

Research Report

# Attitudes towards large numbers of choices in the food domain: A cross-cultural study of five countries in Europe and the USA

Paul Rozin <sup>a,\*</sup>, Claude Fischler <sup>b</sup>, Christy Shields <sup>c</sup>, Estelle Masson <sup>d</sup>

<sup>a</sup> Department of Psychology, University of Pennsylvania, 3720 Walnut Street, Philadelphia, PA 19104-6241, USA

<sup>b</sup> C.N.R.S., Ecole des Hautes Etudes en Sciences Sociales, Paris, France

<sup>c</sup> CETSAAH, Ecole des Hautes Etudes en Sciences Sociales, Paris, France

<sup>d</sup> Université de Bretagne Occidentale, Brest, France

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## Abstract

Telephone interviews of 6000 representative adults from France, Germany, Italy, Switzerland, the UK, and the USA, included two items on attitudes to variety. One had to do with whether the respondent preferred a choice of 10 versus 50 ice cream flavors. Ten choices were preferred by a majority of respondents from each country except the United States. A second item asked whether one expected a small or large menu choice in an upscale restaurant. A majority in all countries expected the small number of choices, but this expectation was lowest in the UK and USA. High variety expectations and preferences were weakly positively correlated ( $r=0.19$ ). There was no substantial relation between a variety of demographic variables and variety preferences or expectations, except that older people were less inclined to prefer the high (50) variety in ice cream choices ( $r=0.28$ ). The results suggest that the US, and the UK to some extent, focus on providing choices that cater to individual differences in preferences, whereas the continental European countries are more attached to communal eating values.

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Variety in food choice is part of the formula for success in generalist animals. Variety makes it more likely that the diet will include minimal levels of essential nutrients, and as well, less likely that high levels of any specific toxin will be ingested. However, variety also increases the probability that some toxins will be ingested. Appropriately, generalist organisms, including rats and humans, have been shown to have both an interest in (neophilia) and fear of (neophobia) new foods.

Variety in the diet, especially of enculturated humans, has become relevant to the study of food intake and choice in three other ways. First, avoidance of new foods (neophobia) can be problematic, especially for young children in the range of 2–5 years old, for whom it is very frequently reported as a concern to pediatricians by parents (Bakwin & Bakwin, 1972). As well, there are a number of instances in which nutritionally desirable new foods could not be introduced into particular cultures because of neophobia. Second, it has been repeatedly demonstrated that variety in food choices enhances food intake (sensory specific satiety, Rolls, Hetherington, Burley, &

van Duijvenvoorde, 1986), and hence may contribute to obesity. Third, dating from the late 20th century, in the developed world, an enormous variety of foods has become readily available. This variety includes a wide range of foods with only subtle differences, or enormous numbers of alternative forms and flavors of yogurt, ice cream, bread, coffee, chocolate, breakfast cereals, apples, etc. At this level, which we could call ‘micro-variety,’ product differences are small in taste and in nutritive value, yet the variety forces individuals to make choices. Recent work suggests that choices among very similar alternatives are often aversive to people, and may cause them to withdraw from making a choice (Inyegar & Lepper, 2000; Schwartz, 2004). It is striking in this regard that the majority of product types in a typical American supermarket sell less than one case a week (Kahn & McAllister, 1997; Kahn and Wansink, 2004).

Previous research in the psychology of food variety has employed scales and focused on measuring individual differences, within culture, for neophobia (Pliner & Hobden, 1992), range of foods liked (Raudenbush, van den Klaauw, & Frank, 1995), variety seeking (Van Trijp & Steenkamp, 1992), or variation in menu selection from day-to-day (Rozin & Markwith, 1991). In general, this work has understandably been directed at ‘macro-variety,’ that is, choice of different dishes, different types of foods (e.g. different types of fruit or

\* Corresponding author.

E-mail address: rozin@psych.upenn.edu (P. Rozin).

meat). There has been minimal work or interest in ‘micro-variety’, an issue that is becoming more and more important in the food world that an individual is exposed to in the developed world in the last 50 or so years,

However, there are two recent studies on Americans looking at the consequences of microvariety for food choice or consumption in the food domain. Inyegar and Lepper (2000) show that increasing the number of choices of bottles of different flavors of jams in a supermarket reduces the likelihood of purchase, arguing for an inhibiting effect of high microvariety. On the other hand, Kahn and Wansink (2004) have shown that increasing microvarieties (flavors/colors) of jelly beans increases intake, so long as the increase is made salient. Of course, these two studies are not inconsistent, differing as they do along many dimensions. One difference of particular importance has to do with whether one is looking at decision to purchase or amount consumed.

We know of no prior work comparing cultures on attitudes to high levels of microvariety. Observations in super markets in a number of cultures suggest to us that there is a particularly high number of choices within product type (microvariety) in the United States. The supermarket habituated by one of us, in the United States, offers 150 different types of yogurt (counting size, flavor, brand, fat and sugar level as variables), and 100 different types of antacids. We expect that a larger variety of offerings in the United States (most strikingly in the microvariety domain) results from both socioeconomic and psychological factors. The dominance of food retailing by supermarkets allows for space to display more varieties, as does the profusion of variants available for many types of products. In the food domain, the absence of a dominant national American cuisine encourages a wider range of products, which would promote more macro-variety (e.g. availability of tofu, bean sprouts, a wide variety of chiles). We believe that Americans, more than the Western European countries, are wedded to a link between goodness and abundance or quantity. This perhaps relates to the size and agricultural productivity of the United States. Big portions are an important part of good eating more in the United States than in France (Rozin, Kabnick, Pete, Fischler & Shields, 2003). Among many people, perhaps more in Europe than in the United States, there may be a general belief in an inverse relation between quantity (in terms of both portion size and number of choices) and quality. Also, perhaps because of the great diversity of origin among Americans, and perhaps because of the predominant Protestant religion, there is a sense in the United States that food should be individualized to the tastes of each person. This would contrast with more collective food values in France and other European countries. For example, in modest American restaurants, a steak is offered with a choice of potatoes (mashed, baked, French fries, hash brown, salad) as opposed to the virtually required frites in France. The American restaurant table often includes salt, pepper, hot pepper, mustard, ketchup and other condiments, inviting the eater to season his or her food to taste. In France, one is more likely to eat the food as the chef has prepared it.

A large-scale study of attitudes to food across six Euro-American cultures allowed for inclusion of a few items directed to variety preference. These items form the basis for the analysis presented in this study.

## Method

A study comparing food attitudes in six countries was conducted under the auspices of observatoire CIDIL des Habitudes Alimentaires (OCHA), an organization in Paris associated with the the French dairy industry. The six countries were the USA, UK, France, Germany, Italy, and Switzerland. The study consisted of a three step program. In the first stage, exploratory focus groups were conducted in each of the six countries and four languages by the same team of facilitators. With the help of a group including researchers from the six countries led by Claude Fischler in Paris, information gathered in the focus groups was used to construct a largely open-ended questionnaire which was administered by telephone to a stratified sample consisting of approximately 180 people per country. This interview lasted about 45 min of phone time, and was administered by a professional polling organization. In light of analysis of this data set, a 15 min multiple choice questionnaire was constructed and administered again by telephone to representative samples in the six countries ( $n$  = about 900 for each European country and  $n$  = 1500 for the USA). Both the second and third phases included collection of a full range of socio-demographic variables, including gender, income, education, religion, occupation, household size, number of children in the household, size of town of residence. The focus group phase was conducted between June and December, 2000. The second phase between May and July of 2001, and the third phase in the spring of 2002. Note that the situation for Switzerland is different than for the other countries, in that the interviews were carried out in three different languages (French, German and Italian) unlike the single language for the other countries. An alternative analysis that we did not carry out would divide the participants in terms of native language, rather than country.

The results reported here come principally from two questions directed at variety in the third phase.

These were:

Imagine that you feel like eating ice cream and that you have the choice between two ice cream parlors.

One offers a choice of 50 flavors.

The other offers a selection of 10 flavors.

Assuming that there is no difference in price, which ice cream parlor would you choose?

1. The one that offers 50 flavors
2. The one that offers a selection of 10 flavors

Imagine that you have been invited to a top class restaurant. Which of the following do you expect to find on the menu:

Table 1  
Effect of country on choice preferences and expectations

	France	Germany	Italy	Switz	UK	US	Statistics
Ice cream % prefer 50 choices	32 (895)	33 (851)	39 (857)	28 (871)	44 (867)	56 (1450)	$X^2(5)=258.063$ , $F(5,5796)=53.960$
Menu size % expect many choices	19 (900)	22 (892)	29 (886)	18 (900)	40 (895)	36 (1494)	$X^2(5)=204.927$ , $F(5,5962)=42.400$

% Preferring or expecting many choices (*n*).

1. A large choice with numerous different dishes
2. A small number of suggestions from the chef

The demographic items that are not self-explanatory are as follows:

*Religiosity*: Are you religious?: (1) Very religious, (2) Somewhat religious, (3) A little religious, (4) Not at all religious.

*Town size*: What is the population of your town? (1) Less than 20,000 people, (2) From 20,000 to 100,000 people, (3) Over 100,000 people.

## Results

### Statistical issues

With an *n* varying between 5000 and 6000 for each item or pair of items, statistical significance is very easy to obtain in the face of very small differences. We have adopted the criterion of only reporting differences between groups that surpass the 0.001 level (two-tailed), or, for the case of correlations, only values of 0.07 or higher (which are significant at  $<0.001$ ). The variables of interest include ratio scaled items (age), ordinal scales (income, education, religiosity, agreement on a variety item), nominal category items (country of origin) and dichotomous items (sex, ice cream, menu size). In general, we employ the chi square statistic or ANOVA when comparing nominal items, particularly country, and use correlations or ANOVA when evaluating items on an ordinal or ratio scale.

### Relationships between the variety items

The two critical variety items tap different aspects of attitudes to variety. The ice cream item is about attitudes to large choices among highly similar items. The menu size item is about expectations about large versus small menu selections, in which the differences among items are dishes and combinations of dishes, entities that differ much more from item to item than flavors of ice cream. Both, of course, could be influenced by a similar set of cultural values. In fact, the two items show a modest but highly significant correlation ( $r[5758]=0.19$ ).

### Country effects

The major effect of interest in this study is illustrated in Table 1, which indicates the percent of individuals from each country who prefer or expect many choices. For ice cream,

the US is the only country in which a majority (56%) prefer 50 over 10 ice cream choices. The UK is next (44%), with Switzerland showing the lowest preference for high variety (28%), followed by France (32%) and Germany (33%). Both  $X^2$  and one way ANOVA show highly significant effects (Table 1); the multiple *R* for the ANOVA is 0.21. Scheffe tests indicate that the US preference is significantly higher than that of all other countries, the UK preference, next highest, is significantly higher than all but Italy, and Italy is significantly higher than Switzerland.

For menu-size, as with ice cream, the US and the UK are the outliers. In this case, a majority in all countries expect the smaller range of choices, but 40% of UK respondents and 36% of US respondents expect a larger number of choices, in comparison to only 18% of Swiss and 19% of French. The country effect is highly significant (see Table 1). The multiple *R* for the one way ANOVA is 0.18. By Scheffe tests, the UK expectation is larger than that of Switzerland, France, Germany and Italy, and the US expectation is larger than Switzerland, France and Germany. Italy is significantly higher than Switzerland and France.

### Demographic effects

All of the demographic variables except sex have at least ordinal properties, so we have calculated Pearson correlation coefficients between each of the variables (including sex) and the two choices on each of the variety questions. The results are presented in Table 2. For comparative purposes, we note that the correlation between education level and income in the total sample is 0.40.

The only substantial correlation is between age in years and ice cream preference ( $r[5776]=0.28$ ). Older subjects like less choice: the effect is monotonic across five age categories. Restricting ourselves to effects of  $r=0.07$  or higher, there are a few other modest (but highly significant) effects worthy of comment (Table 2). Females show a slightly lower tendency to

Table 2  
Correlations between demographic variables and ice cream and menu size items

Demographic variable	Ice cream	Menu size
Sex (1 = male, 2 = female)	0.07 (5801)	0.04 (5967)
Religiosity (four categories)	-0.05 (5770)	0.01 (5937)
Town size (three categories)	-0.10 (5682)	-0.03 (5841)
Education (four categories)	-0.10 (5635)	0.02 (5801)
Income (nine categories)	-0.07 (4890)	0.06 (5009)
Age (years)	0.28 (5776)	0.08 (5939)

Pearson correlation (*n*).

prefer choice in ice creams. Individuals with higher education and income, and from larger towns, prefer more choice in ice cream, and there is a modest increase in expectation of smaller menus with age.

#### *Age effects and country–age interactions*

The two biggest effects we report are for country and age. Given that there may be considerable differences among the countries in the lives of older people, we considered it worthwhile to look at any interactions between country and age. To accomplish this comparison, for the case of ice cream (where there is a big age effect), we performed a two way ANOVA, using Country and five age categories (15–24 years, 25–34, 35–49, 50–64,  $\geq 65$ ) as the independent variables. Both effects are of course highly significant, with a multiple  $R$  of 0.35 (for age categories,  $F[4,5,20,5772] = 118.647$ ; for country  $F[5,4,20,5772] = 38.019$ ). The interaction  $F = 2.250$  is very much smaller, but significant at  $p < 0.001$ . The modest interaction derives from the fact that while the relation is essentially monotonic in all countries, the two oldest groups in Switzerland show about the same level of preference, and the two youngest groups in the US show about the same level of preference.

#### **Discussion**

We have demonstrated substantial and significant effects of country on a measure of micro-variety (ice cream) preference, and one of choice expectations. There is also a substantial age effect on micro-variety, with this desire decreasing with increasing age. In general, the UK and US stand together, and apart from the four continental European countries, in showing higher preferences for and expectations of choice. For both of our measures, the majority of the variance remains unexplained. Existing measures of preference for variety or neophobia report substantial within culture differences, and these seem to be the principal sources of variance. Of course, the existing measures tap attitudes that are noticeably different from the two attitudes tapped in the present study.

The effects of demographics other than age are surprisingly small in this study, especially for the menu size item. For the ice cream (micro-variety) item, the older the person, the smaller the town, and the lower the level of education, the less attraction to large numbers of choices. Our results fit with our impression that Americans are particularly appreciative of choice at many levels, and that, as well, there is a substantial sense among Americans that foods should be modified to meet individual tastes; hence, the wider range of choices in American menus, including extensive options for matching side dishes with the main dish according to individual tastes. A lesser attraction to a large number of choices, being associated with older people, a lower level of education and smaller towns, suggests a more traditional type of food culture, with more ritualized meals, while an urban, younger and more upscale tendency towards personalized choices seem more typical of individualistic values. In general, our findings fit with

our previous results that suggest a greater interest in quality as opposed to quantity, in French as opposed to Americans (Rozin, Fischler, et al., 1999; Rozin, Kabnick, et al., 2003). Future work could be directed towards development of scales related to interest in micro- and macro-variety, and to examine cultural differences in the individual difference measures already available. It would also be useful to relate preferences for micro-varieties to the distinction between maximizers and optimizers (Schwartz et al., 2002), with the hypothesis that maximizers (individuals who desire an optimal experience at some cost in time and effort) would prefer more variety.

A relative preference for quality as opposed to quantity in the food domain in Continental Europeans as opposed British and Americans may contribute to the effects we report. One can ask about the degree to which this difference in attitudes exists, the degree to which it extends beyond the food domain, and the degree to which a believed inverse relation between quality and quantity is higher in the continental Europeans. It is also worth exploring the degree to which Protestant/individualistic values promote the interest in variety. In this regard, examination of Catholic–Protestant differences in attitudes to variety in countries that have substantial representations of both religions (e.g. Germany) would be of interest.

Considering the massive proliferation of micro- and macro-varieties and choices in the modern developed world, further work in this area would be justified, from the perspectives of both basic psychology and marketing.

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