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Who cooks from scratch and how do they prepare food?

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Abstract

Purpose – There is increasing interest in the domestic preparation of food and with the postulated health benefits of “cooking from scratch”. The purpose of this paper is to examine the demographic and food preparation associations of this term in order to examine its operational value.

Design/methodology/approach – A national online survey was conducted during 2012 in Australia among 1,023 domestic food providers, half of whom were men. Questions were asked about cooking from scratch, demographic characteristics, food preparation practices and interest in learning about cooking.

Findings – Three quarters of the sample reported they often or always “cooked from scratch” (CFS). More women than men always CFS; fewer 18-29 year olds did so often or always but more of the over 50s always did so; fewer single people CFS than cohabiting people. No statistically significant ethnic, educational background or household income differences were found. High levels of cooking from scratch were associated with interest in learning more about cooking, greater use of most cooking techniques (except microwaves), meat and legume preparation techniques, and the use of broader ranges of herbs, spice, liquids/ sauces, other ingredients and cooking utensils.

Research limitations/implications – In future work a numerical description of the frequency of cooking from scratch should be considered along with a wider range of response options. The data were derived from an online panel from which men were oversampled. Caution is required in comparisons between men and women respondents. The cross-sectional nature of the sample prevents any causal attributions from being drawn from the observed relationships. Further replication of the findings, especially the lack of association with educational background should be conducted.

Originality/value – This is the first study to examine the associations of demographic characteristics and cooking practices with cooking from scratch. The findings suggest that cooking from scratch is common among Australian family food providers and signifies interest in learning about cooking and involvement in a wide range of cooking techniques.

Keywords Australia, Survey, Consumer, Cooking

Paper type Research paper

Introduction

There is mounting concern about the high levels of consumption of highly processed foods and the low consumption of fresh foods like fruit and vegetables (e.g. Australian Institute of Health and Welfare, 2006; Krebs-Smith et al., 2010; Rangan et al., 2007) and their likely influence over the prevalence of metabolic disease in the population (Moodie et al., 2013; Lassale et al., 2013). The public health responses to this situation have been piecemeal (Stuckler and Nestle, 2012) varying from industry promises to reform to calls for its regulation (Brownell, 2012).

Part of the answer may be to upskill consumers so that they find it easier to select and prepare fresh, healthier foods. A recent editorial in the *New England Journal Medicine* called for a return to home economics education (Lichtenstein and Ludwig, 2010). There is increasing evidence to suggest that cooking skills are associated with health benefits (Brown and Hermann, 2005; Engler-Stringer, 2010; Foley et al., 2011; Woodruff and Hanning, 2009). Several interventions have been conducted to communicate cooking skills to improve the health of participants (e.g. Quinn et al., 2003; Brown and Hermann, 2005; Beets et al., 2007; Clifford et al., 2009; Bukhari et al., 2011; Fisher et al., 2011; Gatenby et al., 2011). Indeed, in the UK, cooking lessons are now recommended as part of the school curriculum (Department for Education, 2013).

However, little is known of the ways members of the general community prepare foods. Some early work in the UK examined the geographic distributions of cooking practices and cuisines (Allen, 1968; Bell and Valentine, 1997) but interest in cooking practices has with some exceptions (e.g. Caraher et al., 1999) been quiescent until the last five years or so. Recently in Australia two surveys were conducted which examined the ways household meal providers prepare the evening meal (Meat & Livestock Australia, 2009) and their patterns of evening meal preparation during the week (Meat & Livestock Australia, 2011). Both reports found that most family meal preparers have strong interests in cooking though they did not examine in detail the types of skills which are involved in domestic food preparation. Therefore, we decided to conduct another survey which was designed to examine a wider range of skill-related areas (see Methods below).

One important type of cooking which may be relevant to the dietary issues which underlie the metabolic disease epidemic is “cooking from scratch” (or scratch cooking) which refers to the use of “raw” or “fresh” ingredients, rather than processed foods in meal preparation or “preparing food using basic ingredients rather than buying meals that have already been prepared” (Macmillan Dictionary www.macmillandictionary.com/open-dictionary/entries/scratch-cooking.htm). People who “cook from scratch” may be more likely to consume healthier foods which contain lesser amounts of salt, saturated fats, sugar and more fruit, vegetables and whole grain foods (as recommended by various sets of dietary guidelines, e.g. the Australian Dietary Guidelines NHMRC 2013). However, the prevalence of “cooking from scratch” is unknown, nor is its association with cooking practices.

Therefore our aim in this paper is to explore the distribution of people who report that they “cook from scratch” across social demographic strata and to examine the relationships of “cooking from scratch” with a range of cooking practices and interests. Our basic hypothesis is that people who cook from scratch will come from more privileged social economic strata since they may have more time and financial resources to do so (Australian Bureau of Statistics, 2012), and, that they will use more raw ingredients and cooking techniques than those who cook from scratch less often.

Methods

Sampling and procedure

An online nationwide survey of 1,023 Australian meal preparers was conducted by Clever Stuff Pty Ltd in May 2012 from an online survey panel. The sample was chosen to be representative of gender and age groups, according to their proportions in the Australian population. Clever Stuff used a quota sample drawn from an online database membership which offers points rewards for survey participants.

Ethics permission for the survey was granted by the Faculty of Health Human Ethics Advisory Group, Deakin University (HEAG H25, 2012).

The questionnaire

The survey questionnaire was divided into five broad sections related to current cooking practices, the preparation of various types of evening meals; the use of ingredients and utensils; food preparers' interest in learning more about evening meal preparation, and, background information about the age, gender and educational background of the respondents. Potential respondents were screened by the question: "Are you the main or joint meal preparer in the household?" Those answering "No" were excluded from the survey. Findings from the survey have been published elsewhere (Worsley et al., 2014; Wang and Worsley, 2014a, b).

In this paper we focus on the relationships between one closed answer question: Do you cook from scratch? and responses to a number of demographic background questions. Four responses were provided: never; sometimes; often; and always. After inspection of frequency distributions, the never and sometimes categories were merged into a single category (named in Tables I and II as "sometimes"), yielding a three-point ordinal Cooking from scratch variable.

The demographic information included details of: gender: male (1), female (2); age band: 18-29 (1), 30-39 (2), 40-49 (3) 50+ (4), married/cohabiting (1), single (or divorced,

widowed) (2); ethnicity – country of birth: Australia/New Zealand (1), North Europe and North America (including UK and Ireland) (2), Southern Europe (and Mediterranean and Latin American countries) (3), Asia (4); educational background: left school at or before Year 12 (1), technical and further education (TAFE) (2), university education (3); household composition: single with no children (1), married with no children (2), single with children (3), married with children (4); employment status: employed full time (1), employed part time (2), other (e.g. pensioner, student) (3); pre-tax household income: \$0-\$29,999 (1), \$30,000-\$69,999 (2), \$70,000-\$129,000 (3), \$130,000-159,999 (4),

W \$160,000 (5); location: city (1), rural/regional (2).

In addition, this paper examines the activities associated with different levels of Cooking from scratch with a variety of other items included in the questionnaire. These included questions about the use of specific cooking techniques (e.g. stir fry), the addition of herbs (10), spices (11), ingredients (20) and liquids/sauces (13) during the preparation of evening meals (e.g. garlic), the frequency of use of beef, lamb, chicken, fish or legumes as the centre of evening meals ("meal foci"), and the frequency of use of 23 cooking utensils. The rating scales for the frequency items were: never (1), sometimes (2), often (3). Other questions included: interest in learning to cook eight meals (respondents select those they were interested in), learning about eight cooking techniques

(respondents answered Yes or No), and the preferred ways to learn about cooking (nine items, Yes or No responses).

Data analysis

Comparisons were made between the three Cooking from scratch groups across the background variables (above) using the SPSS (SPSS 2013, version 21) Crosstabs program. (Table I). Crosstabs was also used to compare the frequencies of the use of cooking techniques, meal foci, individual herbs, spices, liquids/sauces, ingredients, utensils and interest in learning about cooking items across the three levels of Cooking from scratch (Table II). Because of the large number of comparisons, the level of statistical significance was set at $p < 0.01$, and only statistically significant differences are shown in Table II.

	Sometimes (%) (n = 303)	Often (%) (n = 469)	Always (%) (n = 251)	Total (%) (n = 1,023)	χ^2	p-value
Do you cook from scratch (% yes)	28	46	25			
<i>Gender (n = 1,023)</i>						
Female	46	51	65	53	21.743	0.0001
Male	54	49	35	47		
<i>Age groups (n = 1,023)</i>						
18-29 years	38	30	21	30	24.585	0.0001
30-39 years	23	23	25	23		
40-49 years	21	22	21	21		
50+ years	19	26	34	26		
<i>Marital status? (n = 1,009)</i>						
Single/never married	49	36	33	39	19.097	0.0001
Married/living together	51	64	67	61		
<i>Household composition (n = 893)</i>						
Single with no children	39	27	26	30	21.838	0.001
Married with no children	26	30	31	29		
Single with children	23	22	26	23		
Married with children	12	21	17	18		
<i>Ethnic identity (n = 924)</i>						
Australian/NZ	82	85	80	83	6.910	0.329
North Europe and American	8	5	6	6		
South Europe and Mediterranean	2	2	5	3		
Asia	9	7	10	8		
<i>Highest level of education (n = 923)</i>						
University	38	35	41	37	3.296	0.510
TAFE	28	31	27	29		
Left school at or below Year 12	34	35	32	34		
<i>Reported household income (\$Aus, n = 874)</i>						
\$0-\$29,999	23	17	19	19	9.449	0.306
\$30,000-\$69,999	33	35	38	35		
\$70,000-\$129,000	37	37	33	36		
\$130,000-159,999	3	5	3	4		
> \$160,000	4	7	6	6		
<i>Which of the following best describes your occupational status? (n = 1,023)</i>						
Employed full time	46	42	30	40	19.059	0.001
Employed part time	22	26	26	25		
Other	32	32	45	35		
<i>City rural location (n = 1,023)</i>						
City	66	60	54	60	8.655	0.013
Rural/regional	34	41	46	40		

Note: There are rounding errors so some columns add to more than 100 per cent

Table I.
Demographic associations with cooking from scratch (percentage)

The frequencies of use of the items in each set if items for herbs, spices, liquids/ sauces, ingredients and utensils were summed to yield internally reliable scores (Table III). These were analysed via two way ANOVA (Gender by Cooking from scratch) with age in years as covariate.

	Sometimes (%) (n = 303)	Often (%) (n = 469)	Always (%) (n = 251)	Total (%) (n = 1,023)	χ^2	p-value
<i>Learning about cooking</i>						
Want to learn more about cooking	59.4	74.0	78.5	70.8	28.488	0.000
Like to receive information about preparing meals quickly after work	81.7	75.2	68.5		15.429	0.004
Like to learn how to cook the following – casserole	65.6	64.3	51.3	61.0	10.971	0.004
Like to learn how to cook a roast dinner	67.8	55.6	48.2	56.6	14.921	0.001
<i>Meal preparation</i>						
Make the meal from memory (selected)	48.8	58.4	61	56.2	9.907	0.007
Adapt the recipe according to the ingredients you have available	29.0	45.0	48.6	41.2	26.956	0.000
<i>Use of the following cooking techniques² (Often)</i>						
Stir fry	28.7	41.8	46.2	39.0	22.168	0.000
Microwave	38.9	27.3	25.1	30.2	31.979	0.000
Grill meat	34.3	43.9	49.8	42.5	26.926	0.000
Vegetables (roast)	31.7	49.3	55	45.5	48.832	0.000
Sauté	9.6	16.4	31.1	18.0	65.176	0.000
Bake	21.5	36.2	46.6	34.4	49.593	0.000
Braise	7.3	10.2	25.5	13.1	69.482	0.000
Stew or casserole	18.8	29.2	42.2	29.3	52.991	0.000
Slow cooker	15.8	15.4	23.5	17.5	16.217	0.003
Poach	5.3	6.6	12.0	7.5	18.338	0.001
Steam	27.4	32.2	49.0	34.9	38.580	0.000
BBQ	22.4	33.7	31.5	29.8	17.029	0.002
Often cook beef for dinner	21.1	35.2	33.5	30.6	21.313	0.000
Often cook beef casserole	5.1	11.7	15.9	10.9	31.183	0.000
<i>Frequency of basing a meal around legumes²</i>						
5 or more nights a week	3.6	2.8	11.2	5.1	36.128	0.000
3-4 nights a week	10.6	8.5	8.8	9.2		
1-2 nights a week	18.8	19.2	18.7	19		
Less than once a week	29.7	39.9	30.3	34.5		
Never	37.3	29.6	31.1	32.3		
<i>Frequency of basing a meal around lamb</i>						
5 or more nights per weeknights a week	12.0	2.9	4.0	3.0	24.720	0.006
3-4 nights a week	9.2	9.0	8.4	8.9		
1-2 nights a week	34.7	43.7	42.6	40.8		
Less than once a week	35.0	33.7	31.9	33.6		
Never	19.1	10.7	13.1	13.8		

Table II.
Summary of the statistically significant differences between the three cooking from scratch groups on a range of cooking practice and interest items

Results

Demographic characteristics of the sample

The demographic characteristics of the sample are shown in Table I. As expected from the sampling design, approximately half the respondents were female and the five age bands were equally distributed with a small bias towards 18-29 year olds. Almost two-thirds (61 per cent) of the respondents were married or cohabiting. The majority of respondents had no children (single 30 per cent, married/cohabiting 29 per cent), 23 per cent reported being single with children, and 18 per cent were married/cohabiting with children. The majority (82 per cent) were born in Australia or New Zealand; and over one-third were University educated (37 per cent), 29 per cent had technical or trade (TAFE) qualifications; 40 per cent were employed full time and 25 per cent part time. In total, 71 per cent had pre-tax household incomes between \$A30,000 and \$A130,000p.a. Approximately 40 per cent lived outside the main capital cities in rural and regional areas.

Cooking methods for meats and fish	Sometimes (%) (n = 303)	Often (%) (n = 469)	Always (%) (n = 251)	Total (%) (n = 1,023)	χ^2	p-value
Beef-braising	24.1	30.9	43.0	31.9	23.031	0.000
Beef-stew	46.9	61.4	62.2	57.3	19.132	0.000
Beef-casserole	53.8	67.8	65.3	63.0	16.253	0.000
Lamb-roast	50.5	67.6	71.7	63.5	32.815	0.000
Lamb-casserole	26.4	36.5	39.4	34.2	12.314	0.002
Lamb-none of these	21.8	13.2	11.2	15.2	14.756	0.001
Pork-roast	40.3	51.8	55.8	49.4	15.293	0.000
Chicken-stir-fry	63.7	75.5	70.9	70.9	12.381	0.002
Chicken-roast	48.5	59.3	64.9	57.5	16.298	0.000
Chicken-grill	34.3	45.2	37.8	40.2	9.814	0.007
Chicken-braising	10.2	11.7	18.7	13.0	9.999	0.007
Chicken-stew	17.2	22.4	28.7	22.4	10.492	0.005
Chicken-casserole	28.4	41.4	50.2	39.7	28.315	0.000
Fish-grill	36.3	50.5	55.0	47.4	22.594	0.000
<i>Herbs, spices or sauces/liquids added to meats and fish</i>						
Beef-oregano	49.8	61.2	65.8	59.4	12.623	0.002
Beef-chillies	53.2	62.9	68.6	61.9	9.823	0.007
Beef-none of these herbs	17.8	15.3	8.4	14.3	9.927	0.007
Beef-oyster sauce	33.6	42.5	50.6	42.5	9.528	0.009
Chicken-chinese five spice	42.7	55.0	64.4	54.8	11.380	0.000
Chicken-none of these spices	15.8	11.0	7.0	11.4	10.158	0.006
Chicken-oregano	30.1	34	44.7	35.8	11.242	0.004
Chicken-sage	23.5	35.1	38.8	33.1	9.151	0.010
Chicken-none of these herbs	21.9	18.7	11.7	17.8	9.294	0.010

(continued)

Table III.
Statistically different use of cooking methods and herbs, spices or sauces/liquids added to meats and fish, by levels of cooking from scratch

Table III.

Cooking methods for meats and fish	Sometimes (%) (n = 303)	Often (%) (n = 469)	Always (%) (n = 251)	Total (%) (n = 1,023)	χ^2	p-value
Fish-parsley	36.1	44.9	54.1	44.9	14,579	0.001
Fish-coriander	22.6	35.2	37.6	32.6	11,778	0.003
Fish-none of these	41.1	29.8	17.2	29.8	34,766	0.000
Fish-pepper	41.3	54.0	63.8	53.0	25,115	0.000
Fish-none of these spices	38.1	27.9	19.8	28.8	21,678	0.000
Fish-stock	12.9	24.2	30.6	22.8	21,799	0.000
Use fish sauce often	8.6	11.7	21.1	13.1	33,334	0.000
Chicken-wine	38.5	50.9	58.8	49.9	13,906	0.001
Lamb-cardamom	32.2	18	31.7	25.5	9,841	0.007
Lamb-curry	29.9	39.3	46.0	38.7	11,420	0.003
Lamb-none of these	35.6	23.1	16.0	24.9	28,047	0.000
Lamb-oil	48.9	59.6	66.2	58.1	16,601	0.000
Lamb-water	32.7	44.2	49.4	42.2	16,015	0.000
Lamb-stock	35.8	47	51.7	45.2	13,033	0.001
Lamb-none of these liquids	27.2	19.5	16.2	21.0	10,921	0.004

Three quarters of the sample of meal preparers reported they often or always “cooked from scratch” (CFS) (Table I). Further inspection of Table I shows the following statistically significant differences: more women than men always CFS; fewer 18-29 year olds CFS often or always but more of the over 50s always did so; fewer single people CFS than cohabiting people; more single people with no children CFS sometimes relative to the other household groups. There were no statistically significant overall ethnic differences and no educational background or household income differences in Cooking from scratch though more people in rural and regional areas reported doing so always.

Interest in learning about cooking

More of the respondents who CFS often or always were interested in learning about cooking than those who sometimes CFS (Table II). However, there was a stepwise decrease in interest in learning how to cook casseroles, roast dinners and preparing meals quickly after work from those who CFS “sometimes” through to those who “always” did so (Table II).

Use of cooking techniques

Apart from the use of microwaves which was highest in the “sometimes” CFS group, the use of cooking techniques was higher in the “often” and “always” CFS groups. For several techniques the increase appeared to be stepwise, more of the ‘always’ group using them than the “often” group, more of whom used them than the “sometimes” group (Table II). The main exceptions to this stepwise trend were slow cooking and poaching – the “sometimes” and “often” groups’ use being equivalent and less than that of the “always” group.

Use of meats and legumes

Frequent use (“often”) of beef and beef casserole for dinner was highest among the “often” and “always” CFS groups (Table II). Basing a meal around legumes was most frequent (W 5 nights a week) in the always CFS group and lowest in the “sometimes” CFS groups. In contrast basing a meal around lamb was most frequent as well as most absent in the “sometimes” CFS group (Table II).

Cooking methods for meats

Generally, those who CFS often or always tended to use meat cooking techniques more often than the “sometimes” group (Table III). Minor exceptions to these trends were for lamb where the “sometimes” group indicated they used none of the listed techniques, and the chicken grilling which was done by more of the “often” CFS group than the others, and the braising of chicken which was more frequent among the “always” CFS group than in the other groups (Table III).

Addition of herbs, spices and liquids/sauces to meat and fish

The addition of these substances to meat and fish tended to be more prevalent among the “often” and “always” groups (Table III). Moreover, more of those who CFS “sometimes” reported that they did not add any of the listed spices, herbs or liquids/ sauces to the fish and meat they cooked (Table III).

Use of herbs, spice, liquids/ sauces, other ingredients and cooking utensils

Inspection of Table IV shows that the general use of these flavouring agents and utensils was greatest in the “always” and “often” groups than in the “sometimes” CFS group (Table IV).

	Utensil use Mean (SD)	Herb use Mean (SD)	Spice use Mean (SD)	Sauce use Mean (SD)	Ingredient use Mean (SD)
Table IV. Summary of variance analyses of the herbs, spices, liquids/sauces, ingredients and utensil use scores of the respondents, by “cooking from scratch”					
Cronbach’s α	0.893	0.883	0.879	0.800	0.873
<i>Cooking from scratch levels</i>					
Sometimes	46.49 (8.2)	17.25 (4.5)	18.09 (4.9)	24.25 (4.7)	26.81 (6.2)
Often	50.23 (7.7)	19.30 (4.3)	20.33 (4.5)	25.53 (4.1)	28.34 (5.6)
Always	52.53 (7.8)	20.31 (4.6)	21.81 (5.1)	26.16 (4.8)	30.33 (6.4)
<i>F (df)</i>	42.530	34.903	43.489	13.671	23.520
<i>p-value</i>	0.0001	0.0001	0.0001	0.0001	0.0001

Discussion

The findings suggest that substantial proportions of Australian food preparers often or always cook from scratch (Table I). As suggested in the Introduction, these reports are socially structured, more women: people over 50, married/cohabiting people (especially those with children), reporting they often or always CFS. However, the lack of significant associations with education suggests that access to educational and associated economic resources may not be an influential factor. Instead the findings are consistent with the greater involvement of women in food preparation (e.g. Caraher et al., 1999; Lang et al., 1999) and their greater knowledge of food issues (Wardle et al., 2004) as well as with the influence of cohabitation on food choices (Craig and Truswell, 1988; Worsley, 1988). Preparation of food for a spouse or partner/children seems to increase the likelihood of cooking from scratch.

The lack of any strong associations with educational background (or household income) is consistent with other findings from this survey which show that interest in learning to cook and the use of herbs, spices and utensils was also unrelated to educational background (Worsley et al., 2014; Wang and Worsley, 2014a, b). This suggests that cooking may present similar challenges, for example in terms of timing and partner/children’s evaluation of the meal, along the socio-economic gradient.

The meaning or implications of the term “cooking from scratch” are mainly as might be expected from the dictionary definition of the term. Tables II-IV show that those who often or always CFS tended to use difference cooking techniques more often, were more likely to centre their evening meals on lamb or legumes, and were more likely to use a variety of spices, herbs, liquids/sauces and other ingredients to flavour their meals. They were also more interested in learning about cooking in general though not about specific cooking techniques, compared to those who cooked “sometimes”. The exceptions to these trends, seen in the greater use of microwave cookers, and the lesser use of herbs, spices and other flavouring agents among those who “sometimes” CFS, suggests a stronger convenience orientation among these respondents.

In summary, cooking from scratch appears to be part of a set of social practices involving greater interest in cooking, broader use of cooking techniques, herbs, spices and sauces, and greater use of meats and legumes. It is unclear from these findings whether this “non-convenience” approach is restricted to main meals only or whether it extends to other eating occasions during the day or

even whether to applies to all the days of the week. These practices appear to be in marked contrast to the high prevalence of convenience products marketed in present day Australia and other countries (e.g. Moodie et al., 2013). Although the more frequent CFS (always) among respondents in rural and regional areas, where access to convenience products may be less than in metropolitan areas, suggests that access is an important component, other factors may have a role here. These may include the commensality, mastery and enjoyment associated with cooking and meal consumption as well as the expression of the values that may be implicit in these practices such as security, sociability, authenticity and benevolence. Further research is needed to examine the validity and contexts of these findings and their cultural associations.

Limitations and future research directions

This study has several limitations which require caution in the interpretation of the results. First the Cooking from scratch variable was a simple three-point ordinal scale which employed non-numeric natural language terms. The findings suggest that this item was, nevertheless, sufficient to demonstrate strong associations with some of the demographic variables and with expected meal preparation variables. However, in further work a numerical description of the frequency of cooking from scratch should be considered along with a wider range of response options. Similarly, although a large number of cooking techniques and flavouring agents were listed, other aspects of food preparation might be examined in future work such as descriptions of common meals prepared for the evening meal as well the preparation and use of other meals (e.g. lunch and breakfast, snacks).

The sample was made up of quotas from volunteers from the online data base. That is, it was a cross-sectional, non-probability sample. Furthermore, men were over sampled so caution is required in comparisons between men and women respondents: the number of male food preparers is likely to be greater in this sample than among the general Australian population. However, the sample provides sufficient heterogeneity to test the demographic and food preparation hypotheses. Further replication of the findings, especially the lack of association with educational background should be conducted on other samples, preferably on random probability samples, is required to confirm these findings. Other socio-economic variables might be included in future to test the hypothesis that cooking practices are unrelated to socio-economic status. The cross-sectional nature of the sample prevents and causal attributions from being drawn from the observed relationships. Ideally, cohort studies should be conducted to assess the influence of socio-demographic variables on cooking practices.

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