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**SWP 4/99 PERSONAL VALUES AND FOOD CHOICE:
AN APPLICATION OF MEANS-END ANALYSIS**

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Personal Values and Food Choice: An Application of means-End Analysis



Abstract

Meat consumption has been falling for almost 20 years, and the long-standing link between affluence and meat eating has been broken. In ten years the proportion of population claiming to be vegan or vegetarian doubled, those identified as meat avoiders almost quadrupled and a further 40% of the UK population are now classified by Gallup as 'meat reducers'. This is seen as evidence of a growing national trend towards vegetarianism, but our findings suggest that the majority of those who reduce their meat intake do so for health reasons, rather than from a vegetarian philosophy.

Means-end analysis was used to study the underlying motivations of three groups; meat eaters, meat reducers and vegetarians. Health was found to be the central issue in food choice, but each group sought different terminal values. The view that meat reducers (and possibly even meat avoiders) are demi-vegetarians is challenged by the finding that their underlying motivations are similar to meat consumers, and quite unlike those of vegetarians. Persuading meat reducers to adopt a vegetarian diet would require the difficult task of changing the enduring terminal values that they seek to attain through their food choice behaviour. In contrast, persuading them to eat more meat would 'only' be a question of changing their beliefs about the healthiness of meat consumption.

Keywords

Means-end

Meat

Vegetarianism

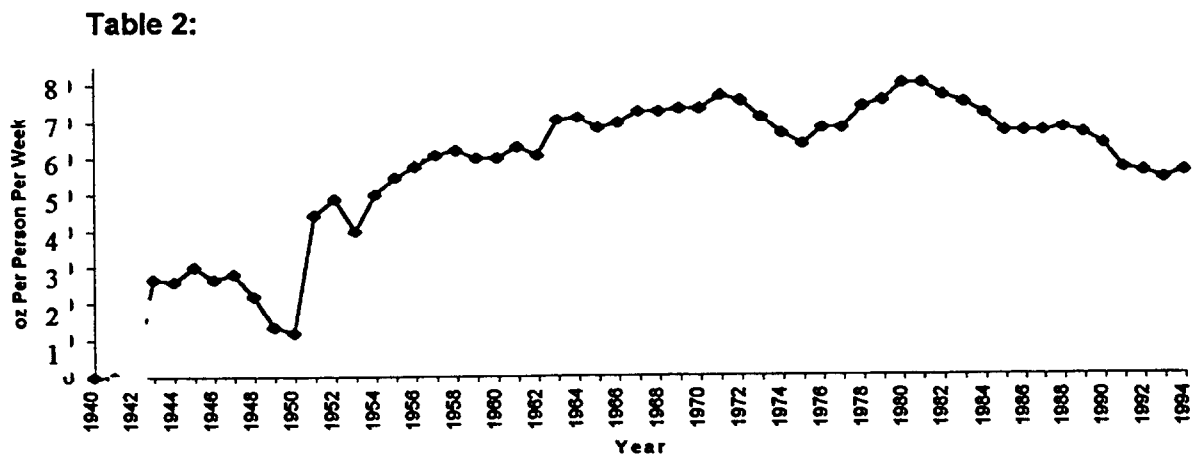
Values

Health

Introduction

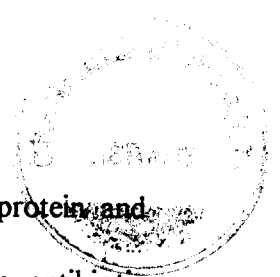
In general, post-war demand for meat rose in tandem with rising living standards and disposable income levels. However, since 1980 rising living standards have not led to an increase in demand and a long-standing correlation of affluence and meat consumption has been broken (fig. 1). A variety of reasons for this change have been put forward including concern about health, rejection of animals for food, environmental issues, changes in family structure and food scares (Woodward, 1988; Mennell, Murcott & van Otterloo, 1992; Beardsworth & Keil 1997).

Figure 1. UK Per Capita Meat Consumption 1943-1994



Source MAFF 1991, 1994.

The connection between meat consumption and health is the subject of many reports, books, popular articles and government advice. This really started during the 1980s when reports by the National Advisory Committee on Nutritional Education (1983) and the Committee on Medical Aspects of Food Policy (1984) highlighted the link between diet and health. These, and the more recent C.O.M.A (1991) report on which the government based its white paper,



'The Health of the Nation' raised public awareness of the links between fat, protein and various cancers (Fiddes 1991), and between meat consumption and increasing antibiotic immunity, allergic reaction, diabetes, hypertension, gallstones and reduced fitness throughout the population (Cox 1986, Fiddes 1991, Mennell et al 1992). More recently still efforts have been made to encourage the consumption of fruit and vegetables as providers of the nutrients and antioxidant vitamins associated with protection against chronic and degenerative diseases (World Health Organisation, 1996; Leather, 1995; Rimm, Stampfer and Aschero, 1995. Other health related concerns include the use of antibiotics and growth promoters, excessive processing and refining and unnecessary inclusion of additives that are not nutritionally viable (Cooper, Wise & Mann, (1985). Richardson, Shepard & Elliman (1993) confirmed that such concerns really do affect food choice behaviour.

The family is an important influence. Changes in family life, a reduction in the number of formal meal occasions and the rise of snacking have all led to changes in food choice. But families are also a strong force for the status quo, as patterns of diet mostly take root in childhood (Ralph, Seaman & Woods, 1996).

Fiddes (1991) identifies deeper, more symbolic and cultural explanations for reduced meat consumption, arguing that meat has a symbolic value derived primarily from its representation of human power over nature, especially after the rise of scientific rationalism in the 17th century. He suggests that there is wide acceptance of the view that human domination has now gone too far, and that the practice of celebrating the dominance of humans over nature is in decline. Consequently, the consumption of red meat is no longer a reassuring and assertive expression of human dominance but a disturbing reminder of a more barbarous and insensitive

past. Elias (1978) suggests that increasingly lower thresholds of disgust are a function of the civilisation process, leading to a lowering of what Mennell (1985) calls the, '*threshold of repugnance*' as people become increasingly less willing to contemplate origins of their food. This view was supported by Rozin (1991), who found that the adoption of health and whole-foods was related to disgust with food's animal origins, and by Woodward, (1988), who drew attention to an increasingly negative view of cruelty to animals raised for food.

There are also environmental and humanitarian issues. To many people meat production represents an unjustifiably extravagant use of natural resources. For example, the production of one kilogram of beef protein takes up 22 kilograms of grain protein. It is argued that eating less meat would free crucial resources to produce food to alleviate hunger and malnutrition (Beardsworth & Keil 1997; Fiddes, 1991).

If all of that were not enough for the meat industry, most of the spate of food scares of the past ten years have concerned meat. Those that affected national eating habits most in recent times were; the Salmonella scare of 1988 which dramatically reduced egg consumption; the BSE crisis, that actually began in 1985-6 but did not come to major prominence until 1989, and to full blown crisis in 1996, when it was linked BSE to Creutzfeldt-Jakob Disease (Institute of Food Science & Technology 1996); and finally, the possibly even deadlier E.coli 0157 outbreaks which arose between 1988 and 1998. Public perception is crucial, Ehrlichman's (1990) report that only 10% of UK slaughterhouses were hygienic enough to export within Europe was not so widely reported and caused relatively little public concern.

According to the Realeat Surveys undertaken by Gallup, the proportion of the UK adult population claiming to be vegetarian or vegan increased from 2.1% in 1984 to 4.5% in 1995, and the proportion avoiding red meat rose from 1.9% to some 7.5%. Those reporting reduced overall meat consumption rose from 30% in 1984 to 40%. It should be noted that, the Meat and Livestock Commission disputes these figures, claiming (based on the Taylor Nelson and NHS surveys) that 3% are vegetarian and 9% meat reducers (Beardsworth & Keil 1997).

Despite all of the foregoing practical, aesthetic, moral and physiological reasons for cutting out or reducing meat consumption, Beardsworth & Keil, (1992) reported that vegetarians repeatedly stressed that their dietary choice was an attempt to regain what they explicitly referred to as 'peace of mind'. Other reasons with empirical support are, health (Realeat Surveys, 1980-1990; Murcott, 1983; Vegetarian Society 1991) and treatment of animals (Vegetarian Society 1991).

Purpose of the Study

The implication of Beardsworth & Keil's finding regarding vegetarianism and peace of mind is that some of the factors underpinning the decision whether or how much meat should be eaten are psychologically driven and concern the achievement of desired end states of being. The purpose of this study was to investigate such psychological factors, and to assess the role of personal values and desired end states in the domain of food choice behaviour, especially meat consumption. We wanted to explore the attributes that consumers perceived to be of importance in deciding how much meat to include in their diet, what consequences these attributes deliver, and whether chains of meaning linking the attribute, consequence and value

levels could be determined, in order to better understand how these are used to achieve desired end-states. We wished to differentiate between three groups, vegetarians, meat reducers and meat eaters, in order to determine whether and in what way the personal values of each group, and/or their means of achieving them, differed. Vegetarians were defined as those who reported that they do not eat meat red or white meat; meat reducers as those who said that they consciously endeavoured to reduce the amount of meat they eat; meat eaters as those who regarded meat as a normal part of their diet.

The theoretical basis for this study was means-end theory, which links the concrete attributes of a product (the means), through the perceived consequences of these attributes to the subjects' abstract personal values (the ends) (Gutman 1982).

Means-End Theory

Means-end theory was developed by Gutman to explain how product attributes facilitate consumers' achievement of desired end-states of being (or values) such as happiness, security or enjoyment. There are three levels of abstraction associated with a concept such as food choice:

- Attributes (the means)
- Consequences of consumption.
- Important psychological and social consequences and values (the ends)

Attributes are relatively concrete meanings representing the physical, observable, or perceived characteristics of a product. Concrete attributes reflect the physical features of the product, whereas abstract attributes are more subjective and represent several concrete attributes.

Consequences are more abstract meanings that reflect the perceived costs or benefits associated with specific attributes. These are sub-divided into two types; functional consequences that include direct, tangible outcomes derived from consumption, and psychosocial consequences involving intangible, personal and less direct outcomes. These can be either psychological in nature (e.g. how do I feel about consuming meat?) or social (e.g. how do others feel about me consuming meat?) (Peter and Olson, 1987). Finally, personal values are highly abstract meanings that refer to centrally held, enduring beliefs or end-states of existence that people seek to achieve through their behaviour.

Procedures

An issue when using this technique is whether the researcher imposes the elements or the subject chooses them. Adams-Webber (1979) suggests that when constructs are elicited from subjects individually are more personally meaningful. However, when the researcher imposes the elements, it enables the focus the study to more precisely match the aims of the research project. In practice, the food categories were pre-defined and subjects suggested products that matched each category.

Eliciting Constructs

Based on Twigg (1979), six food categories were selected: red meats, white meats, vegetable comminutes and vegetable analogues (packaged vegetarian recipe item and ingredient items respectively), vegetables and pulses. Subjects identified specific products from each category which were then printed onto cards and presented to the subject in randomised sets of three (Kelly, 1955). Subjects were then asked to think of any way in which two of the three foods from each category were similar to each other but different from the third. This process was

repeated until the subject failed to elicit any new constructs. Thirty subjects, 10 each of meat eaters, meat reducers and vegetarians (defined as non-red or white meat eaters), were interviewed individually for approximately 40 minutes. A range of 15 to 36 constructs was elicited per subject, and these were used to compile a comprehensive list of attributes for use in the laddering interviews.

Laddering Procedures

Laddering is a one-to-one interviewing technique employing a series of directed probes to reveal how subjects link product attributes to their own underlying values. Central to the method is the premise that lower levels imply the presence of higher levels, so that product **Attributes** have **Consequences** that lead to **Value** satisfaction. The purpose is to determine the 'ladder' of linkages between the Attributes, Consequences and Values in relation to food choice (Reynolds and Gutman, 1988).

In order to preserve the elicited views and language the thirty subjects from the elicitation stage were also interviewed in the laddering stage (Winch 1958). Care was taken to create an environment in which respondents were relaxed enough to be introspective. Before commencing the interview each subject was assured that there are no right or wrong answers, and that the purpose of the exercise was to understand their personal view of the world. After collecting basic demographic information, the subject was presented with the list of food attributes shown in table 1 and asked to rank the 10 which reflected their most important choice criteria. Next they were asked to identify which pole of the distinctions they most preferred, which served as the basis for the question, "Why is that important to you"? Variations of this question were then repeated, leading to still higher-level distinction until the interviewer was satisfied that the personal value linkage had been made. When respondents

struggled to articulate an answer one of the range of techniques proposed by Reynolds and Gutman (1988) were employed to move the interview forward without influencing the subject. The interviews were tape recorded and lasted for up to 50 minutes each.

Content Analysis and Data Reduction

Each ladder was entered onto a separate coding form, and content analysed in order to develop a set of summary codes reflecting everything mentioned in the interviews. Six coders were enrolled and tested for inter-coder reliability by giving each the same instruction pack, briefing, and interview transcript to code. The output from all six coders was then compared on a pair-wise basis by calculating the number and percentage of attribute, consequence or value codes assigned to the same categories. This process yielded an inter-coder agreement of 85.5%, with the weakest coder attaining 81.9% agreement with the others. Differences between the coders were noted, and further guidelines were issued for the actual coding stage. Working independently, the coders first classified the responses into attributes, consequences or values, and then broke them down into individual summary codes by establishing categories of greater inclusiveness. For example, the category '*preparation*' includes, '*ease of preparation*', '*long preparation*', '*quick preparation*', '*marinating*', and '*can be flavoured*' in one summary code. Disagreements were resolved between coders. This process yields categories that are numerically strong enough to be represented in the hierarchical value maps (figs. 3, 5 and 7). Forty five master codes summarising all the attributes, consequences, and values mentioned in the laddering responses were identified (table 1).

Table 1. Summary Content Codes

Attributes	Consequences	Personal Values
1. Occasion	13. Diet	28. Goal Achievement
2. Cooking style	14. Budgetary concerns	29. Equality

3. Availability	15. Enjoy / pleasant	30. Fulfilment
4. Healthy	16. Filling	31. Happiness
5. Price related	17. Health related	32. Healthy life
6. Fat content	18. Time	33. Inner harmony
7. Preparation	19. Eases / hardens situation	34. Pleasure
8. Taste / flavour	20. Taste / flavour	35. Satisfaction
9. Texture	21. Interests	36. Sense of achievement
10. Meal component	22. Fat / aesthetic	37. Social recognition
11. Quality	23. Energy / active	38. True Friendship
12. Filling	24. Activities	39. Variety
	25. Relax, less thought	40. Wellbeing
	26. Texture	41. Complete life's tasks
	27. Functionality	42. Control of life
		43. Freedom
		44. Caring for others
		45. Return to nature

The Implications Matrix

The next task was to prepare an 'Implication Matrix' summarising the number of connections, or relations, between each attribute, consequence and value. Two types of relations may be represented in this matrix. For example, in figure 3 the ladder (6) *Fat content* to (17) *Health related* to (23) *Energy/active* to (32) *Healthy life* represents relations between adjacent elements. The (6) *Fat content* to (17) *Health related* relation is direct, as is (17) *Health related* to (32) *Healthy life*. However, there are also indirect relations such as (6) *Fat content* to (17) *Health related*, (17) *Health related* to (23) *Energy/active* and (23) *Energy/active* to (32) *Healthy life*. Elements with a high incidence of indirect relations should not be ignored to avoid bias through underweighting the associations recorded for the more verbose subjects (Klenosky, Gengler and Mulvey, 1993). Therefore, both types of relations were considered in determining which paths were dominant.

The Hierarchical Value Maps

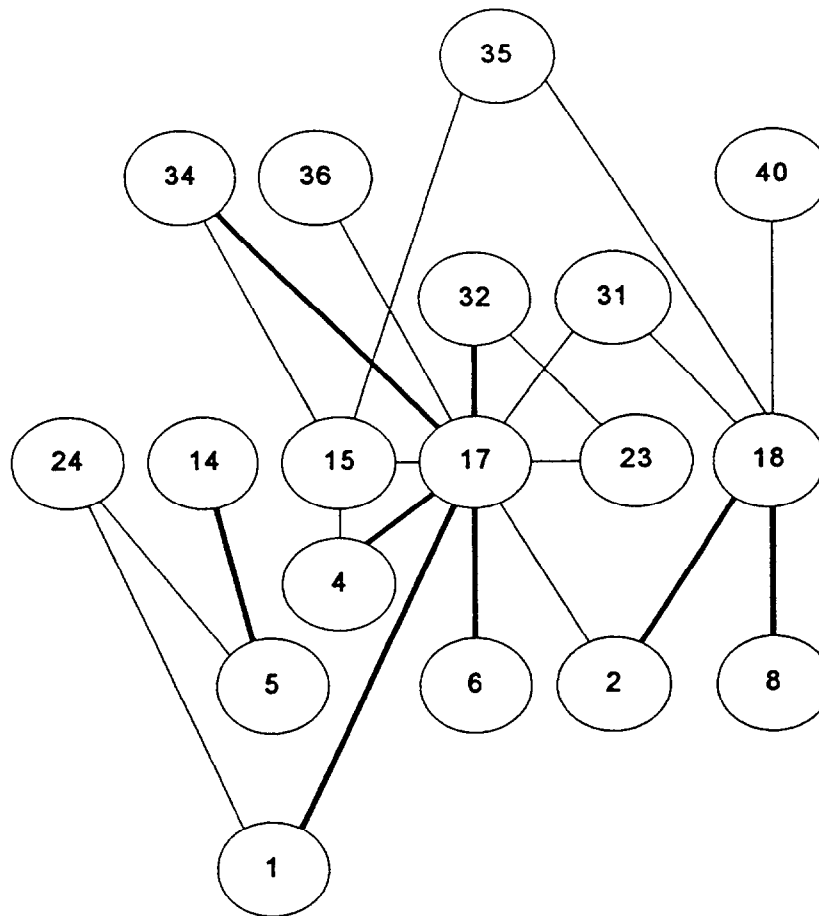
Hierarchical Value Maps for each group of subjects were built up by connecting the chains extracted from the Implications Matrix. By trial and error a cut-off level of three relations was found to yield the most informative and stable set of relations. All connections below this level were ignored. In establishing the cut-off level, the total number of linkages (both direct and indirect relations) were counted. For clarity the relative strength of the links between the attributes, consequences and values was indicated by shading the connecting lines according to the numerical strength of the link; those exceeding five relations are indicated by thicker lines and were used to identify the dominant perceptual orientations for each group (see figures 2 - 7 below).

Dominant Perceptual Orientations

Meat Eaters

There are considerable differences between the value chains of this group, the vegetarians and, to a lesser extent, the meat reducers. For meat eaters the attribute, *health related* was central, leading to no less than five different values; *healthy life* (32), *happiness* (31), *sense of achievement* (36), *pleasure and (via enjoy/pleasant* (15)), *satisfaction* (35) (fig. 2). The value *wellbeing* (40) that was so important to the vegetarian group (below) was hardly present at all. Furthermore, the *price related* (5) - *budgetary concerns* (14) chain petered out at the consequences level, and did not lead to a value, unlike the meat reducer and the vegetarian groups for which it formed part of the dominant perceptual orientation.

Figure 2. Hierarchical Value Map – Meat Eaters

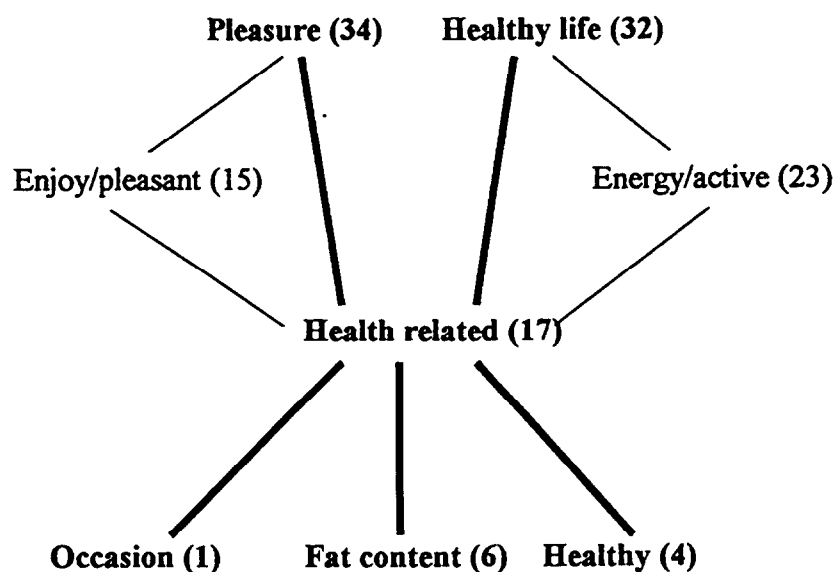


In figures 3, 5 and 7 the thick lines indicate dominant perceptual orientations, and the thinner lines show links that reinforce these. For clarity, all other links have been eliminated.

The dominant perceptual orientations for meat eaters culminated in the values *healthy life* and *pleasure* (fig. 3). Among meat eaters there was a strong link between meat consumption and the hedonic outcomes of *pleasure* and *happiness*. They liked eating meat, but their pleasure was not derived from its *taste and flavour* (which were weakly linked to the outcomes *satisfaction* (35) and *well-being* (40) rather than to *pleasure* (34)). One leg of this chain starts with the attribute *occasion*, suggesting that their pleasure in meat is partly linked to the place

that it enjoys at the top of the food status hierarchy, which Twigg (1979) related to its central role in celebrations.

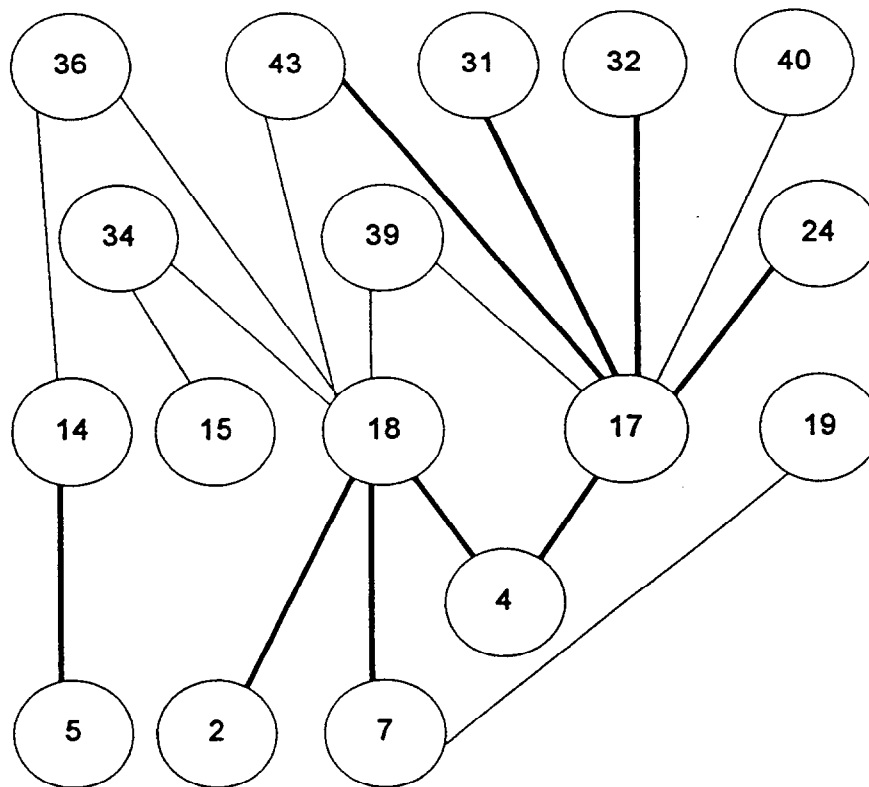
Figure 3. Dominant Perceptual Orientation – Meat Eaters



Vegetarians

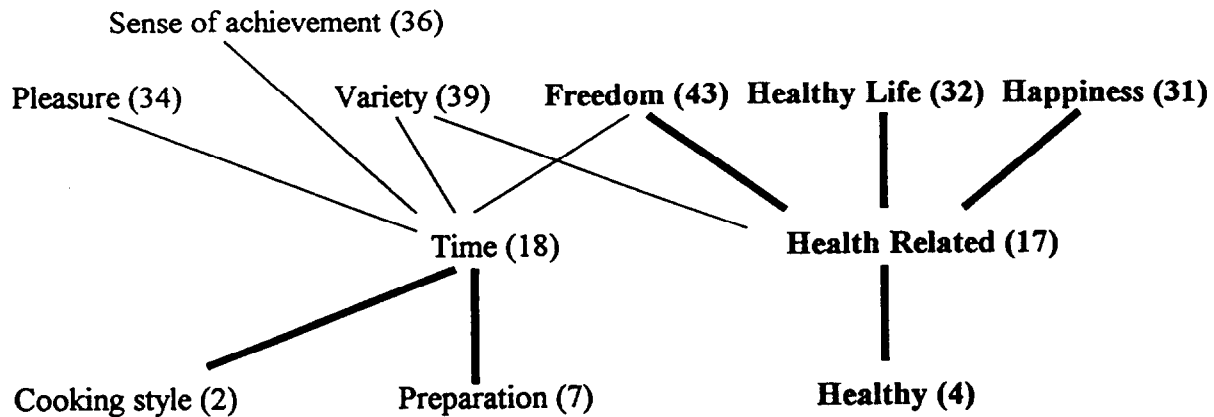
The vegetarians' hierarchical value map was considerably simpler than those of the other two groups (fig. 4). As with the other groups the consequence *health related* (17) was an important component of the dominant perceptual orientation, but a *healthy life* (32) was not found to be a desired end state for this group. This is contrary to Murcott's (1983) claim that health considerations are a powerful motivator that drives vegetarians to step outside the culturally prescribed diet.

Figure 6. Hierarchical Value Map – Meat Reducers



The dominant perceptual orientation of meat reducers was strongly centred on health. It was quite different to that of vegetarians and very similar to that of meat eaters, but substituting the values *happiness* and *freedom* for meat eaters' *pleasure* (fig.7). There was only one attribute of importance – *healthy* and one consequence – *health related*. Although, the consequence *time* did not meet the dominant perceptual orientation criteria of five relations with any of the terminal values, it was linked to four different values. For that reason it is included in figure 7.

Figure 7. Dominant Perceptual Orientation - Meat Reducers



Discussion

The purpose of this study was to explore means-ends knowledge structures associated with food choice, especially meat consumption. For all three groups the main considerations were the consequences for their health of a given food item. The end states sought by meat reducers (*healthy life*, *happiness* and *freedom*) were much closer to those of meat eaters (*healthy life* and *pleasure*) than to vegetarians. Both meat reducers and meat eaters attained these outcomes via *health related* consequences. In comparison vegetarians sought *inner harmony* and *wellbeing*, via a combination of *health related* and *budgetary* consequences. This challenges Murcott (1983) in that health, as such, was not found to be a powerful motivator of vegetarianism, but a partial means of achieving the less tangible end states of *wellbeing* and *inner harmony*, which are closer to Beardsworth and Keils' (1992) 'peace of mind'.

Claims made by The Vegetarian Society about the spread of vegetarianism are disputed (Beardsworth & Keil 1997). The disagreements seem to arise from differing assumptions about, for instance, whether or not meat avoiders and even meat reducers are really on the way to becoming vegetarians. We believe this not to be the case for meat reducers (up to

40% of the UK population) who selected their food on a very similar basis to meat eaters, and very differently from vegetarians.

We were surprised to find that animal welfare did not form part of the vegetarians' value chain, and that it was not even identified as a consequence. While this may be a true reflection of vegetarian food choice processes, it seems unlikely given the evidence (e.g. Elias, 1978; Mennell, 1985; Elias, 1978; Rozin, 1991; Woodward, 1988). The problem could lie in our definition of vegetarianism, which is complex and fraught with shades of meaning. In retrospect, our definition of vegetarians as 'those who do not eat red or white meat' was too broad, and it may have been better to regard vegetarians and meat avoiders as separate groups with different underlying motivations, somewhere between meat reducers and vegetarians. If so, this would imply that neither meat avoiders or meat reducers choose food on a similar philosophical basis to vegetarians, and their growing numbers are not evidence of increasing vegetarianism, merely of reduced meat consumption on health grounds.

These findings form the basis for effective communications strategies linking together entire chains of meaning that lead consumers along a series of stepping stones from food attributes to their desired terminal values (Mulvey, Olson, Celsi & Walker, 1994; Reynolds and Rochon, 1990; Young and Feigin, 1975). If The Vegetarian Society wishes to convert significant numbers of non-vegetarians it should acknowledge that vegetarianism does not offer meat eaters, meat reducers or possibly even meat avoiders a means of achieving their desired end-states. To succeed in promoting a meat free diet The Society has either to ignore the animal welfare issue and concentrate health issues, or to attempt the much more difficult task of modifying the enduring terminal values that non-vegetarians seek to achieve through their food

choices. For (e.g.) The Meat and Livestock Commission the task looks easier. The majority of the population mainly seek a *healthy life* through their choice of diet. In order to increase meat consumption the task is the relatively simple one of changing attitudes towards the healthiness of eating meat, with the added luxury of being able to link their product with the desired end states of pleasure, happiness and freedom.

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