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THE MULTIMODAL CONSEQUENCES OF COORDINOLOGY

Arakawa and Gins have worked together for over 35 years. In that time the fluency of their exchange has produced a host of possible positions that they can occupy, from which they may move and to which they return. These include speaking and perceiving positions, positions within and among regimes of thought, building and occupying positions, and a myriad of organizing and coordinating positions. Practicing these positions has evolved from the practice of the individual arts of painting and poetry to the collaborative ventures of writing, installation, built environment, large-scale site works, housing communities and small cities. As artists and architects conducting experimental research, Arakawa and Gins position themselves as test subjects, technicians, theorists, control-group, test pilots, students, human snails, autodidacts, and teachers. Their work highlights the direct connection between forms of research and forms of life. They see the future of art as residing in the coordinological ability of the architectural body and as crucial to the future of the species. The multimodal consequences of experience provide evidence that every action and event specifies selection both in the individual organism and the environment. The multimodal consequences of coordinology act upon that evidence to deliberately select particular experiences.

This essay will make a case for the importance of coordinology, not only as the process by which architectural procedures and the architectural body emerge, but also primarily as the practice of our attention and personal agency. Unlike methodology, in coordinology every attempt is an enactment that involves more than one scale of action and event. Because many of us lack the practice of moving across modes of perception and scales of action, our need to address more than one scale risks causing disorientation where clarity might be gleaned from exclusion. It is important therefore to write as a coordinologist with the aim of achieving precise configurations, rather than isolating knowledge (clarity of objects) from our surroundings.

Coordinology

Coordinology is the term Arakawa and Gins hold in reserve for speaking about the ongoing process of assessment, enacted on all scales of action, which constitutes the daily practice of their procedural architecture. This essay will discuss the expressed purpose of coordinology—how we may invent ourselves further—by exploring the calculus of indications available to us for the realization of living. In any discussion of coordinology we must take into account the following key aspects: tentativeness (quality of interaction), landing sites (the barest noticings of which we are capable), scales of action (complexity over isolation), and current research (approaches and outcomes of deliberate personal, discursive, social, and cultural interaction). “No one should consider herself a finished product or a non-puzzle,” explain Arakawa and Gins in *Architectural Body* (xx). The puzzling out of the body through tentative body-wide questioning is crucial to how coordinology makes it possible for an architectural body to emerge from an “organism that persons:”

“The body can yield answers through that which it subsists as, through the whole of itself, inclusive of its sequences of actions and the surroundings into which, in a variety of ways, it extends itself” (xv).

Coordinology initiates pointing, selecting, and considering, along with many other ways to land as a site. Arakawa and Gins suggest that we come to know ourselves through “sited awareness” consisting of many sites that co-originate all sites (5). From the barest noticings of landing sites we coordinate the quality and structure of relationships into configurations and sets of configurations through two key procedures: a) disperse-to-contrast and b) tentative constructing towards a holding in place. A sited body coordinates these multi-levelled and multi-scaled sets of landing sites into “the mechanism of meaning”—the body itself. A result of the value and consequences of these same acts of coordination, a sited body can only come about if we observe and study the relationships between coordinology and tentativeness. How, as Arakawa and Gins suggest, can tentative landing and coordinating open a neutral zone? It is the heuristic aspect of landing sites—which, for a moment, suspends the habitual reception and categorization of information and puts the making of metaphors on hold—that enables:

[...] the symbolising creature [to become] a landing-site creature. The tense of landing sites holds as that split-second of muting whose instantaneous time span lasts only long enough for basic positionings to be registered. Providing a neutral zone of emphasis, landing sites simply bypass subject-object distinctions. (22)

Of course it is not a simple matter to bypass the symbolic nature we inhabit. A practice, coordinology, is needed. The muting of symbol would help bypass well-worn traditions of becoming by allowing adjustments based on our precise interaction with, and re-configuring of, the forms and formal relationships that are in operation as the world. Coordinology emphasizes an ethical, versus an aesthetic, value for forms themselves. What is important is not what a thing (architecture or any form) looks like, or how it references signifiers within the history of forms, but precisely how it does not resemble inherited habits, habitats and “habitus” (Bourdieu) and instead designates or shows its relationship to otherness. At stake is the direction of co-origination of the organism, forms, and environment. Arakawa and Gins’s entire undertaking focuses on establishing different relationships between agency and activity—“architecting” rather than architecture—pro-finding rather than the pro-(already)-found, coordinology rather than methodology.

The contrast between coordinology and methodology is the difference between the practice of conditioning emergent possibilities and the execution of pre-figured events in pre-configured fields. One of the first tasks of coordinology and architectural procedures lies in asking how language is configured with and into other body-wide systems. The notion of a pre-linguistic state needs to be distinguished from non-linguistic activities in order to address the possibility of coordinating observation and learning toward transformation.

At this point in time, coordinology is to the embodied mind what the Cartesian third house problem was for language and thought in the Enlightenment. Descartes proposes a “provisional morality” that would organize a third interim house, “another house in which to live comfortably while the rebuilding is taking place” in the interval between the old and the new house of knowledge (19). The situation has changed but the interval remains. Arakawa and Gins propose a “crisis ethics” in place of a provisional morality because

there is no comfortable site from which to oversee the building of one's life (xviii). It will take more than linguistic analysis and a new house of language to allow the architectural body to emerge from our modern conceptions of subjectivity. Arakawa and Gins propose that this can happen only through integrated body-wide awareness in an "ever-on-the-move body," as opposed to agency conceived as structure, idea, image, or fixed relation (49).

Our attempts to work on all systems of attention and "affordance"—from the basics of what neurons and interneurons afford us, to the intermediary systems of perception, communication, research, and action, to larger physical and social constructs and grand narratives of Time, History, and Culture—are always susceptible to normalization and habituation. The deficiencies of previous forms of continuity stem from internal systemic conflicts that have required docile bodies. Arakawa and Gins explain that "the species has not yet learned how to have its members pull together to work communally at the same time they continue to form themselves as separate individuals" (xxi). The purpose of coordinology is to address the problem of being simultaneously "one and many" by actively linking the discoveries from all fields of research with the deliberate forms of perception and interaction from first-person research.

The premise of coordinology is to "keep discoveries from all fields of research actively in the arena," neither separating them from other discourses nor isolating them from everyday life: "Research should no longer be done off to one side, in a school, a library or a laboratory. Where one lives needs to become the laboratory for researching, for mapping directly, the living body itself, oneself as world-forming inhabitant" (xxi). There can be, therefore, no example of coordinology or of coordinating a procedure. Every act of coordination re-enters the system and affects/effects the quality and structure of its configurations. No instance can be extracted and isolated for viewing. There are no rehearsals, only a continuous following-through in the midst of things.

Scales of action

Perhaps the most difficult aspect of coordinology, in terms of developing it into a daily practice, is the task of operating on all scales of action. The naming and recognition of scales of action, from the perspective of our limited and figural scale, affects the form and content of our perception and, consequently, our capacity for observation and learning. These in turn determine the extent to which we may reconfigure and potentially transform ourselves. In *Beyond Good and Evil*, Nietzsche notes the "tempo of discourse" which, I suspect, closely follows the tempo of perception (40). The tempo of perception focused by the tempo of discourse accounts for the appearance of various forms of persistence and change. Ecological psychologist James J. Gibson asserts that the scale of perception and action, and hence the appropriate scale of study for humans and animals, ranges from millimeters to kilometers in conditions where humans, animals, and the environment are comparable (20-21). While this is very useful, it does not explain the dominance of this figural scale, or the benefits of realizing that the scale at which an action is initiated is not the scale upon which it remains an event.

Rather, it is our own tempo of perception and discourse that is the mechanism for producing the figural scale of events. If we acknowledge this, then we may also become aware of the necessity to practice coordinology as the refusal to obey the borderlines between the scales of action. Coordinology is not a law-enforcement system. It is an ongoing tentative assessment of landing sites and collective arrangements of knowledge, which occurs within and across all scales of action.

There are at least four scales of action, established from our biased figural perspective, which we should consider. The first scale of action includes events from the atomic, molecular, and cellular levels to the level of organs and integrated systems. At this level selection determines meaningful consequences in terms of how it designates and deals with persistence and change. It determines as well how this is implemented in terms of homeostasis, maintenance and the self-identity of the system. Traditionally this form of selection is thought to remain below the threshold of awareness. However, if landed upon and thereby taken into account, acts of selection would agitate the system enough to affect systems of attention, motivation, and emotion. In *Freedom Evolves*, Daniel Dennett suggests that free will enters the equation at this scale of atomic uncertainty. By inserting free will at this point, Dennett only succeeds in isolating reality, yet again, in hidden places and secret operations, out of sight and inaccessible. Arakawa and Gins propose that through the interconnectedness and implied organization of all scales of action the operation of the world is always in plain sight and can be entered at any level of analysis.

The second scale of action begins at the threshold of awareness on the level of activity that Arakawa and Gins call the “organism that persons.” This scale of events indicates the organizational level at which an organism behaves as a person (1-2). This is where landing sites and landing-site configurations become systems of attention, modes of perception and action. In turn, these modes of operation determine meaningful consequences and puzzle out the criteria of our values. The form that the organism takes on results from the enactment of this constant measuring, which the “organism that persons” then takes on. Arakawa and Gins have called this level of development “the mechanism of meaning” because it is at this point that the act of making a distinction becomes the way humans contribute to the co-production of the world. This is the case whether a person distinguishes a form by molding materials, by perceiving similarity or difference, or by expressing distinction through the act of naming.

The third scale of action grows out of the individual and into the communal structures of belonging. As Probyn finds in *Outside Belongings*, whether the boundaries of belonging are defined traditionally by locale, blood, race, religion, and country, or fluidly connected by affinity, activity, and interest, this scale of events requires a world of objects in relation to an environment. The factors that distinguish events are discursive and socially constructed. Cultures and sub-cultures ritualize and mythologize their own symbolic forms of differentiation by which certain consequences and meanings attain currency. If the first and second scales of action play out the habitual between the organism and the person, this third scale of action plays out the habitual among the individual, the group and the surrounding environment.

The fourth scale would begin at the level of environmental background—the forest and not the trees, as it were—the continent, and geological and evolutionary time. Yet it also includes human constructs of

history and knowledge. This scale is either so physically large that it operates below the threshold of awareness or so conceptually and informationally encompassing as to lie beyond human computation, memory, or direct perception. At this level events are thought to be invariant or contain invariant properties, which we persist in monitoring.

The middle two scales, which comprise the figural scales of apprehension, are where we live and try to obtain a modicum of control mirrored by every object and action. The largest and smallest scales are below our threshold of conscious awareness but not out of our range of detection. The figural is a level of engagement that produces our habitual scale of perception by settling upon a set of invariant features. Rodowick's discussion of *Discours, figure* outlines Lyotard's argument that the figural is behind representation making representation possible, which leads Lyotard to characterize the figural as the "fugitive at the heart of discourse and perception, as that which troubles them" (Lyotard 135, qtd. in Rodowick 8). It is because the effort to reinforce the world at this level, and at this figural scale, is so large that we deny or ignore that the "blinding energy of desire flows" (Rodowick 8-9). This self-enclosed system is the source of figural beauty and lived desperation because it is a false contour, costly in human terms.

Coordinology deliberately attempts to activate awareness and interconnection of the excluded scales and, in doing so, to increase the size and reach of landing-site configurations as well as the range of meaningful consequences that would arise. The aim of Arakawa and Gins's process is to coordinate forms for the actions they invite. The body of this extended set of actions would be the "architectural body," or the organism behaving as organism-person-environment.

Poet and theorist Don Byrd, in his manuscript *Abstraction*, characterizes the process of interacting with various orders of abstraction as the formation of a distinction and re-entering of the space of that distinction with the purpose of increasing the number of possibilities for next time. While abstraction assumes an autonomous agent, coordinology questions the status of autonomy because coordinology requires that the "unit of consideration, that which is to be measured and assessed, should be the body taken together with its surroundings" (*Architectural Body* xx).

The consequence of terms

"Organism-person-environment," "organism that persons," "bioscleaveconfiguration," "proceduralism," and "architecting" are all terms that have preceded coordinology in attempts to carve out the event-site that indicates both inclusion and distinction (a process Arakawa and Gins have called "cleaving" in *To Not To Die*). From the many manuscript drafts of *Architectural Body*, only one and a half of these terms has survived: "the organism that persons" and "bioscleave." A tour of the development of these terms will be useful in our unpacking of coordinology.

Though the term "organism-person-environment" indicates inseparability of the elements, it also implies a static structure. While this triple term delivers a sense of the problematic effects of boundaries and

order, it smacks of order nonetheless. Thus, the term “organism that persons” has taken its place in order to reflect the conditional nature of the relationship and a process-oriented dynamic. “Organism that persons” sets into motion the previously fixed relationships and provides the tentative conditions that Arakawa and Gins deem necessary for optimal observation and learning by portrayal:

[...] “organism that persons” portrays persons as being intermittent and transitory outcomes of coordinated forming rather than as honest-to-goodness entities. [...] When studying what goes on between the body-proper and the surroundings, it will be necessary to consider the extent to which persons are behavioural subsets of the organisms from which they emanate and out of which they compose themselves as agents of action. The organism that persons is the first step on the path to an architectural body. (2)

“Bioscleaveconfiguration” is a term combined from biosphere, cleaving, configuration, and architecture. Biosphere describes a self-sustaining, self-regulating dynamic of world environment. Cleaving is the operation that both divides and brings together, and configuration refers to armature resulting from the complex process of establishing the structural and functional relationships for the elements being divided and merged. The compression of these terms attempts to implement architecture in a more encompassing and symbiotic sense. Only one part of the compound term, “bioscleave,” remains in the chapter “Procedural Architecture” in order to inflect the static container of biosphere by emphasizing “its dynamic nature” (48).

The term “proceduralism” indicates a systematic approach for which the term “proceduralists” indicates those who would enact it. Both descriptions have given way to “procedural knowing,” “a term covering both instinctual sequences and encoded knowing, that is, habitual patterns of activity” (52). A procedure must always be performed and must resist being considered as either an idea or method. Procedural architecture, conceived as a process, breaks with the tradition of form as function. The important shift from function to procedure, from amplification and extension of the body and the senses to the movement “within and between its own sensing,” defuses the tendency to monumentalize in architecture (58). Architecture often “speaks” to history and historically constructed bodies, as if they were always already formed, like mausoleums enshrining the interactions they reinforce. Procedures bring fixed sequences of action into view and, in doing so, allow us to work upon and alter them (56).

“Architecting” is a term that puts the “ing” into stagnant nouns and rigid structures of architecture. Gins and Arakawa’s book was at one point to be called *Architectural Body, Architecting Organism*, making the most of the cross multiplications in a quadratic equation. Architecting is the description of a practice that is initiated from the part of the configuration and dynamic system of feedback located in the environment. Environment could also be described as “world,” or the “background setting or field for all our experience, but one that cannot be found apart from our structure” (Varela, Thompson, and Rosch 142). Arakawa and Gins use the term “surround” instead of environment to neutralize the tendency to categorize events or structures as either nature or culture. Perhaps in the last evaluation the term architecting is too heavily weighted toward the effects of architectural processes, making it seem that action initiated by the “organism that persons” intervenes in the surroundings as if from a source external to the organism.

Even so, the basis of architecting is ecological. If the organism and its surroundings are inseparable, and if one's surroundings trigger changes in the organism, then the organism can deliberately interact with its own process of selection by building environments that trigger "other" selections. The first goal of "procedural architecture" is to dismantle the inherited body we perceive as reinforced by environments constructed in the history of architecture. A "tactically posed surround" works to a great extent on habitual, automatic, or unconscious functions in the organism. The degree to which the "person" becomes aware of the interaction (historical subjectivity) is the point at which new procedures can intervene at any or all points in the configuration—from feedback structures in agency to aspects of objecthood and structures in the surroundings: "Architecture is the greatest tool available to our species, both for figuring itself out and for constructing itself differently" (xx).

Finally, the term "coordinology" indicates a practice that is initiated from that part of the configuration located within the tentatively acquired autonomy of agency. The term coordinology does not appear in the final text of the book *Architectural Body* and was omitted in the last draft, perhaps because the term too readily accommodates our tendency to make grasping at straws into a bona fide system. Or perhaps the suffix "ology" implies too much separation from the everyday, implying that coordinating belongs in the library or laboratory. The importance of coordinating, however, is discussed in the chapter titled "Notes for an Architectural Body." Here Arakawa and Gins state their position clearly: "Not a series of actions taken on this scale of action or that but the coordinating of several scales of action makes a person able to construct a world" (63). Coordinating is the active link in agency between putting procedures into play and allowing behavior learned outside awareness to be fed back through procedurally triggered occurrences. Procedures produce behavior outside awareness, and coordinology must figure out how to bring the indications of selection and change to perceptual and symbolic learning. Behaviors or events outside of awareness can be landed next to or nearby and can be coordinated with other landing sites to make increased awareness possible. Coordinology attempts to ensure that different configurations of learning are distributed throughout the body.

Despite the term's absence in their book (it does appear on the back cover), I have chosen to focus on coordinology because it can be practiced at the level of agency. The suffix, "ology," emphasizes the procedural and heuristic aspect of their architecture which shifts the notion of study back onto personal awareness and the organism's "hunt for clarity" (Gibson 271). Clarity is problematic only when it serves the function of study and not the procedures of the body. Within the heaping pile of names and the onerous task of naming, coordinology characterizes the theory/practice nexus pervasive in Arakawa and Gins's project. Coordinology is the most neutral operative term for the actual process, or mode of forming, because there is no reference made to scale, substance, material, or structure. It implies a purposefulness of interaction without a totalizing image—a symbiotic relationship pinpointing the decisions that produces inclusion and exclusion, distinction and judgment. Coordinating this kind of tentative connectivity is the basis of Arakawa and Gins's key architectural procedures—disperse-to-contrast and tentativeness-cradling—which, as the names indicate, are not steady-states but situated enactments.

Monorails of homeostasis —three “bad” habits

Coordinology works against the socially constructed monorails of person and culture—monorails that arise from the human capacity to produce homeostasis by focusing on one scale of action and one set of structures. The three aspects of agency that have become habitual in the collective imaginary—that is, what we allow ourselves to think, do, and say—are as follows: centralizing the command post of subjectivity, dependence upon symbolic capacity (language), and the need to ground knowledge and being. Both the use of language and the administration of being serve to ground our activities at the figural scale of agency where actions and events are conceived as formal operations, drastically reducing chances for diversification and change. The far-reaching capacity of language to colonize forms of organization subsequently models the relationship of thought to social organization. The repercussions in terms of everyday practice can be seen in academic discipline, the social construction of individual bodies, and the level of analysis that privileges understanding—the preference for linguistic learning over perceptual learning, for example. In order to discuss what coordinology attempts to enact, we must unpack the monorails (of agency, language, and grounding) it attempts to dismantle.

Agency

Agency represents one of the monorails that habituate the relationship between and the movement across different scales. In *Architectural Body*, Arakawa and Gins are suspicious of the notion of agency and this is perhaps the ultimate reason they resist giving the name coordinology to the crucial activity of coordination:

Calculated measures that have distinct and purposeful steps do take shape under the aegis of some agency. But because what (if anything) authorizes agency within bioscleave lies hidden, agency, all agency remains suspect. Defining procedure as a process that is the work of an agent, or that at least implies agency, we attempt to smoke out hidden agents or agency or to grow (the basis for) new ones. (52)

Arakawa and Gins are suspicious of agency but at the same time recognize it as the basis of the activity of coordination and the performative quality of tentativeness. Certainly one problem is what the word perhaps triggers for them—a center of control and will, the secret agency of subjectivity, fallout from the cold war between body and mind, those things which have forced their way into living by making themselves available as a generic administrative form of being.

Arakawa and Gins have mixed feelings about agency. Whereas they recognize an organizing quality not attributable to structures or functional relationships that they take as being undeniably suggestive of (some degree of) agency, they are reluctant to assign agency a role within action. This is where landing sites can reconnect the subtlety of form with the quality of action. Events on the smallest and largest scales can

initiate the domino effect more easily because there is no loyalty to the contours of figural agencies (modeled on body-scaled identity) to impede flow.

In Arakawa and Gins's four-way dialogue inside the *Ubiquitous Site House*, they land upon the notion of agency in trying to tease out how a rapid succession of experienced events overreaches ubiquity:

GINS: The number of purposeful actions required of you has been suddenly greatly reduced. It becomes easier to observe yourself as an agent of action because this closed-in world exacts fewer purposive moves.

ARAKAWA: Even so, there is still a semblance of an agent and there is still a great scattering.

GINS: Yes, it becomes predominantly a world of landing sites. Down to that level of abstraction. (34)

The goal is to describe what is actually going on—the double experience of inclusion that awareness of more than one scale produces. This landing-site configuration is achieved by using what is already in place—the versatility provided by the person interacting with both the organism and its surroundings. That is to say that an “organism that persons” can simultaneously feel and be aware of belonging to all the sites that comprise it, as well as all those that surround it, and those with which it comes into contact. Another configuration arises from the person's ability to connect these two existing configurations, but also the person's ability to bring about changes that would allow unanticipated configurations to emerge. The experience of these shifts of inclusion begins and flows from the moment an “organism that persons” feels the organism-person-environment. In the dialogue cited above, Arakawa goes on to assert the benefits of dropping the centralizing habit: “[A]n everywhere evenly distributed agent—a ubiquitous site or an architectural body—will even be able to re-negotiate gravity” (34). New modes of agency would be the forms of tentative coordination and zones of neutrality established while trying to tear down the old house of agency built on one scale of action and reinforced by all the houses of language.

Whereas there is a tendency to anthropomorphize agency into little homunculi—an eating agency, a sleeping agency, a desiring agency—Arakawa and Gins bring agency back to the point of interaction, to the point where an organism unfolds as a person through landing sites and landing-site configurations. It is through sited awareness that an organism either behaves like a person or as something else, an “architectural body,” for instance, that keeps open the figural scale of forms and events and requires that we do not allow anything to congeal as figure. In this way, landing sites are less impeded by the etiquette of contour, and are therefore more likely to include events from other scales of action.

By working on multiple forms of inclusion, coordinology aspires to link multiple scales into configurations which, in turn, allow actions that attune the “organism that persons” so that “affordances,” compiled from these many scales, may become operative. As a result, the available ecological information would radically increase, and the field of configuration would become the “organism-person-environment” that Arakawa and Gins describe, rather than the binary configuration of subject-object. Arakawa and Gins have concluded that the way to deliberately evoke change in activities under the threshold of awareness is by constructing environments—tactically posed surrounds—that diminish “inattentional” blindness on a small scale and deactivate fixed sets of invariant information on a large scale. The result is the disorientation of our

relationship to the environment because we suddenly become aware of our processes of attention, selection, and decision that had previously gone unnoticed.

Breaking the monopoly that the figural scale has upon perception does not eliminate the scale of objects from millimeters to kilometers, but it does change the context. Everything is context, and Arakawa and Gins suggest that all contexts are architectural contexts. The way a person walks through a desert or forest, or the presence of a single artifact makes an environment into an architectural surrounding: "Repeatedly, incessantly, a person surrounds herself by conforming in a particular set of ways to what surrounds her. Constrained by her environment, she proceeds to piece together an architectural surround that maps onto the one within which she finds herself" (40).

Historically, we have been continually subjected to the numbing constraints of architecture. By coordinating all scales of action in relation to the architectural procedures of Arakawa and Gins these forms of subjectivity and personhood can be reconfigured into different relationships between the organism and its surrounds, bypassing the inflation of the figural scale. However, we cannot do this single-handedly or intermittently. It must instead be conducted as daily research: "[T]here needs to be a communal devising, selecting, and combining of techniques that will strengthen organism-persons and help them regenerate themselves; results need to be pooled and compared" (xxi).

Language

Arakawa and Gins have devoted a decade to working on *The Mechanism of Meaning*, a series of interactive painting-installation-puzzles which systematically dismantle the cerebral isolation of language, leading the participants to demonstrate to themselves the body-wide implications of language. Considered as the backdrop, background, or ground, language is often thought to always already contain everything we might think, say and do. Coordinology presents a problem for the autonomy of the organism protected by the influence of language in that it proposes to coordinate activities of which language is only one. The issue that must be resolved is whether language is representation and corresponds to external occurrences and internal states, or if language directly activates the mechanisms involved in perception and action.

I have chosen to consistently bring in research from ecological psychology because it focuses on studying the relation of the organism to the environment, which is in keeping with Arakawa and Gins's approach and supplies a basis for understanding the practice they propose.

Robert Verbrugge, in his essay on language and event perception, offers an ecological perspective on the biology of language. Suggesting an alternative to the adversarial roles of language and perception, he argues against the tendency to understand the relation of perception to events as parallel to the relation of words to things (162-3). He proposes to reverse this traditional analogy by combining a "redefinition of language with a broadening of the parameters of event perception, making it clear in the process how the two can be viewed as compatible and mutually supportive" (164). Better defining this relationship would help in

accounting for imaginings and experience that seem to “have little or nothing in common with the articulatory events that prompt them” (159).

His approach to language as a constraining and directing event dissolves the divide between comprehension and perception in an effort to treat comprehension as a brand of event perception where language is its specific medium. For Verbrugge, language and perception approach one another in the “quality of knowing they permit” (167). Both types of knowledge reposition the role of metaphoric language from representing correspondences to preparing a person for coordinated action. In other words, language “attunes” a person to the environment through both virtual experience and precise description. From an ecological perspective, “attuning” means directing perception toward a certain level or order of invariant features. For the architectural body, however, attuning through language means providing triggers in order to enable coordinating modes of perception that link the various levels of environmental information.

Verbrugge, more than most neo-Gibsonists, finds it necessary to include (rather than isolate) the perception of thoughts within the perception of the world and to allow them as well an ecological basis. He proposes that events in the environment (information) are pragmatically unique because they are context-dependent. Verbrugge’s notion of information expands the context of language to include its surroundings and the affordances provided by communication, imagination, and perception and considers them as equally a part of the environmental array and interactive situation. In this theory of specific interaction, both language and art act as catalysts which trigger events that “constrain the flow of imaginings,” without containing representations of their own process or results (170). Verbrugge differs from many neo-Gibsonists in his recognition of the “affordances of affordances,” something that requires that we consider the imaginative and communicative processes as part of available environmental information. In other words, Verbrugge raises the stakes by including our thoughts and imaginative perception about environmental information within the pool of available affordances, suggesting that these, too, may be directly perceived.

Expanding upon Pierce’s notion of index, which was limited to deictic expression (words existentially related to the immediate environment), Verbrugge states: “my extension of the term index to cover all language is based on what I see as an existential relation between all words and their natural occasions” (179). He argues that language is an event that is neither representative nor arbitrary, but related to some “natural” constraint as are typical indexes such as a footprint, thunder, bad cough, or pencil line, for example (177). However, Verbrugge recognizes that language seems arbitrary because scholars have understood the relation of words to things to “epitomize nonspecific relation, exhibiting neither uniqueness or physical necessity” (162). Hence, he chooses instead to address the study of language by focusing on the relationship of words to a listener’s experience and actions: “A listener’s experiences include perception for the speaker’s cognitive actions and communicative intention, and they include virtual events and cognitive actions that are regulated in part by what the speaker says” (162). Although the relation of words to things is not unique, the use of generic word tools in a specific situation is indeed. The body-wide dispersal of communication, plus the ongoing interaction of organism and environment, add up to the complex and multifarious levels of invariance in environmental information. Explains Verbrugge: “While language constraints may be abstract,

they can nonetheless be *unique*. For the seasoned listener, the catalytic effect of words can be very precise” (181).

The important point here is that an index needs an agent and not just a signifier and a referent. “[P]eople and their catalysts develop together,” writes Verbrugge, but only “if we view language as an event integral to our environment and not an arbitrary associate of it” (180-1). His argument that language is fundamentally not representational or arbitrary allows for an integration of the theory of language with other activities in the organism and accounts for the persistence of language as a reliable tool for the exploration of adaptation, learning, and coordination. He concludes that language is not a collection of descriptive surrogates estranged from the natural world, but a constituent part of natural events (183). This indexical approach is consistent with one scale of action/event that, as Arakawa and Gins suggest, is involved in coordinology. Verbrugge’s desire for a more comprehensive theory of event perception is precisely the practice that is taken up by Arakawa and Gins and implemented as a deliberate way of participating in a co-construction of the world.

Arakawa and Gins have employed naming throughout their collaborative endeavors as part of their process of critical assessment and coordination of diverse modes of presentation. By dimensionalizing the sign—that is, coordinating it with both direct and indirect perception and action—Arakawa and Gins bring it into close proximity with lived experience and the concerns of the organism. Within a coordinating system, critical naming has the ability to undo, or unmake, and gives life and weight to the tentative richness that names hold in reserve. The human organism, so committed to closure, recognizes that reality is effectuated through oneself as “the mechanism of meaning” because the role of language in coordinology is to afford for “play” in the body-environment interaction and to allow room for directing change. The duplicitous nature of naming as imaginative designation, and as both an unwitting and deliberate trigger, makes it a specialized tool for planting seeds or tearing down walls.

Verbrugge, writing in 1987, stresses the importance of a body-wide consideration of language. Arakawa and Gins had already come to a similar conclusion a decade earlier reflected by a shift in their creative practice. From 1963 to 1973, they worked on “ways in which our cognitive apparatus might be reconfigured—or liberated from the tyranny of “given” modes of thought” in *The Mechanism of Meaning*. They then turned their efforts, from 1973 to 1989, to enlarging the field of engagement by encompassing all the activities going on in the organism-person-environment in *Bridge of Reversible Destiny/The Process in Question*. The Bridge situates the fragmented body-wide understandings gleaned from *The Mechanism of Meaning* within in a large-scale built environment. Where *The Mechanism of Meaning* confronts participants in the highly focused surroundings of the museum, the *Bridge of Reversible Destiny* produces a complete environment that is incessant and unrelenting. *The Mechanism of Meaning* presents a sequence of body-sized puzzles while the Bridge presents a sequence of continuously transforming environments. The layered steel mesh of the Bridge construction allows no respite from the situational, or the possibility of retreating to a safe viewing distance. As one heads to the middle of the Bridge, the *Helen Keller Reading Room*, all efforts to orient oneself through language or perception of invariant features are disrupted.

In both *The Mechanism of Meaning* and *Bridge of Reversible Destiny/The Process in Question*, a reassembly ensues after the mid-way mark. But it is not a programmed reassembly. It is not the substitution of one form of sensibility or subjectivity for another towards establishing a new set of values. Instead, the possibility of reassembly has to do with following through on change to find the point at which identity no longer holds and to determine if that point, too, is moveable. Arakawa and Gins's reassembly is based on the organism and offers procedures to the participants for self-observation and instruction by moving across modes of sensing and rejecting programmatic outcomes which overdetermine form, function, and relationship. The shift that occurs from *The Mechanism of Meaning* to a notion of Reversible Destiny is a shift in scale of action and event. While *The Mechanism of Meaning* invites a bodily response, the *Bridge of Reversible Destiny* invites a person to coordinate the many modes involved in making a body-wide response. Arakawa and Gins, like Verbrugge, are dissatisfied with the segregation of language from the study and practice of bodily engagement of an organism with its environment.

Groundedness

Another "bad" habit that coordinology attempts to address is identified by Varela, Thompson, and Rosch in *Embodied Mind: Cognitive Science and Human Experience*. They point out that both nihilism and absolutism are two forms of "grasping" which satisfy the desire for "groundedness." They describe "groundlessness" (*sunyata*) as "knowing how to negotiate our way through the world that is not fixed and pre-given but that is continually shaped by the types of actions in which we engage" (144).

Varela et al. describe the fear of groundlessness as Cartesian anxiety, as being caught between two "as-ifs:" "we seem condemned by our constitution to treat these representations as if they were the world, for our everyday experience feels as if it were a given and immediate world" (142). They point out that this anxiety only blooms if there is a pre-given, independent world and outer ground that we are unable to apprehend and, as a result, we fall back on the search for an inner ground. Scientific method is the grounding of knowledge in verification, cementing the boundaries of each discipline. Similarly, body image is the cultural grounding of subjectivity in decorum, corseting the organism and fixating it on pre-fabricated goals. On any scale, the grounding of world order or personal order is only a fictive certainty.

Varela et al. offer the "middle way" of mindful awareness from the Buddhist tradition as a system that recasts our anxious relationship to groundlessness (or the tendency to grasp) in order to lead us to the "very fabric of dependent co-origination" (144). In contrast, Arakawa and Gins offer an all-inclusive way, a contingency plan—Reversible Destiny—where mediation acts in the place of meditation. Reversible Destiny is not a religious project and thus does not offer any image or pre-stated goal, such as enlightenment, to be enjoyed elsewhere. It is important to note, however, that Arakawa and Gins's project does import ideas from Buddhism. In Zen Buddhism, for example, the ordinary body is the Zen body, and this is where Arakawa and Gins begin their articulation of "the organism that persons." Arakawa and Gins's concept of the "blank,"

moreover, owes much of its complexity to the concept of *sunyata*, translated as “groundlessness” (144), “nothingness” or “emptiness” (Nishitani 33).

There is, however, an important difference between the “middle way” described by Varela et al. and Arakawa and Gins’s “architectural body.” Varela, Thompson, and Rosch replace a failing Western ground with an Eastern tradition of groundlessness. To Western readers, it may seem as though the rug has been pulled out from under us and the ground along with it, to arrive at a groundless state. However, by virtue of a sleight of hand, instead of falling into the abyss we land on an entirely different concept of ground—the middle way—which has been inserted under our feet. What is accomplished in one fell swoop is not the erasure of “grounding” but the substitution of one rug for another, one tradition of foundation for another. Groundlessness is a concept of ground that is tied to another scale and dimension, even if it is to be found in the negative “state” of elsewhere. In establishing invariant features that govern life adjustments in that “elsewhere,” Varela et al. must still rely on an idea of the body as an instrumental means to an end.

In contrast, Arakawa and Gins ask us to remain in this world, a world which each of us co-originate and maintain. Arakawa and Gins do not provide a binding tradition or encompassing belief to aid in the task of practicing sustainability. Because “tentative constructing” neither instills an ultimate purpose nor determines the form of interaction, it greatly distances itself from the more totalized approaches of grasping for ground or embracing groundlessness. Coordinology does not prescribe what will happen next or how an architectural body must emerge. It values instead the pragmatic effect of increasing the possibility for action with each act of landing, configuring, or coordinating.

Thompson sees alternative ways of practicing mindful awareness in the artistic cultivation of Eastern poetry, calligraphy, painting, and martial arts: “The initial step in all of these disciplines is that the mind deliberately places the body in a special form or posture” (140). Whereas this might easily be confused with the architectural body, each of these forms of artistic cultivation prescribes a particular pre-established body through a given set of behaviors. Arakawa and Gins point out that, as a concept, “body” has traditionally been aligned with one scale or another, but has rarely been adequately addressed for its uniquely pragmatic character of organization. The “bad” habits of Western culture—central agency, language dependency and groundedness—are difficult to break. They continue to guide and reinforce our historical, cultural, collective and muscular memory. Conservation and prediction have brought us to the present by safeguarding the operations (homeostasis) that ensure temporal continuity. Dynamic equilibrium, however, can manage, or even gamble, under non-homeostatic conditions for periods of time. This unstable state is ecologically driven by exploration and affordance, and we should now turn our attention to how these ecological opportunities are affected by contingency.

Contingency

How, then, can we get around the figural scales of perception and action that claim information and organize understanding? As Thelen and Smith suggest, we are able to substitute one mode of perception for

another: “What turning up the microscope reveals is that individual activity—real time perceiving, moving, remembering—constitutes the driving force of change” (311). The consequences of singular events impact how we designate and interact with persistence and change. The properties of an organism emerge through interactions not scripted in genetic codes, but through interactions which can be observed in the development of embryos, such as: “[h]ow the basic processes of neuroembryology were themselves dynamic and contingent, and how these epigenetic processes built a brain wired to benefit from the time-locked properties of the input—the multimodal consequences of experience” (311).

The implication of Thelen and Smith’s study for coordinology is that selection replaces instinct as the primary developmental agency. We find additional support for this kind of replacement on the larger scale of evolutionary development in the work of Stephen Jay Gould, who argues that contingency ties unique and singular events to the evolution of biological systems. In *Eight Little Piggies*, Gould discusses the accepted notion that the development of five fingers provides evidence of an evolutionary progression towards humanity, and challenges this viewpoint of human privilege with findings that suggest our ancestors had *more*, not fewer, fingers. Gould comments that the naive “ladder of life” view depicts an ascendancy model, but notes that “ladders are culturally comfortable fictions, and copious branching is the true stuff of evolution” (67). After a thorough examination of the evidence, he states that “five was not meant to be, but just happens to be,” and that “alternative possibilities are legion, and an eventual five may be a happenstance, not a necessity” (76). In his conclusion, he notes that contingency is the key, which “embodies an exquisite tension between the power of individuals to modify history and the intelligible limits set by the laws of nature. The details of individual and species’ lives are not mere frills [...] but particulars that can alter entire futures, profoundly and forever” (77).

Arakawa and Gins’s project, and coordinology in particular, focus on the cultivation of the organism—that is, a practical education of the senses. There is not a world to which we are denied access. Co-origination of the world is available to us through the mechanisms already in place and currently in use in the organism. Leaving behind the artist, poet, or the “overman” as models, Arakawa and Gins instead use marmots and snails as the models of interaction for the architectural body. Their rule of engagement is that we become self-marmots, self-guinea pigs, and human snails to facilitate two important aims: a) to coordinate forms for the actions they invite and b) to prime, or prepare, the organism-person-environment for transformative possibilities.

Designating Triggers

A notion that continually rings out from the background research for this inquiry comes from the cognitive theories of Maturana and Varela. They conclude that “the environment can be said to trigger or select a change of state, but that it is *the structure itself that determines what can and cannot be a trigger*” (Mingers 320; emphasis added). On this point, autopoieticians who adhere to indirect perception (structural coupling) and ecological psychologists who adhere to direct perception (radical empiricists) are in agreement. The

question is how does the structure itself determine the trigger? For Maturana and Varela's "structure" is constituted by material elements that define a space "whose dimensions are the relations of production of the components that realize it" and does not imply agency or affect (88). The gap between an "environment selecting a change" and a "structure *itself* determining the trigger," however, does supply a self-reflexive moment and level of analysis requiring a process of selection (of components and scale of environmental information). In turn, this may prove useful in identifying opportunities for coordinating many different types of structure, including organizational configurations that are pragmatically attuned to the surround.

Verbrugge has suggested that our current purposeful action and our prior attunements produce the "pragmatically unique" information that ultimately becomes the structure of our relationship with the surround (161). If we consider all our capacities as part of the events of our unique surround, then the physiological basis for modes of attention, and for engagement with information, becomes the pressing issue. For an "organism that persons" and a practitioner of the architectural body, the primary concern of practice is opportunity, or how the body *might* work, as opposed to research imperatives that are concerned with how the body *is* working. The inconsistencies, paradoxes, and gaps that overlap within existing bodily activities provide the avenues which coordinology uses to inflect the criteria of selection in the organism. As Ralph Ellis points out in his introduction to the *Cauldron of Consciousness*, the relationship of the phenomenological experience of affect to its correlating biological processes is enactive. Understanding this correlation requires bringing together strands of thought that include self-organization and biochemistry (S. Kauffman and P. Monod), philosophy and psychology (M. Merleau-Ponty), and neuroscience (W. Freeman and A. Damasio) (Ellis 3).

Ellis observes that the entire organism mobilizes itself around a chosen plan of action: "Living means to organise and maintain. The study of living is no longer connected to elements or substances, oxygen, nitrogen, silicon, steel" (3). A self-organizing system can actively appropriate, replace, and reproduce the physical substratum elements needed to maintain its multiply realizable patterns of activity. Emotion, one aspect of affect, becomes part of this loop after perception takes place, which in turn takes place after the stimulus has already been categorized and evaluated. This process to a great extent determines the appearance of the object by attending to aspects of the object (affordances) that are emotionally important to the organism. As seen in Gibson, Varela et al, and Ellis, these qualities thus permeate the experience of the object and its surroundings. Emotion helps distinguish between conscious and unconscious processes, and can therefore account for the role of agency as active rather than reactive.

We must avoid an "appendage theory" of consciousness where it is just another layer of processes or processing. The neurophysiology of becoming conscious of something means that the physiological structure of the emotion would change. In this way the "moveable feast" of triggers is an opportunity for coordinology to practice its ability, through adjustment to necessity and meaningful consequences alike, to vary how the triggers for change are designated.

Coordinating modes of perception.

Arakawa and Gins bring together a range of convergent concerns across the arts and sciences, and through coordinology they aim to engage all scales of action. It will be useful at this point to identify and coordinate some of these convergent concerns at the scale of disciplinary research for which Arakawa and Gins have developed the practice of coordinology. For the purposes of this project, I have decided to focus on biologist Stuart Kauffman in relation to his inquiry into self-organization and emergence, along with experimental psychologist James J. Gibson for his work on the uses of perception and perceptual systems. These research projects in the life sciences provide environmental information as sites to be landed upon and coordinated by the multimodal practices of Arakawa and Gins.

A question posed by Martin Jay in the conclusion of *Downcast Eyes* will crystallize the importance of Arakawa and Gins's work. He asks: "How open is our sensual interaction with the world to radical change?" (590). Here our first task is understanding the word "radical" in Jay's question. Jay is employing a general notion of radical, one that points to sweeping or extreme change carried to the farthest limit. But the term also connotes meanings of "fundamental" or "basic," which align more closely with the kind of thorough rigor that William James tried to evoke in his notion of radical empiricism. Arakawa and Gins's approach combines both senses of "radical" by engaging with the extreme limits of change through an incremental and pragmatic process of interaction.

When Jay suggests that "the complex mix of natural and cultural phenomena called visuality defies reduction to any narrative mould based on scientific data alone," Arakawa and Gins agree with one major qualification (591). They concur that scientific data alone is insufficient for understanding vision. Their insufficiently procedural "bioscleave" hypothesis states that the human species has not the "wherewithal to figure out the nature of their agency nor the requisite skill to engineer for themselves what would amount to a reversible destiny" (54). More importantly, Arakawa and Gins's work indicates that the problem is not the reduction of visuality to narrative moulds or disciplinary data, but the reduction of body-wide perceptual coordination to the notion of complex visuality or single scales of action. Though visuality may defy narrative or discursive reduction, it cannot resist self-exploration through landing sites, which opens any site of interaction—before it can be categorically or habitually processed—to further attention. In other words the question, "What is visuality?" may be answered by researching discursive practices, while the question, "What is body-wide perception before it is vision?" may best be answered by exploring landing sites and landing-site configurations.

The same problems that apply to explaining vision as the dominant source of sense information carry over into the notion of "visuality," despite all efforts to open vision to the "complex mix" of nature and culture. Jay's notion of "visuality" still offers a single-sense, single-direction focus on perception and continues to ignore the degree of reciprocal interaction between an organism and its surround, a relationship that Arakawa and Gins pinpoint as the source of perceptual activity and fundamental change. It seems almost too obvious to say that paintings were made for the eyes, but this is precisely the assumption that an investiga-

tion of perception, rather than visuality, seeks to challenge: we do not see only with our eyes. Arakawa and Gins's daily research is radical because they find that the fundamental source of "the complex mix of natural and cultural phenomenon" must be enacted through the coordination of perceptual systems via interaction with the surround. Perhaps one way to understand Jay's use of the word "radical" would be to measure the degree to which he considers narration to be an autonomous faculty or a body-wide enactment. At the heart of Arakawa and Gins's endeavour, however, is the ongoing assessment and accessing of the connective operations and distinctions generated by our own patterns of organization. Their approach to the "complex mix" foregrounds the flexibility of human development in the processes of self-organization.

Patterns that advance the overall goal: Stuart Kauffman

Stuart Kauffman describes self-organization as an enactive model of co-evolution and interaction "that organises component elements of conscious organisation into patterns that advance the overall goals of the organism" (Newton 92). Kauffman admits, to his own astonishment, to a "puzzled realisation that the way Newton, Einstein, and Bohr taught us to do science may be incomplete" (Kauffman ix). In following the example of physics "we are taught to pre-state the particles, forces, laws, and initial and boundary conditions, then compute the consequences" (Kauffman ix). Kauffman's work on processes of self-organization calls for "the need to rebuild evolutionary theory as a marriage of two sources of order in biology—self-organisation and selection" (xi).

One way to approach this involves looking into Darwin's pre-adaptive problem, which asks how an organism can move toward or select a direction of change, or adaptation, by selecting components it does not possess at the time. For example, how does the organism select for the component of an eye without having an eye? How indeed does an organism position itself to make those selections? Kauffman agrees with Gould and doubts that we can pre-state what he calls the "configuration space of a biosphere" (x). He goes on to say that preadaptations are "causal consequences of parts of organisms that were not of adaptive significance in the normal environment of the organism, but might come to be of adaptive significance in some new environment and end up being selected by natural selection" (x).

Those whose thought is structured by the formal habits of the figural scale rather than by dynamic interactions may find it mysterious that an eye might emerge (appear) in an organism that has not needed one. Here, however, the relation of the organism to its environment reveals itself as crucial. An organism positions itself within the evolutionary flow of selection by changing its relationship to its environment and by perceiving new opportunities. These include observations of the most basic workings of the organism's own perceptual systems—the sum of all our bodily activities—which we may now understand as "the mechanism of meaning:" "One and the same, say, brain state is a simultaneous realisation of any number of unconscious mental states. Given that brain state, various conscious states may be subsequently realised; which depends on how the agent is prompted" (Georgalis 181). Prompting and priming are two important effects of coordination.

Lawful specificity works on all scales of interaction and requires us to consider the output of affective states on equal footing with input from the environment as feedback for our dynamic systems. Kauffman argues that the interaction at the root of emergent life processes and self-organization is catalysis. Philosopher Natika Newton summarizes Kauffman's position:

He argues that the sort of interaction at the root of emergent life processes is catalysis: a molecule acts as a catalyst if it speeds up or makes more probable a reaction among other molecules that would otherwise occur more slowly. A self-organizing system that can catalyze the reactions that maintain its own existence, or reproduce its own states, Kauffman calls a "collectively autocatalytic system." A living organism is such a system. (93)

While Kauffman observes and charts the emergent possibilities of self-organization, Arakawa and Gins suggest we use this information as the basis for the practice of coordinology in an effort to more accurately observe and assess possibilities of self-intervention. These concerns and approaches to research are invitations to new forms of action and configurations of agency in an architectural body. By understanding Kauffman and Gibson in tandem, we may establish a context for the emergence of Arakawa and Gins's practices and their insistence on attending to the organism through diverse sites of investigation.

Units of anatomy are not units of function: James J. Gibson

James J. Gibson's idea of "affordances" suggests that perception is not detection of information but the awareness of meaningful consequences. Gibson's ecology of perception places the evolutionary within the contingent and pragmatic context of what the environment affords in terms of specific information, and how "individual activity is the driving force of change," as well as the extreme importance of considering the organism and environment together (Thelen and Smith 311). There is a huge amount of information that our surroundings afford us, and this should be our first consideration.

The way in which we organize and process (coordinate) information leads Gibson to discuss our misguided tendency to associate a given sense organ with a given perception, instead of considering the organs as components of a perceptual system. He summarizes the clinical data that is the basis of his ecology of perception and observes the following:

There is no correspondence between nerves thought to be specified and the senses, e.g.: the optic, auditory and olfactory nerve. And there is no distinct nerve for touch or taste. The 12 bilateral pairs of cranial nerves have mixed functions. There are not 12 corresponding senses. Incoming (afferent) and outgoing (efferent) fibers are found in each bundle. [...] The units of anatomy are not the units of function. (42)

But there is many a slip between the cup and the lip, as it were, since a simple action may involve both enabling and inhibiting processes. There is more than one meaningful consequence that determines the goals and tasks being carried out by way of more than one physiological system. Contradictory and paradoxical processes counteract each other to achieve global results. Perceptions are not traceable to specific anatomical

units because the units themselves do not configure the various anatomical functions. It is instead the “organism that persons” who inhibits, enhances, and coordinates bodily states. Such paradoxical loops can be seen at work when a person is sleeping:

In REM sleep one biochemical (the afferent acetylcholine) projection causes the motor cortex to be very active sending commands to motor neurons to act out the dream while another biochemical projection (the efferent acetylcholine areas) drastically lowers muscle tone so that the muscles do not make meaningful movements. (Faw 65)

During sleep, the priority of an organism’s safety prompts the need for measures designed to protect it. However, because the anatomy is multimodal, other situations give rise to contradictory processes, making it necessary for the organism to distinguish between different modes of activity performed by the same functional units. For example, the reason that the movement of an image on the retina does not cause sensation of motion is because the brain causes the movement differentiating this cause from intruding stimuli (Gibson 39). Gibson favors the theory suggesting that neural input, caused by self-produced action, is different from neural input caused by an intruding stimulus. In this scenario, the brain does not interpret neural input, but recognizes neural patterns.

The paradoxical interaction of internal systems and the differentiation of input to ensure continuity of perception both imply that an organizational purpose—external to the perceiving system but integral to body-wide perceptions—is being coordinated. The criteria that produce safety and the singular experience of an organism’s perception require a purposeful selection and the coordination of detection, perception, and deduction of meaningful consequence. It is clear why an organism would come to recognize these differences (eliminating constant vertigo, motion sickness, confusion of environmental events, or an inability to initiate action). It is also clear that these inconsistencies in the parallel processing allow a precise moment for coordinology to put its foot in the door and enter the site where information and material structure are inseparable. Landing sites and landing-site configurations are, however, able to re-enter sites which appear solid or atomic and can open them to further distinctions, mining these events for still more landings sites. Coordinology is room-for-play in the organization of the organism.

The important point here is that each of these inconsistencies demonstrates different forms of action and requires different cognitive configurations. Assessing the qualitative difference between self-affecting actions and intruding actions, or between initiating action and suppressing movement, provides more landing sites on more scales of action, and thereby extends a person’s coordinological practice. By proposing that different sorts of stimulus information exist within affordances, Gibson makes it possible to consider several acts of coordination. First, although information is deemed a property of the environment, affordances arise from specificity of configurations and not from properties of the environment thought to be innate. Second, attention and decision are factors that would deflect the complexity of feedback loops. Third, because in the ecology of perception we may directly interact with the environment, we are therefore not coordinating mental representations but meaningful actions. What this means for the architectural body is that there are many concurrent loops available for proprioception and control of action, some which focus upon assessing single scales of action while others specifically aim to participate in configurations involving several scales of ac-

tion. “Tentative constructing towards a holding in place” is the tactic used to notice landings sites, mark their relation to each other and ask, “What is going on here?” rather than insisting that “this is this” (Arakawa and Gins 49).

Although he is interested in the connection of all the senses, Gibson spends a lot of time debunking the relationship of vision to visual perception. His distinction between “visual field” and “visual world” describes configurations of the perceptual system similar to those that Arakawa and Gins develop into coordinology. Visual field is detached and fixated to the eyes while the visual world is ecologically intertwined with the other senses. Jay has suggested that cultures may be differentiated according to how radically they distinguish between visual field and visual world (4). It is important that we might now use this differentiation not only to describe cultural orientations but also subjective orientation to modes of perception and coordination.

Arakawa and Gins: perceptual learning and procedural architecture

If we combine information from Verbrugge, Kauffman, and Gibson, we find that language, molecular catalysis, and perceptual systems all contribute to an organism’s motivation and successful interaction with itself and its environment. Not only are these already in place, they may be observed and reintegrated into body-wide activity through perceptual learning. At this point, the link to the work of Arakawa and Gins is easily made via their efforts to emphasize the importance of coordinating modes of activity and sources of information. The value of perceptual learning becomes apparent when we acknowledge that all of our knowledge is gleaned through perception and action, both of which are activated and made operable by landing sites in an attempt to hold open the configurative links between organisms and the surround. The co-evolution of the body-environment becomes the focus of perceptual learning and the foundation of procedural architecture, supplying the impetus to use the activities that flow in both directions through body and environment as its key resource. By examining the relationship of vision to the other senses in Gibson’s research, we get a glimpse into the tasks of integration which coordinology addresses. Gibson observes that by looking at a limb a person can voluntarily control the movements of that limb. The movement sensitivity of a visual system can be substituted for the movement sensitivity of the muscular system for manipulation and locomotion.

We control the use of tools because we connect vision to our proprioception. Tightening a bolt with a wrench requires the sensitivity of our touch be controlled by the visual input. Visual input can also be used to stimulate physiological response as a conscious and deliberate self-affecting system. Self-affecting, in this instance, refers to an activity that monitors and measures bodily systems which have been opened by landing sites and which become the focus of a deliberate action as opposed to remaining an automatic function. Visualization practices have been widely used to increase accuracy, quality of movement, interconnection, rehabilitation, and motivation. Visualization works on the premise that vision is connected to the other senses, as in Gibson’s “visual world,” and also activates or primes the neural pathways involved in that activity.

Visualizing throwing a ball, imagining throwing a ball, reading about throwing, and throwing are all separate cognitive activities that, when coordinated, allow for the integration of knowledge—a kind of know-how that is activated differently in each configuration. Perhaps there is no stronger instance of the ability to visually control motor skill through vision than the “daily marathon” of Ian Waterman as described by Dr Jonathan Cole in *Pride and a Daily Marathon*. Waterman, due to a rare neurological condition, lost his sense of touch, skeletal-motor and proprioceptive sensation. Through long and arduous practice, he “taught,” or reconfigured, his modes of sensing, feedback, and action so that he literally controls his ability to walk, or reach for a spoon, through his vision. This state of affairs—ongoing and multimodal—are diagrammed by Arakawa and Gins in their chart of visual, tactile, and kinaesthetic landing sites for the body of a “deafferent” and are precisely what is recognized, assessed and practiced in the architectural body (Govan 163).

Ultimately, it comes down to landing sites and landing-site configurations. Every instance of the world involves all three ways of landing as a site (Arakawa and Gins, *Architectural Body* 7): perceptual landing sites, imaging landing sites, and dimensionalizing landing sites. Together these form heuristic devices for literally sorting out the world and determine how a person apportions it (9). Landing sites are purposefully not aligned with vision alone: “most studies of vision fail to recognize the tactile and kinaesthetic components of the “view” or take into consideration the degree to which vision is not purely visual” (Govan 153). Perceptual learning is not confined to the visual and requires the kind of innovation of observation and assessment that Helen Keller and Karl Dahlke demonstrated. In Arakawa and Gins’s discussion of what imaging landing sites entail, they recount the process of blind mathematician Karl Dahlke in solving the polyomino puzzle, a previously unsolved mapping puzzle about border territories. The point of the story is his model for visualization, which had dimension, tactility, density, thickness, and a spatiality that would enable Dahlke to work hour upon hour on the puzzle. In working through Dahlke’s landing-site innovations, Arakawa and Gins conclude:

[T]here can be no doubt that Dahlke’s picturing of the polyomino puzzle involves no visual perceptual landing sites. He is certainly not issuing direct responses to probable existents. Even so, the puzzle pieces need to be given definite shapes and precisely positioned and both of these tasks are, by definition, specific to perceptual landing sites. This leads us to conclude that imaging landing sites act, for Dahlke, as stand-ins for visual perceptual ones. (16)

Dahlke’s enactive perceptual systems are reconfigured to his purposes and practiced to yield practical results. Although Arakawa and Gins do not mention cognitive psychology or neurology biomechanics here, this passage takes up the issues worked on by Kauffman and Gibson and brings them into the cognitive configurations of our everyday engagements. Arakawa and Gins write: “Landing sites merely make explicit or highlight that which all knowing acknowledges implicitly: specific positionings or locatings prevail in all circumstances for all things and events” (22). It is from this aspect of agency—where tactics of interaction with the world are also constitutive of the world—that strategies of coordinology emerge. Coordinology is the practice of actively making, dispersing, and tentatively trying out configurations. Organism-persons “field their surroundings kinaesthetically, tactilely, visually, aurally, olfactorily, and gustatorily all at once, with each modality having a direct perceptual component and an indirect imaging one” (13).

It is within the architectural procedures, or the houses built to enact these procedures, that the coordinology of landing sites, landing-site configurations, and tentativeness come together. The houses are the result of coordinating research and experience, and they are tactically posed to open additional avenues for practice and study. The plans for proposed houses, called *Reversible Destiny Houses*, bring together the multimodal practices of constructing and assessing landing-site configurations using the “Sited Awareness Hypothesis”: “What stems from the body, by way of awareness, should be held to be part of it. Any site at which a person finds an X to exist should be considered a contributing segment of her awareness” (50). Procedural architecture puts sited awareness into evidence by drawing our attention to “the disparity that exists between the world as it happens—awareness as indeed sited—and the world reduced and distorted, made to appear as other than what it happens as—awareness abstracted out of any surroundings” (51).

The more procedural houses one sees, the easier it is to understand the way a procedure might pinpoint a particular issue of orientation or habit of disposition which needs to be dismantled. At the same time, these houses also open up the site of the body by designing alternative affordances, that is, by literally making more landing sites available than there are in the prefabricated organism-object-environment relationships we develop in most of the architecture we encounter. Arakawa and Gins work on such a large number of scales so that they may address the situations and events that cannot be translated or transposed. Each procedure must occur for the lived body: “Think of the procedural as having been enlarged to life-size and as now taking place throughout the sited awareness bounded by an architectural surround; the procedural having thus been brought into palpable view, its fixed sequence of action can be altered” (56).

The implication is that interaction with tactically posed surrounds through specific procedures can “construct awareness on a new basis” (56). These houses consist of carefully built sequences that enact procedures such as “disperse-to-contrast” and “tentative constructing.” Each house tentatively works toward constructing a holding place on many scales of action at once and requires skilful coordination and emphasis on the importance of puzzling-out. Procedural architecture allows us to become aware of our sets of measure, particularly old habits of selecting particular modes of sensing, such as vision, to dominate when establishing measure. Procedural architecture requires a measuring of measures, a sorting and sifting done in place while we continue tentatively constructing.

There are seventeen *Critical Resemblance Houses* detailed in the Guggenheim catalogue (Govan 257-301). Each surround enacts a different set of tactics, primarily to enable perceptual body-wide learning and secondarily to supply a situation for bodily de-habitation, disorientation or unlearning. The names of the houses alone indicate the scope and complexity of the tasks Arakawa and Gins have identified: *Infancy House*, *Twin House*, *Cleaving Wave House*, *Iteration House*, *Modular Labyrinth House*, *Gravitational Ethics House*, and so on. Here I will only discuss the *Ubiquitous Site House* since it is one of the initial houses conceived by Arakawa and Gins and because it provides the site of the walk-through dialogue in their recent book. The *Ubiquitous Site House* deals directly with the complexity of landing sites when determining how to realize “Architecture as Hypothesis” (23). By introducing all the sites of the house through which landing sites make available all scales of action, a person becomes able to enact different procedures by exploring reciprocal interactions that are literally giving and taking place.

The shape of the *Ubiquitous Site House* seems to prohibit entry such that one must insert oneself into a pliant structure. Room size is proportional to the energy expended. The room moves to meet the organism's movement, and every feature of the house is within touching distance. Although observing and learning are the first and primary concerns, the *Ubiquitous Site House* immediately presents the visitors with the possibility of reconfiguration and with some sensation of what that process (transformative possibility) might feel like. In *Architectural Body*, Arakawa and Gins talk with two guests as they all describe the house while walking through it (23-38). The dialogue makes the tempo of perceptual learning audible. In the same breath the visitors give voice to their disorientation while the perceptions they narrate become the dispersal of their own "landing." This is, however, an imaging landing-site exercise because the *Ubiquitous Site House* has not yet been built. It indicates how we can already start learning about our own tactics of learning by landing on/within the perceptions to which the interlocutors give voice, dimensionalizing them, and trying them out in body-wide configurations. The important moment for observation and learning comes when the body is fully engaged in all landings. The fact that all landing sites become the sites of the house makes the house a "pretext for action," and recognizing it as such speeds the process. As poet Charles Stein says, "the thing that excites the narrative hasn't happened yet" (6). The same applies to architectural surrounds which "stand as shaping molds for the *What happens next?* of life" (43). Stuart Kauffman refers to this as the "adjacent possible," suggesting that we "gate our rate of discovery" in the same manner as the biosphere: "There are many molecular species that are one reaction away from the current actual in the chemically possible adjacent to our biosphere" (22). Ubiquity is the power to compose the world and be in contact with it. The *Ubiquitous Site House* allows a person to become aware of him/herself as an architectural body in contact with all that can take shape and happen next.

A ubiquitous site, a site that is everywhere, is a concept developed by Arakawa and Gins in order to emphasize investigations within a world that is not given, nor infinite or private, but one that is contingent and constantly within reach. There are not two worlds—the world that is already formed and the world we privately perceive—nor do we simply create the world through our perception. The "ubiquity" to which Arakawa and Gins refer is not a given universal "everywhereness;" it is comprised of the literal and contiguous landing sites of our immediate vicinity. In this case ubiquity is not an abstract principle for which a person supplies examples. Instead, it emerges through a "tentative constructing toward a holding in place" (23-38). Our experience of events is often rushed or is decided upon too quickly by using a template which does not allow the tentative aspect of landing sites to hold open the "adjacent possible." Ubiquity for Arakawa and Gins is "an evenly distributed agent, dropping the centralising habit that members of our species have had for such a terribly long time" (34). This ubiquitous distribution sets up conditions of emergence, which become the focus of deliberate bodily and architectural practices—the architectural body. The world that emerges is co-evolving as a result of selective interactions, which now include the deliberate actions of "organisms-that-person."

The evolution of evolution

In the middle of her argument against Descartes' "thinking substance," Maxine Sheets-Johnstone, in an effort to reassert the Darwinian body, cannot help but parenthetically insert a historical commentary:

To start with the Darwinian body also follows the hypothesised path of the evolution of evolution. Where the latter is itself understood as a process that evolves, the present-day world is conceived as being at a particular stage [metacultural] in the biohistorical process. Within this perspective the Darwinian body, originally a product at the stage of natural selection, is viewed not as displaced in subsequent evolutionary stages, but as having undergone transformation at the hands of further selective mechanisms, namely cultural and metacultural selection. (15)

Thus, in her essay "Darwinian Bodies," she argues that Darwin was not just interested in the formal traits of animals but in the whole living creature, because it is the life of the animal that contributes to evolution where cognition, action, and environment are inseparable. Darwin believed that the division of living creatures into "mental" and "physical" generates the "partial beings" from which we have suffered the fallout (12-13).

Arakawa and Gins have understood the shift in evolutionary process and see the opportunity to advance this fact of life into a way of living. The architectural body would be an expression of the metacultural shift to which Sheets-Johnstone refers. Arakawa and Gins have conceived of a practice (procedural architecture), an operation or mode of engagement (coordinology), and a state of configuration (the architectural body)—each of which addresses the problem of how persons connect to their community and species. The implication of their project is that the organism represents the species only way through (not out and away, but in and through) the world. This moment in time coincides with punctuated development in the evolution of evolution and is the human species' opportunity to make the most of being left to its own devices. Our ability to interact with the organization of our own organism is not an anomaly but reflects the direction of development for human capacity. The interaction and production of feedback loops occurs on every scale. If we accept that manipulations of background invariants through art and architecture change the structure of the environment, then we must also consider that our agency, through perception and action, can reconfigure the structure of even the largest scales of human construction—time and history.

The human organism has an uncanny ability too circumvent, ignore, inflect, and reconfigure the rules of its own structure, systems, commitments, and projected purpose. As organisms, we are able to participate in the selection of rate and type of change. The transformation of evolution means that there is no more secret agency, no need for the mind to break into the body, no need for the organism to make the person stand in line, answer questions and declare the contents of all its baggage. Coordinology brings everything out in the open and notes how it all lands. No more mythologizing, no more poetic description, or mysterious processes. There is only attention to landing sites and learning from every act of coordinology.

The work of Arakawa and Gins represents a way to deliberately interact with perception and action by coordinating observation, analysis, critique, and the production of experience. In other words, coordinology

supports the organism's ongoing "hunt for clarity" by choosing the stimuli in the physical world to which it will be most sensitive (Gibson 271). Arakawa and Gins insist that "rearrangements of the world should be able to cause the value of the world to become apparent right here in the midst of things" (xiv). Arakawa and Gins's coordinology is what philosopher and innovative therapist Eugene Gendlin calls first-person science: "a new science of subjective experiences interconnected to third-person science by virtue of investigative approaches akin to ecology and the study of complex processes" (ix). The convergence of cognitive science and arts research (often called creative research to characterize the trans-disciplinary nature) provides one approach to the interaction of the imagined and the actual.

The challenge of coordinology is many-fold. The organism-person-surround is the complex system which is comprised of the events and things *plus* the measure continuously performed upon them. Together, events + things + measure = landing sites which form the minutiae, figures, and environments of the various scales of action. Coordinology is the conscious and deliberate interaction with the landing sites of our ongoing human development, although Arakawa and Gins suggest that we are not even close to the architectural body because we do not seriously consider our current "crisis ethics" and the severe impediments that our historically constructed surrounds have placed upon us. Eventually, those in the early development of the practice of coordinology toward an architectural body will encounter a range of immediate questions: How can we optimize the benefits and multimodal consequences that landing sites and landing-site configurations provide? When we re-enter the continuous feedback loops of the organism-person-surround to interact with the type and rate of change, how do we become wary of the potential pitfalls of reassembly and the challenges of intrapersonal, interpersonal, and communal ethics in order to keep them from being co-opted, hijacked, or simply habituated? Arakawa and Gins have anticipated these questions by devising a process, coordinology, which aims to connect every site to every other site and to maintain, at every step, an ethical process of engagement. The most important difference between a general acquisition of knowledge and the practice of coordinology is having a stated goal from the outset and keeping it operable. Arakawa and Gins propose that human development is best served by the goals of sited awareness, the architectural body and reversible destiny. The long-term answer to complex questions of practice depends not upon a plan or explanation but on a process that takes the consequences of our everyday findings seriously and works from there.

Jondi KEANE¹
Griffith University, Australia

¹ American born arts practitioner and critical thinker, Jondi Keane has lived and worked in the North East United States, UK, Switzerland, and Australia. In 1992, he was a founding member of the interdisciplinary, collaborative performance group, Co M-S-K. He is currently a Lecturer in Cross-arts Practice and Convenor of Contemporary Arts at Griffith University in Australia.

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