviour that are important to them. This will be followed by two questionnaires about decision making; one that asks about what helps your child to make decisions, and another that asks your child about how consequences affect their decision making. The last questionnaire asks your child to decide what they would do at various stages of two moral dilemmas, specifically noting their process of decision making.

Typical items include “How important is it to keep promises?” and “When making decisions I tend to choose the first alternative that comes to mind.” Other sections present a scenario and then ask questions such as “how right / wrong was [the character]?”, “Suppose nothing bad would happen to you. Would you take the chocolate or not?” and “What could happen if you went with your friend?”.

It is expected that it will take 45-60 minutes to complete the interview. Once complete, your child’s responses will be sealed in an envelope. The consent forms will be kept separately to the questionnaires so your child’s responses are anonymous. No participant will be singled out when the data are reported, only de-identified group results will be used.

You or your child may withdraw consent at any time until the end of the interview. After this time, there is no way for us to identify the source of data, so withdrawal is not possible, and your child’s answers will be used for the study.
4. **Possible Benefits**
We cannot guarantee or promise that your child will receive any benefits from this project. However, research has shown that practice leads to improved decision making. As such, your child may reflect on and gain some insight into how they go about making decisions and the kinds of things they think about when faced with an ambiguous situation.

5. **Possible Risks**
It is not expected that your child will experience stress and/or discomfort. However, it may be useful to discuss their understanding and feelings about the content of the questions once the study is complete. If the young person starts the questionnaire but doesn’t want to complete it, the researcher will stop the questionnaire, and any answers given will not be used.

6. **Privacy, Confidentiality and Disclosure of Information**
All information gathered from participants will be kept securely. Only the researchers from this project will have access to the data collected here. Any information that can identify you and/or your child will be kept separately from your child’s answers. All data collected will be securely stored for six years at Deakin University following publication of the findings. After six years, all data will be destroyed.

The results from this study will be reported in theses in partial fulfilment of the student researcher’s university degree. They may also be published in a professional journal at a later date. In any thesis or publication, information will be provided in such a way that your child cannot be identified. Confidentiality will be maintained as the results will be reported in a collective and anonymous way.

7. **Results of Project**
Results from individual participants will not be available to their parent/guardian, as the data gathered is not suitable for this purpose. Should you be interested in reading about the results of this study, they will be posted in the following website: http://www.deakin.edu.au/psychology/research/decisionmaking

No individual results are reported so you will not be able to identify your child’s specific results. The results will be available in December 2012 once the report has been written.

9. **Participation is Voluntary**
You child’s participation in any research project is voluntary. If you do not wish your child to take part, you are not obliged to provide your consent. Your child’s consent will also be sought before testing begins. If your child does not agree to participate, he/she is not obliged to do so. Your decision whether to take part or not will not affect your relationship with Deakin University or any other party. Before you make your decision, a member of the research team will be available to answer any questions you and/or your child have about the research project. You can ask for any information you want. Allow your child to participate only after
you have had a chance to ask your questions and have received satisfactory answers. If you decide your child can participate, you and your child will be asked to sign a consent form.

10. **Ethical Guidelines**

This project will be carried out according to the *National Statement on Ethical Conduct in Human Research* (2007) produced by the National Health and Medical Research Council of Australia. This statement has been developed to protect the interests of people who agree to participate in human research studies. The ethics aspects of this research project have been approved by the Human Research Ethics Committee of Deakin University.

11. **Complaints**

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about your rights as a research participant then you may contact:
The Manager, Office of Research Integrity, Deakin University, 221 Burwood Highway, Burwood Victoria 3125, Telephone: 9251 7129, Facsimile: 9244 6581; research-ethics@deakin.edu.au.
Please quote the project number DU-HREC 2011-075

12. **Reimbursement for your costs**

On completion of the interview, the child/young person in your care will receive a $20 book store voucher for their participation.

13. **Further Information, Queries or Any Problems**

If you require further information or if you have any problems concerning this project (for example, any side effects), you can contact the principal researcher. The researchers responsible for this project are:

Dr Terry Bartholomew  
Deakin University, School of Psychology  
221 Burwood Highway, 
Burwood, 3125  
Phone: 92446207  
*Email: terry.bartholomew@deakin.edu.au*

Ms Sarah Wilson  
Deakin University, School of Psychology  
221 Burwood Highway,  
Burwood, 3125  
*Email: swilson@deakin.edu.au*
TO: Parent/Guardian and Young Person

Consent Form
Date: 31/03/2011
Site: Deakin University
Full Project Title: The Development of Decision Making Abilities in Children and Adolescents.

Parent / Guardian:
I have read the attached Plain Language Statement. I understand what this study is about and that I am being asked for my permission for the child/young person under my care to take part in the study.
I have been able to ask any questions I want, and I am satisfied with the answers given by the researcher.
I agree to let the child/young person under my care participate in this project. I agree to have their answers audio recorded.
I understand that the researcher will not reveal any personal details about myself or the child under my care when they report the results.
I understand that the researcher will need to have both my consent and the consent of the child under my care before commencing the study.
I have been given a copy of the Plain Language Statement to keep.

Parent/Guardian’s Name (printed) .................................................................
Signature Date

Young Person:
I have read the attached Plain Language Statement. I understand what the study is about and what I am being asked to do.
I have been able to ask any questions I want, and I understand the answers given.
I agree to take part in this study. I agree to have my answers audio recorded.
I understand that once I have finished answering the questions, no one will be able to tell which answers are mine.
I understand that the person doing the study has told my parent/guardian about the study and they are OK with me doing the study.
I have been given a copy of the Plain Language Statement to keep.

Young Person’s Name (printed) ......................................................
Signature Date
Appendix F. Updated Plain Language Statements

DEAKIN UNIVERSITY
PLAIN LANGUAGE STATEMENT

| An Invitation to Participate in Research |

**Title of project:** The Development of Decision Making Abilities in Children and Adolescents.

Hello, my name is Sarah Wilson, and I am studying at Deakin University to become a psychologist. I have a supervisor there called Don Thomson, and he is helping me do a project on how young people make decisions.

My study looks at how young people (aged between 8 and 16 years) see different situations, and how they make decisions about what to do. You are invited to take part in this research project because it will allow us to better understand how young people make decisions.

If you decide to take part, I would like to ask you some questions about yourself, such as your age and the language you speak at home. Then you will be asked about what things you think about when you make decisions. Questions in the interview are things like “How important is it to keep promises?” and “When making decisions I tend to choose the first alternative that comes to mind.”

To answer all the questions, it takes about 45 minutes to one (1) hour. To make sure we get all of your answers, the interview will be recorded. Some of the questions ask you to choose your answer from a set of answers. For these questions you will have some possible answers in front of you and the researcher will ask you which one fits your ideas best. Some of the questions ask you about what you might do in a situation. We are interested in what you think, and so the researcher will ask you just to talk, and they will write notes from what you say. For example, you will be read a short story about someone and then asked if you think the decision they made was right or wrong or in the middle. After this, you will be asked why you think that. You can say what you think in your own words and the person doing the study will write your answers down.

Once you have finished all the questions, your answers will be put into an envelope. Your answers will be kept in a different place to the consent form with your name on it. This is so no one can tell which answers are yours.

Your parent/guardian has said that they are OK with you answering the questions in this interview. However, if you don’t want to take part in the interview, that is OK. After the interview is over, we won’t be able to tell which answers are yours, so we won’t be able to take them out of the study. If you change your mind during the interview, you can tell me and the interview can stop and we won’t use your answers to the questions.

Thank you for thinking about helping me to find out more about the kinds of things young people think about when they make decisions.
DEAKIN UNIVERSITY
PLAIN LANGUAGE STATEMENT AND CONSENT FORM

TO: Parent/Guardian

Plain Language Statement
Date: 31/03/2011

Full Project Title: The Development of Decision Making Abilities in Children and Adolescents.

Principal Researcher: Professor Don Thomson
Student Researchers: Ms Sarah Wilson, Ms Pip Fell, Ms Sumedha Gaindhar, Ms Melissa Tso, Ms Sandhya Menon, Ms Kirsty Vondeling, Mr Damian Najder, Ms Emma Sestan, Ms Amanda Abbruzzese.

This Plain Language Statement and Consent Form is 5 pages long. Please make sure you have all the pages.

8. Your Consent

Your child/dependent is invited to take part in this research project. This Plain Language Statement contains detailed information about the research project. Its purpose is to explain all the procedures involved as openly and clearly as possible so that you can make a fully informed decision about whether you will allow your child to participate.

Please read this Plain Language Statement carefully. Feel free to ask questions about any information in the document. Once you understand what the project is about and, if you agree to let your child participate, they will be asked to complete some anonymous questionnaires assessing moral reasoning, decision making and intellectual functioning.

You will be given a copy of the Plain Language Statement to keep as a record. Your child will also be given a simplified copy of this Plain Language Statement, and this will be read to them if they are 8 or 10 years old to ensure that they understand the study.

9. Purpose and Background

The purpose of this project is to examine the ages that young people’s decision making abilities develop. The legal system makes important assumptions about whether children are able to ascertain morally appropriate behaviour. The legal system assumes that children under the age of 10 are likely to be poor decision makers, while children over the age of 14 are likely to be as good at making decisions as adults. As such, children under the age of 10 can't be held responsible for a crime, and children over the age of 14 can be held responsible. Between the ages of 10 and 14, the legal system assumes that young people understand the decisions they make, but may not fully understand the consequences of these decisions.
These age-based legal criteria are contentious, as it is often argued that modern children are more sophisticated in their decision making abilities than previous generations. Thus, the aim of this research is to examine the development of children’s abilities to make decisions and understand the moral consequences of their behaviour. My research will compare the responses of children of different ages (ranging from 8 to 16 years), to examine the validity of the current age-based legal criteria in Victoria. This research will inform the theses of students enrolled in the Graduate Diploma in Psychology and the Doctor of Psychology (Forensic) programs.

A total of 150 people will participate in this project.

10. Procedures

Your child’s participation in this project will involve answering 95 questions about how they make decisions in various contexts. All of the questions will be read to your child by the researcher, and require your child to respond verbally. To make sure that we don’t miss any of your child’s responses, the interview will be recorded.

At the beginning of the session, participants will be asked to provide some information about themselves (for example, their age, gender and the language they speak at home). This will be followed by two questionnaires about moral reasoning; one that measures your child’s views of what is right and wrong in morally ambiguous situations, and another that asks them about aspect of moral behaviour that are important to them. This will be followed by two questionnaires about decision making; one that asks about what helps your child to make decisions, and another that asks your child about how consequences affect their decision making. The last questionnaire asks your child to decide what they would do at various stages of two moral dilemmas, specifically noting their process of decision making.

Typical items include “How important is it to keep promises?” and “When making decisions I tend to choose the first alternative that comes to mind.” Other sections present a scenario and then ask questions such as “how right / wrong was [the character]?”, “Suppose nothing bad would happen to you. Would you take the chocolate or not?” and “What could happen if you went with your friend?”.

It is expected that it will take 45-60 minutes to complete the interview. Once complete, your child’s responses will be sealed in an envelope. The consent forms will be kept separately to the questionnaires so your child’s responses are anonymous. No participant will be singled out when the data are reported, only de-identified group results will be used.

You or your child may withdraw consent at any time until the end of the interview. After this time, there is no way for us to identify the source of data, so withdrawal is not possible, and your child’s answers will be used for the study.
11. Possible Benefits
We cannot guarantee or promise that your child will receive any benefits from this project. However, research has shown that practice leads to improved decision making. As such, your child may reflect on and gain some insight into how they go about making decisions and the kinds of things they think about when faced with an ambiguous situation.

12. Possible Risks
It is not expected that your child will experience stress and/or discomfort. However, it may be useful to discuss their understanding and feelings about the content of the questions once the study is complete. If the young person starts the questionnaire but doesn’t want to complete it, the researcher will stop the questionnaire, and any answers given will not be used.

13. Privacy, Confidentiality and Disclosure of Information
All information gathered from participants will be kept securely. Only the researchers from this project will have access to the data collected here. Any information that can identify you and/or your child will be kept separately from your child’s answers. All data collected will be securely stored for six years at Deakin University following publication of the findings. After six years, all data will be destroyed.

The results from this study will be reported in theses in partial fulfilment of the student researcher’s university degree. They may also be published in a professional journal at a later date. In any thesis or publication, information will be provided in such a way that your child cannot be identified. Confidentiality will be maintained as the results will be reported in a collective and anonymous way.

14. Results of Project
Results from individual participants will not be available to their parent/guardian, as the data gathered is not suitable for this purpose. Should you be interested in reading about the results of this study, they will be posted in the following website: http://www.deakin.edu.au/psychology/research/decisionmaking

No individual results are reported so you will not be able to identify your child’s specific results. The results will be available in December 2012 once the report has been written.

9. Participation is Voluntary
You child’s participation in any research project is voluntary. If you do not wish your child to take part, you are not obliged to provide your consent. Your child’s consent will also be sought before testing begins. If your child does not agree to participate, he/she is not obliged to do so. Your decision whether to take part or not will not affect your relationship with Deakin University or any other party. Before you make your decision, a member of the research team will be available to answer any questions you and/or your child have about the research project. You can ask for any information you want. Allow your child to participate only after
you have had a chance to ask your questions and have received satisfactory answers. If you decide your child can participate, you and your child will be asked to sign a consent form.

10. **Ethical Guidelines**
This project will be carried out according to the *National Statement on Ethical Conduct in Human Research (2007)* produced by the National Health and Medical Research Council of Australia. This statement has been developed to protect the interests of people who agree to participate in human research studies. The ethics aspects of this research project have been approved by the Human Research Ethics Committee of Deakin University.

11. **Complaints**
If you have any complaints about any aspect of the project, the way it is being conducted or any questions about your rights as a research participant then you may contact:
The Manager, Office of Research Integrity, Deakin University, 221 Burwood Highway, Burwood Victoria 3125, Telephone: 9251 7129, Facsimile: 9244 6581; research-ethics@deakin.edu.au.
Please quote the project number DU-HREC 2011-075

12. **Reimbursement for your costs**
On completion of the interview, the child/young person in your care will receive a $20 book store voucher for their participation.

13. **Further Information, Queries or Any Problems**
If you require further information or if you have any problems concerning this project (for example, any side effects), you can contact the principal researcher. The researchers responsible for this project are:
Professor Don Thomson
Deakin University, School of Psychology
221 Burwood Highway,
Burwood, 3125
Phone: 92446498
Email: donald.thomson@deakin.edu.au

Ms Sarah Wilson
Deakin University, School of Psychology
221 Burwood Highway,
Burwood, 3125
Email: swilson@deakin.edu.au
TO: Parent/Guardian and Young Person

Consent Form
Date: 31/03/2011
Site: Deakin University
Full Project Title: The Development of Decision Making Abilities in Children and Adolescents.

Parent / Guardian:
I have read the attached Plain Language Statement. I understand what this study is about and that I am being asked for my permission for the child/young person under my care to take part in the study.
I have been able to ask any questions I want, and I am satisfied with the answers given by the researcher.
I agree to let the child/young person under my care participate in this project. I agree to have their answers audio recorded.
I understand that the researcher will not reveal any personal details about myself or the child under my care when they report the results.
I understand that the researcher will need to have both my consent and the consent of the child under my care before commencing the study.
I have been given a copy of the Plain Language Statement to keep.

Parent/Guardian's Name (printed) .................................................................
Signature  Date

Young Person:
I have read the attached Plain Language Statement. I understand what the study is about and what I am being asked to do.
I have been able to ask any questions I want, and I understand the answers given.
I agree to take part in this study. I agree to have my answers audio recorded.
I understand that once I have finished answering the questions, no one will be able to tell which answers are mine.
I understand that the person doing the study has told my parent/guardian about the study and they are OK with me doing the study.
I have been given a copy of the Plain Language Statement to keep.

Young Person’s Name (printed) ....................................................
Signature  Date
Appendix G. Full list of the categories used to code qualitative responses provided in the CADI

Table G1. Qualitative coding categories for use with the CADI

<table>
<thead>
<tr>
<th>Category Code</th>
<th>Category name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Reference to suggested or actual rock dropping being immoral or wrong</td>
</tr>
<tr>
<td>B</td>
<td>Reference to morality as a common ideal</td>
</tr>
<tr>
<td>C</td>
<td>Poor quality of the idea / behaviour / decision</td>
</tr>
<tr>
<td>D</td>
<td>Dropping rocks is nasty or mean</td>
</tr>
<tr>
<td>E</td>
<td>Dropping rocks is fun or funny</td>
</tr>
<tr>
<td>F</td>
<td>Dropping rocks is not fun or not funny</td>
</tr>
<tr>
<td>G</td>
<td>Reference that takes victim’s perspective (All references)</td>
</tr>
<tr>
<td>G1</td>
<td>Reference that takes victim’s perspective, focus only on two implicated parties (Exchanges / Relationships)</td>
</tr>
<tr>
<td>G2</td>
<td>Reference that takes victim’s perspective, focus on general social rule (Relationships)</td>
</tr>
<tr>
<td>H</td>
<td>Potential for harm to people (All references)</td>
</tr>
<tr>
<td>H1</td>
<td>Potential for harm to the respondent or friend (All references)</td>
</tr>
<tr>
<td>H1aMi</td>
<td>Potential for minor Physical Harm to respondent/friend</td>
</tr>
<tr>
<td>H1aMa</td>
<td>Potential for major Physical Harm to respondent/friend</td>
</tr>
<tr>
<td>H1bMi</td>
<td>Potential for minor Psychological Harm to respondent/friend</td>
</tr>
<tr>
<td>H1bMa</td>
<td>Potential for major Psychological Harm to respondent/friend</td>
</tr>
<tr>
<td>H2</td>
<td>Potential for harm to people other than the respondent or friend (others)</td>
</tr>
<tr>
<td>H2aMi</td>
<td>Potential for minor Physical Harm to others</td>
</tr>
<tr>
<td>H2aMa</td>
<td>Potential for major Physical Harm to others</td>
</tr>
<tr>
<td>H2bMi</td>
<td>Potential for minor Psychological Harm to others</td>
</tr>
<tr>
<td>H2bMa</td>
<td>Potential for major Psychological Harm to others</td>
</tr>
<tr>
<td>H3</td>
<td>Potential for harm to people (Non-specific)</td>
</tr>
<tr>
<td>I</td>
<td>Reference to putting someone’s life at risk</td>
</tr>
<tr>
<td>J</td>
<td>Reference to putting a human life at risk</td>
</tr>
</tbody>
</table>
| K             | Reference to dropping rock(s) being on respondent or friend's
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1</td>
<td>Reference to dropping rock(s) making respondent or friend feel bad (Conscience Lower level)</td>
</tr>
<tr>
<td>K2</td>
<td>Reference to dropping the rock being on respondent or friend’s conscious or making them feel guilty (Conscience Middle level)</td>
</tr>
<tr>
<td>K3</td>
<td>Reference to respondent or friend feeling responsible for dropping rock(s) (Conscience Upper level)</td>
</tr>
<tr>
<td>L</td>
<td>Reference to qualities or abilities of the victim that would increase or decrease the risks associated with dropping rock(s)</td>
</tr>
<tr>
<td>M</td>
<td>Potentially receive sanctions for dropping rock(s) (All references)</td>
</tr>
<tr>
<td>M1</td>
<td>Potentially receive Informal Sanctions for dropping rock(s)</td>
</tr>
<tr>
<td>M2</td>
<td>Potentially receive Formal Sanctions for dropping rock(s)</td>
</tr>
<tr>
<td>M3</td>
<td>Potentially receive general sanctions for dropping rock(s) (Non-specific)</td>
</tr>
<tr>
<td>N</td>
<td>Prediction of no negative consequences from dropping rock(s)</td>
</tr>
<tr>
<td>O</td>
<td>Reference to the legal system / suggested or actual rock dropping being illegal</td>
</tr>
<tr>
<td>P</td>
<td>Reference to respondent being wrongly implicated / blamed for dropping rock(s)</td>
</tr>
<tr>
<td>Q</td>
<td>Reference to respondent or friend being responsible for dropping rock(s) (all references)</td>
</tr>
<tr>
<td>Q1</td>
<td>Reference to respondent being responsible for dropping rock(s)</td>
</tr>
<tr>
<td>Q2</td>
<td>Reference to friend being responsible for dropping rock(s)</td>
</tr>
<tr>
<td>R</td>
<td>Reference to thought process leading up to / at the time of the offence (Intent / Motivation)</td>
</tr>
<tr>
<td>S</td>
<td>Reference to dropping rock(s) being motivated by Retaliation or Revenge</td>
</tr>
<tr>
<td>T</td>
<td>Reference to potential victim not deserving rock(s) dropped on them / dropping rock(s) not justified</td>
</tr>
<tr>
<td>U</td>
<td>Potentially being caught / seen by others</td>
</tr>
<tr>
<td>V</td>
<td>Contingencies that could escalate risk / reduce safety</td>
</tr>
<tr>
<td>W</td>
<td>Contingencies that could reduce risk / increase safety</td>
</tr>
<tr>
<td>X</td>
<td>Potential damage to inanimate objects as a result of dropping</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>X1</td>
<td>Potential damage to inanimate objects as a direct result of dropping rock(s)</td>
</tr>
<tr>
<td>X2</td>
<td>Potential secondary damage to inanimate objects as a result of direct damage from dropping rock(s)</td>
</tr>
<tr>
<td>Y</td>
<td>Reference to monetary cost of damage as a result of dropping rock(s)</td>
</tr>
<tr>
<td>Z</td>
<td>Mention of danger or hazard resulting from dropping the rock(s) (All references)</td>
</tr>
<tr>
<td>Z1</td>
<td>Mention of danger or hazard experienced by people resulting from dropping the rock(s) (People)</td>
</tr>
<tr>
<td>Z2</td>
<td>Mention of danger or hazard in reference to inanimate objects resulting from dropping the rock(s) (Pragmatic)</td>
</tr>
<tr>
<td>Z3</td>
<td>Mention of general danger or hazard(s) resulting from dropping the rock(s) (Non-specific)</td>
</tr>
<tr>
<td>AA</td>
<td>Reference to providing assistance or alerting others</td>
</tr>
<tr>
<td>BB</td>
<td>Respondent would leave the scene</td>
</tr>
<tr>
<td>CC</td>
<td>Reference to respondent or friend experiencing positive or negative social repercussions as a result of dropping rock(s) (All references)</td>
</tr>
<tr>
<td>CC1</td>
<td>Reference to respondent experiencing positive social repercussions as a result of dropping rock(s)</td>
</tr>
<tr>
<td>CC2</td>
<td>Reference to respondent experiencing negative social repercussions as a result of dropping rock(s)</td>
</tr>
<tr>
<td>CC3</td>
<td>Reference to friend experiencing negative social repercussions as a result of dropping rock(s)</td>
</tr>
<tr>
<td>DD</td>
<td>Reference to respondent or friend Peer Pressuring one another (All references)</td>
</tr>
<tr>
<td>DD1</td>
<td>Friend peer pressuring respondent</td>
</tr>
<tr>
<td>DD2</td>
<td>Respondent peer pressuring friend</td>
</tr>
<tr>
<td>DD3</td>
<td>Reference to resisting Peer Pressure</td>
</tr>
<tr>
<td>DD4</td>
<td>General reference to Peer Pressure (Non-Specific)</td>
</tr>
<tr>
<td>EE</td>
<td>Respondent stated they don’t want to be involved</td>
</tr>
<tr>
<td>FF</td>
<td>Reference to relationship with friend as a reason to drop or not</td>
</tr>
</tbody>
</table>
drop rock(s)

GG  Justification for dropping the rock(s)

HH  Reference to existing knowledge of dangers associated with dropping rock(s)

II  Potential victim(s) not expecting rock(s) to be dropped

JJ  Respondent would warn the person

KK  Potential Physical altercation

LL  Reference to teasing or bullying as a result of dropping or not dropping rock(s)

MM  Friend could keep going to drop rock(s) without respondent

NN  Suggest an alternate course of action

OO (rock only category)  Reference to physical features of the rock

PP  Reference to getting upset

QQ  Reference to getting angry

RR (lake only category)  Potential deadly creature in the lake

SS  Parrot back our words

TT  Negative appraisal of friend

UU  Reference to the emotional effect(s) of dropping rock(s) on victim’s loved ones

UU1  Reference to simple emotional effect(s) of dropping rock(s) on victim’s loved ones (Preferences & Advantages)

UU2  Reference to general emotional effect(s) of dropping rock(s) on victim’s loved ones (Preferences / Relationships)

UU3  Reference to specific effect(s) of dropping rock(s) on victim’s loved ones (Empathic Role-taking & Prosocial Intentions)

VV  Statement that qualifies the probability of potential consequence

WW  That's risky

XX  Respondent judging friend for not learning from escalation

YY  Dropping rock(s) would inconvenience people (All references)

YY1  Dropping rock(s) would inconvenience the respondent

YY2  Dropping rock(s) would inconvenience the friend
| YY3  | Dropping rock(s) would inconvenience the victim / people in the car |
| YY4  | Dropping rock(s) would inconvenience others (Non-specific) |
| ZZ   | Respondent didn't stop their friend from dropping rock(s) |
| AAA  | Respondent would watch their friend but not participate |
| BBB  | (rock only category) Dropping rock(s) could hurt an animal |
| CCC  | (rock only category) Dropping rock(s) could damage to nature / trees |
| DDD  | (rock only category) Mention of being lucky |
| EEE  | Stated Don’t know / unsure |
| BBB  | (lake only category) Consideration of the mental state of victim as potentially why they are sitting on the railing |
| CCC  | (lake only category) Victim didn’t mean to get respondent in trouble at school |
| DDD  | (lake only category) Respondent probably deserved to get in trouble |
| FFF  | (lake only category) Considering pushing victim into lake / victim could fall into lake |
| GGG  | (lake only category) Mention of victim calling out for help |
| HHH  | (lake only category) Victim’s death implied but not explicitly stated |
| III  | (lake only category) Mention victim struggling in the water |
| JJJ  | (lake only category) Potential that victim could survive / be OK |
| KKK  | (lake only category) Reference to the type or amount of trouble the victim got the respondent in |