

# Vegemite as a Marker of National Identity

VEGEMITE MAY BE THE BEST PREDICTOR of national identity of any food in the world. That is, if you eat Vegemite, you are almost certainly Australian. It has often been proposed that early food exposure affects adult food preferences, and that specific foods are markers of cultural identity. Here we report on the results of a study of Vegemite with regard to these broad claims. We examined early developmental and cultural influences that result in a preference for Vegemite over other foods and found that a taste for the spread strongly correlates with early exposure and to Australian birth and ancestry. These results suggest that Vegemite is one of the clearest markers of cultural identity that has yet been reported, and that early exposure is an important, though not necessary, condition for acquiring a taste for it.

Vegemite is used primarily as a breakfast food, spread thinly on bread or crackers like jam. It is also sold as a cheese additive. Savory rather than sweet, Vegemite contains 40 percent water, 13 percent carbohydrate, 31 percent protein, 5 to 6 percent yeast and minerals, and 8 percent salt. As Kay Richardson discusses above, Vegemite was developed in Australia in the 1920s and marketed as being high in B vitamins. It was also meant to provide an alternative to Marmite, a product that was, and still is, widely consumed in the United Kingdom.

The popularity of Vegemite is of particular interest for three reasons. First, it is a food product consumed almost solely within the borders of a single country, Australia. Specific foods are often described as markers of ethnic or national identity. Vegemite is almost universally consumed in Australia but is eaten nowhere else, except in New Zealand, where it is much less widely used and where it occupies a market share approximately equal to that of Marmite. Thus, a taste for Vegemite is an excellent predictor of national identity, making Vegemite a natural choice with which to explore the links connecting national identity, patriotism, and specific food preferences.

Second, Vegemite is not an obvious food choice. It has a strong, pronounced taste and is usually unpalatable on first

exposure. Individuals who try Vegemite for the first time almost always dislike its salty, yeasty flavor; preference is acquired with repeated tasting. In this respect, Vegemite joins a wide range of popular substances, including tobacco, alcohol, coffee, chile pepper, and black pepper, that seem unlikely candidates for human consumption.<sup>1</sup> The great popularity of such innately unpalatable foods is extremely pertinent to our understanding of human food choice.

Third, the specific linkage of a taste for Vegemite to Australian origins raises the issue of food imprinting. Exposure to foods in the first few decades of life seems to have a powerful effect on the shaping of life-long food preferences. For example, immigrants retain strong preferences for their native cuisines, usually for their entire lives. Of all native-country traits, food preferences may well be the most resistant to change in the new country, a resistance that has been termed the “conservatism of cuisine.”<sup>2</sup> Yet there is little other evidence linking early childhood food experiences with adult preferences. Since milk, the first food of all mammals, is literally unavailable for any species after weaning (except for humans, who have consumed dairy products since the development of dairying in relatively recent human history), an attachment to first foods would seem to be maladaptive in humans.<sup>3</sup> Furthermore, though social context significantly influences food choice,<sup>4</sup> the specific food preferences of parents are not closely linked with those of their adult children.<sup>5</sup> Thus, the question of whether exposure to particular foods in the first five or ten years of life determines adult preferences remains unsettled. The case of Vegemite and an examination of the presumed tight linkage between early exposure and adult preference may shed light on this important issue.

In the present study, we sought to explore the association between a taste for Vegemite and Australian birth and ancestry as a specific example of the more general phenomena of early exposure, food imprinting, and the acquisition of adult taste. To these ends, we devised a questionnaire to examine when and how Vegemite preferences are formed (see Appendix).

Table 1. Liking for Vegemite and other foods in native-born Australians ( $n = 151$ )

ITEM	MEAN	STANDARD DEVIATION	CORRELATION WITH VEGEMITE
Vegemite	6.52	2.49	—
chocolate	8.03	1.55	-.06
steak	6.62	2.46	-.04
peanut butter	6.10	2.07	.14
milk	6.87	1.87	-.04
carrots	6.60	1.53	.09
butter	5.58	2.08	.04
apples	6.89	1.49	.01
Marmite	2.64	2.90	.18
sardines	3.52	2.74	-.05
lamb chops	5.76	2.57	-.01
broccoli	6.26	2.09	.09
black coffee	3.25	2.69	.10
pepper	5.95	2.66	.05

## Method

Of the 202 undergraduate students in an introductory psychology course at the University of Queensland in Brisbane, Australia, 185 filled out the questionnaire. The sample, therefore, is representative of all students taking psychology at Queensland. Because there were only a few non-native Australians in this sample, we recruited other non-native students from a different psychology class, and 17 such surveys were added to the sample. The students ranged in age from 17 to 44 years, with a mean age of 23.6 (Standard Deviation = 7.44). Of the subjects, 68 were female. 151 were born in Australia, 14 in New Zealand, and 36 elsewhere (the birthplace of one other subject was left unidentified).

The questions were designed to investigate various aspects of the individuals' preference for Vegemite and the history of their exposure to it. The questionnaire included the following points:

- standard demographic data
- ratings of current liking of Vegemite and several other foods
- frequency of consumption of Vegemite and contexts in which it is consumed
- earliest exposure to Vegemite
- free associations with the word "Vegemite"

- why Vegemite is liked or disliked
- acceptable Vegemite substitutes
- knowledge of the company that produces Vegemite
- information on Australian citizenship and patriotism (pride in being Australian).

## Results

The preferences of the Australian-born subjects are shown in Table 1, based on a scale ranging from 1 = dislike extremely to 9 = like extremely. These individuals liked Vegemite quite a lot, and the taste for Vegemite was higher in females than in males. Thirteen other foods were included in the questionnaire, which were selected either because they are unusually common or because they have strong tastes and might, in this respect, be parallel to Vegemite. Five of these foods (chocolate, apples, milk, steak, and carrots) were rated higher than Vegemite by the Australian-born subjects. Liking for Vegemite did not correlate substantially with a liking for any of the other sampled foods; the highest correlation, not surprisingly, was with Marmite.

As shown in Table 2, long-term association with Australia was clearly related to liking Vegemite. For the 74 Australian-born subjects whose parents and grandparents were also born in Australia, the mean rating score for liking

Vegemite was 6.62; for the 44 subjects not born in Australia and not having parents born there, this score was only 3.86.

The relation between self-reported age of first exposure to Vegemite and liking for Vegemite was also evident in a correlation of  $-0.32$ , suggesting that the relation is solid but not very strong.

Individuals who had spent their early life in Australia expressed a liking for Vegemite, but this correlation was far from perfect. On the one hand, 121 of the 151 subjects (80.1 percent) born in Australia liked Vegemite (hedonic score  $> 5$ ),<sup>6</sup> leaving 29 (19.2 percent) who rated Vegemite at 5 or less (5 being neutral). On the other hand, 12 of the 28 subjects (42.3 percent) who first arrived in Australia after age 10 liked Vegemite, scoring it  $> 5$ . Of the 8 subjects who arrived in Australia after age 20,<sup>7</sup> only 1 reported liking Vegemite.

Given the status of Vegemite as a symbol of Australian identity, we constructed a composite measure of enthusiasm for things Australian, made up of the sum of positive responses to the following statements:

“I think being Australian is one of the most important things about me.”

“I definitely want to have Australia as my main home for my adult life.”

“I am an Australian citizen.”

Generally, Australian enthusiasm was a less reliable predictor of liking for Vegemite than being born in Australia.

Subjects were asked to recall occasions when they had observed someone trying Vegemite for the first time and to indicate that person’s reaction to it. 120 subjects reported witnessing at least one such occasion. Of the 473 occasions reported, 121 (25.6 percent) were reported as instances of people liking Vegemite. Caution is needed in interpreting this result, however, as individuals rating the acceptability of Vegemite to others might be influenced by their own taste for it. Nevertheless, 25 subjects who claimed to dislike Vegemite (rating it  $< 5$ ) contributed data to this part of the study, providing 101 observations, 35 of which (35 percent) were reported as a positive response to Vegemite. Hence, if anything, those who disliked Vegemite reported a higher incidence of initial liking in others.

When subjects were asked to explain why they ate—or didn’t eat—Vegemite, the most common response by far was taste. Of the 167 explanations offered (25 of those who liked Vegemite gave no response, and some subjects gave more than one account), 87 subjects gave taste as the explanation; at least 10 said “I like it”; 18 listed “habit”; 14 said “quick and easy”; and 10 gave “vitamins” as their explanation. The most common response for not eating Vegemite was “bad taste” (20 of the 65 responses offered). 17 other negative responses

Table 2. Liking for Vegemite and Australian origins

	NUMBER	MEAN	STANDARD DEVIATION
All subjects	202	5.92	2.49
Australian-born subjects with Australian-born parents and grandparents	74	6.62	1.94
Non-Australian subjects with non-Australian born parents	44	3.86	2.86

referred to some general sensory property, such as too salty, or too strong-smelling; another 9 reacted with less ambivalence: “hate it”; “disgusting”; “dislike.”

## Contexts and Associations

The circumstances in which particular foods are eaten may affect the evaluation of food quality or even taste. Subjects were asked to state the contexts in which they usually ate Vegemite, and liking for Vegemite was found to correlate strongly (0.77) with the number of contexts in which it was eaten. The responses, with the percent of total sample given in parenthesis, indicate that Vegemite is eaten on bread (78), at breakfast (67), as a snack (63), for lunch (56), for supper (24), by itself (20), with drinks (6), or with fruit (2).

Furthermore, subjects recognized not only the name, but the brand. When asked to name the company that manufactures Vegemite, 169 of the 202 respondents correctly identified it as Kraft.

Subjects indicated that when Vegemite was not available, they substituted a different spread, such as jam or marmalade (41), peanut butter (38), honey (38), or Promite or Marmite (21). 18 subjects confirmed their loyalty to Vegemite by claiming that there was no substitute. Most of the substitutes reported were rather sweet in comparison to the savory Vegemite; items that can be spread on bread seem to be more readily substituted than foods that are similar in taste.

When subjects were asked to give their first three free associations with Vegemite, the most common responses were toast (102), Australia or Australian (44), good taste (40), color, usually brown (39), and breakfast (28). Twenty-five disparaging terms were also offered, including “awful,” “yuck,” “ugly,” and “bitter.”

## Discussion

Vegemite and Australia are strongly connected. Indeed, the eating of this food product and especially the enjoyment of it are specifically linked to Australian birth and ancestry. Although our study confirmed the link between pre-adult experience with a particular food and a liking for that food later in life, in the case of Vegemite this link is not perfect. Early experience with Vegemite strongly inclines one to like it, but even in the absence of such experience, some people develop a taste for it. Our research suggests that early exposure is an important determinant of whether one will like Vegemite, though it is neither necessary nor sufficient.

This study gives rise to several research issues. First, we found anomalous cases of people who dislike Vegemite despite early exposure to it, and of others who like it without having tried it early in life. Which attitudes to food and which other food preferences may have promoted these atypical reactions? For those who come to Vegemite later in life but still report liking it, ethnic differences and familiarity with certain native cuisines might account for this preference. In this respect, there is evidence that children appraise food on the basis of color, but as they mature they come to rely more on taste.<sup>8</sup> Thus, the connection between the color and taste of ethnic dishes and “late” Vegemite preference merits attention; immigrant children of different ages and arrival times would be useful subjects for such a study. And since Vegemite consumption runs about even with that of Marmite in New Zealand, exploring why individual New Zealanders prefer either Vegemite or Marmite would be an interesting avenue for research.

Second, enthusiasm or patriotism for Australia was, mysteriously, not a significant predictor of Vegemite liking. Still, people are clearly judged by what they eat.<sup>9</sup> Among young children, Vegemite might come to function as a symbol of purity in lifestyle and have something to do with how children come to perceive certain activities as physically and morally healthy.<sup>10</sup> Vegemite might plausibly be associated with enthusiasm for Australia and with an Australian lifestyle by children at a particular stage of development, whether they are Australian-born or later arrivals.

Third, in view of the preference for Vegemite shown by most Australian children and adults, the range of contexts in which it is eaten is surprisingly narrow. Vegemite is usually eaten on crackers or toast and occasionally in cheese, but relatively infrequently in other contexts. If the flavor is so desirable, why is Vegemite not added regularly to main course sauces or used to flavor bland foods like potatoes or rice? This question should be addressed by

further research. The narrow range of usage is reminiscent of the situation for chocolate and coffee, two highly liked substances that are used in rather narrow beverage or confection contexts, and only rarely with savory foods.

Geographically set apart from most other foods consumed in the developed world, Vegemite provides an excellent model for a more generalized study of the acquisition of food preferences. This sticky brown paste remains a candidate for the most culturally specific food. ☉

## NOTES

The research reported in this article was carried out while Paul Rozin was a visiting professor at the University of Queensland in 1995. Special thanks are due to Stefano Occhipinti and Monica Rozin for help in data collection and coding.

1. See Paul Rozin, “Getting to like the burn of chili pepper: Biological, psychological and cultural perspectives,” in B. G. Green, J. R. Mason, and M. R. Kare, eds., *Chemical Senses*, vol. 2: *Irritation* (New York: Marcel Dekker, 1990), 231–266; and Paul Rozin, “The acquisition of stable food preferences,” *Nutrition Reviews* 48 (1990): 106–113.

2. Paul Rozin, “The selection of food by rats, humans and other animals,” in J. Rosenblatt, R. A. Hinde, C. Beer, and E. Shaw, eds., *Advances in the Study of Behavior*, vol. 6 (New York: Academic Press, 1976), 21–76.

3. Paul Rozin and M.L. Pelchat, “Memories of mammarys: Adaptations to weaning from milk in mammals,” in A. N. Epstein and A. Morrison, eds., *Advances in Psychobiology*, vol. 13 (New York, Academic Press, 1988), 1–29.

4. L. Birch, J. Fisher, and K. Grimm-Thomas, “Children and food,” in M. Siegal and C. C. Peterson, eds., *Children’s Understanding of Biology and Health* (New York: Cambridge University Press, 1999), 161–182.

5. Paul Rozin, “Family resemblance in food and other domains: The family paradox and the role of parental congruence,” *Appetite* 16 (1991): 93–102.

6. The nine-point hedonic scale for food preference was used to evaluate “liking.” This scale ranges from 1 (dislike extremely) to 9 (like extremely), with 5 being neither like nor dislike.

7. These subjects were also included in the group of 28 who first arrived in Australia after age 10.

8. See N. Oram, D.G. Laing, I. Hutchinson, J. Owen, G. Rose, M. Freeman, and G. Newell, “The influence of flavor and color on drink identification by children and adults,” *Developmental Psychobiology* 28 (1995): 239–246; and N. Oram, D.G. Laing, M.H. Freeman, and I. Hutchinson, “Analysis of taste mixtures by adults and children,” *Developmental Psychobiology* 38 (2001): 67–77.

9. See Paul Rozin, M. Markwith, and C. Stoess, “Moralization: Becoming a vegetarian, the conversion of preferences into values and the recruitment of disgust,” *Psychological Science* 8 (1997): 67–73; and R.I. Stein and C.J. Nemeroff (1995), “Moral overtones of food: Judgments of others based on what they eat,” *Personality and Social Psychology Bulletin* 21 (1995): 480–490.

10. M. Siegal and C.C. Peterson, “Breaking the mold: A fresh look at children’s understanding of questions about lies and mistakes,” *Developmental Psychology* 32 (1996): 322–334.

APPENDIX

Vegemite is a highly popular and uniquely Australian food. We are interested in the nature of attitudes to Vegemite. Please answer the following questions. All answers will remain anonymous.

What are the first three things you think of when you think of Vegemite?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

If you consume Vegemite, answer question 4a. If you do not, answer 4b.

4a. Why do you eat Vegemite?

\_\_\_\_\_

4b. Why do you not eat Vegemite?

\_\_\_\_\_

Use the following 0–9 scale to rate your liking for Vegemite and other foods:

- |                        |                              |
|------------------------|------------------------------|
| 0 = never tried        | 5 = neither like nor dislike |
| 1 = dislike extremely  | 6 = like slightly            |
| 2 = dislike very much  | 7 = like moderately          |
| 3 = dislike moderately | 8 = like very much           |
| 4 = dislike slightly   | 9 = like extremely           |

Place a number (0–9) next to each food (for items 5 to 18):

- |                      |   |
|----------------------|---|
| ___ 5. Vegemite      | ___ 13. Marmite                                   |
| ___ 6. chocolate     | ___ 14. sardines                                  |
| ___ 7. steak         | ___ 15. lamb chops                                |
| ___ 8. peanut butter | ___ 16. broccoli                                  |
| ___ 9. milk          | ___ 17. black, unsweetened coffee                 |
| ___ 10. carrots      | ___ 18. foods with hot (Capsicum) peppers in them |
| ___ 11. butter       |   |
| ___ 12. apples       |   |

19. What is your best estimate of the age at which you first ate Vegemite? \_\_\_\_  
(Enter the age in *Years*, or <1 if in your first year).

20. Do you currently eat Vegemite? (circle one)

- More than once a day
- Daily
- A few times a week
- About once a week
- A few times a month
- Rarely
- Never

21. If you can't get Vegemite, what do you use instead?

\_\_\_\_\_

22. How many times have you tried Vegemite? (circle one)

- Never
- 1
- 2–5
- 6–10
- 11–50
- 51–100
- Greater than 100

23. Consider all of the times when you have been present when someone tried Vegemite for the first time. About how many times was that? \_\_\_\_.

24. In about how many of these cases did the person like Vegemite the first time they tried it? \_\_\_\_.

Answer questions 25 to 27 by circling the appropriate answer (Yes or No)

25. Yes No I think being Australian is one the most important things about me.
26. Yes No I definitely want to have Australia as my main home for my adult life.
27. Yes No I am an Australian citizen.

Do you eat Vegemite? (For questions 28 to 35, circle either Yes or No.)

28. Yes No straight (alone)
29. Yes No on bread
30. Yes No on fruits
31. Yes No in drinks/beverages
32. Yes No at breakfast
33. Yes No as a snack
34. Yes No at lunch
35. Yes No at supper

36. List other things you eat Vegemite with:

\_\_\_\_\_

37. What is your present age in years? \_\_\_\_

38. What is your gender? (circle one)

Male Female

39. What is your country of birth? \_\_\_\_\_

40. If you were not born in Australia, at what age did you first come to Australia (in years)? \_\_\_\_

What is the country of birth of your:

41. mother \_\_\_\_\_

42. father \_\_\_\_\_

43. maternal grandmother \_\_\_\_\_

44. maternal grandfather \_\_\_\_\_

45. paternal grandmother \_\_\_\_\_

46. paternal grandfather \_\_\_\_\_

47. What is the name of the company that manufactures Vegemite? \_\_\_\_\_