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# Combining social and nutritional perspectives: from adolescence to adulthood (the ASH30 study)

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## Abstract

**Purpose** – The purpose of this paper is to focus specifically on the benefits of using mixed methods to investigate dietary change from adolescence to adulthood exemplified using the findings from the ASH30 longitudinal study. The ASH30 study is a longitudinal dietary survey which provided quantitative evidence of dietary change and investigated factors influencing dietary change from adolescence to adulthood.

**Design/methodology/approach** – Two three-day food diaries were collected both in 1980 (aged 11-12 years) and 2000 (aged 31-32 years) from the same 198 respondents in North East England. In 2,000 questionnaires were used to collect perceptions of, and attributions for, dietary change and open-ended responses were analysed using content analysis.

**Findings** – The use of mixed methods brings added breadth and depth to the research which cannot be achieved by a single discipline or method. Determining what has influenced change in dietary behaviour from adolescence to adulthood is a complex and multifaceted task. Eating habits are influenced by multiple factors throughout the life course. Change in food intake between adolescence and adulthood related to life-course events and trajectories. The qualitative findings highlighted relevant contextual information such as themes of moral panics, the concept of “convenience” and “fresh” foods.

**Practical implications** – Adopting mixed method approaches to exploring dietary change should offer a rich perspective from which to base realistic interventions.

**Originality/value** – Longitudinal dietary surveys present an opportunity to understand the complex process of dietary change throughout the life course in terms both of how diets have changed but also of why they have changed.

**Keywords** Research methods, Diet, Nutrition, England Paper type

Research paper

## Introduction

There has been an “explosion of international public concern about food” (Murcott, 1998a) in the industrialised world; questions about food safety and the impact of

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various aspects of diet upon health are seldom out of the news. Though the media debate may sometimes be characterised by scaremongering and misinformation, nutrition and health are inextricably linked. It is well established that dietary habits in early life influence the risk of developing several chronic diseases and the promotion of healthy eating is a priority of national and global health policies (Kleinman, 2000; World Health Organisation, 2003; Department of Health, 2004). Given what is known of the diet-disease relationship, understanding the development of food choices and attitudes is critically significant to developing any preventative health policy (Wardle et al., 1995).

This predominantly health-focused concern with what people eat has overlapped with “a surge of sociological interest” (Beardsworth and Keil, 1997, p. 3) in the study of food behaviours. Food and eating are also strongly represented within contemporary popular culture in books, magazines and television programmes (Warde, 1997; Wright et al., 2001). Food behaviours can be viewed as cultural practices, central to the development and maintenance over time of individual and collective identities (Visser, 1999). Food choices involve a complex interrelationship between biological and socio-cultural factors. Food may be physiologically essential for the body to function, yet socio-cultural determinants have a strong role in deciding which foods are consumed. In order to understand “why we eat what we eat”, we need to appreciate the role of factors such as time, space, social relationships, nature and culture (Caplan, 1996).

Combining nutritional scientific approaches and sociological perspectives is essential to understanding the nature and significance of the development of food choices over the life course (Devine, 2005). Interdisciplinary collaboration brings added depth to the research which cannot be achieved by application of a single discipline or method. The overall aim of the ASH30 longitudinal dietary survey was to explore longitudinal change in dietary intake from adolescence to adulthood. This paper will focus specifically on the benefits of using mixed methods to investigate dietary change from adolescence to adulthood exemplified using the findings from the ASH30 longitudinal study (Lake et al., 2006).

#### Methods used in ASH30 study

Dietary data using quantitative food diaries were collected at two time points twenty years apart. The first collection point was when individuals were 11-12 years old, at middle school and living in Northumberland, and the second at age 31-32 years, when many of the respondents had partners and families and most were working. The original research in 1980 for the ASH study (Hackett et al., 1984) focused on nutritional intake and socio-economic status of the young people’s parents. The objective of the ASH30 follow-up study (Lake et al., 2006) was to investigate dietary change from adolescence to adulthood. Using socio-demographic data and participants’ own perceptions of, and attributions for, their dietary change. The 1980 study was not designed to examine social processes nor participants’ perceptions of eating behaviours. In 2000 the longitudinal design expanded the nutritional aspect of the survey and included a primary objective of exploring participants’ perceptions of factors influencing their change in eating patterns and behaviours over time.

Foods consumed (at both time points) were assigned to one of the five food groups from The Balance of Good Health (Food Standards Agency, 2001)[1] and expressed as a percentage contribution to total food weight. Qualitative data was not collected at the

first time-point, but in 2000, two self-completion questionnaires were used to obtain the individual's perceptions of, and their attributions for, dietary change, eating habits, food choice and behaviours and to relate findings with the change in food intake from adolescence to adulthood (Lake et al., 2004). Within the questionnaires, combinations of both quantitative and qualitative questions were used to elicit perceptions about their dietary change. Two independent analyses of the open-ended questionnaire responses were carried out to derive the dominant themes using content analysis (Krippendorff, 1980) with QSR N5 NUD\*IST. These independent analyses were consistent with regard to the dominant themes.

#### The benefits of using a mixed-method approach

In relation to exploring dietary change, combining both quantitative and qualitative data was deemed important to achieve the objectives of the ASH30 study. Quantitative research methods are employed in dietary data analysis, while respondents' understanding and perception of their dietary change tends to be collected using qualitative methods. The "deeper insight" (Fade, 2003) offered by qualitative research methods to understand "the meanings, the concepts and symbols" (Gregory, 1995) relating to their dietary change enables research to offer possible explanations for and to understand change.

Choosing which qualitative research method to use is dependent upon an overall research strategy. Methods include participant observation, focus groups, case studies, life histories, diaries, semi – and unstructured interviews (Gregory, 1995; Davison, 1995).

Historically there has been a "quantitative – qualitative debate" which argues that the methods are "not logically linked" (Roberts, 2002). However, while quantitative and qualitative methodologies have their individual strengths and weaknesses, combinations of the methods are seen to be beneficial by drawing on the relevant strengths of each methodology (Jones, 1997). Quantitative methods illustrate how diet has changed, but are not adequate to explain the complex area of dietary change. Mixed-methods approaches allows the subject area to be examined from "multiple perspectives and/or paradigms" (Chenail, 2000) to gain a fuller understanding of the research area. Nau (1995) argues that "qualitative and quantitative methods used in conjunction may provide complementary data sets which together give a more complete picture than can be obtained using either method singly". Both approaches produce different types of data that can be used in the "explanation of social action and meaning" (Roberts, 2002).

One of the limiting factors within the design of the second phase of the ASH30 Study was the use of questionnaires as the means of collecting qualitative data. Time limitations and the need to reach the maximum number of respondents meant that questionnaires were deemed to be the most appropriate tool within the constraints of this particular study. Further studies in this area should consider the use of additional approaches, including in-depth interviews and focus group discussions. Within the ASH30 Study, the combination of methods achieved the aim of elucidating factors contributing to dietary change from adolescence to adulthood and comparing these with measured change in diet (Lake et al., 2004). The benefit of using mixed methods in a dietary change survey is that the data generated inform us not just of how diets have actually changed but also of the explanations which people offer for such change.

## Findings from the ASH30 longitudinal study

Significant changes between diet in 1980 and in 2000 were observed in the 198 ASH30 participants. Intakes of foods containing fat and/or sugar and milk and dairy foods decreased ( $p < 0.01$  and  $p < 0.031$  respectively), while intakes of fruit and vegetables increased ( $p < 0.01$ ) (Lake et al., 2006). Questionnaires were designed to investigate participants' attributions for dietary change. During these 20 years major life events, to which some of the responses alluded, occurred. These included attending secondary school, going to university, leaving home, travelling, undertaking work, gaining financial independence, moving to elsewhere in the UK, meeting and cohabiting with partners and having children. In parallel with these individual changes, there have been wider societal transformations such as major changes in employment opportunities following the end of coal mining in the region, the increased availability and variety of foods provided through large supermarkets, the "food scares" of the late 1980s and 1990s, the increased awareness and media profile of nutrition and numerous other events which may have played some role in shaping how an individual's diet changes. Five key attributional factors, derived from the open-ended questionnaire responses, were found to be associated with degree of dietary change over 20 years; these were nutritional awareness, lack of time, employment, parental influence and the influence of partners (Lake et al., 2004). For example, individuals who attributed changes in their personal eating habits to "nutritional awareness" had, over 20 years, increased their intake of fruit and vegetables and decreased their intake of meat, fish and alternatives significantly more than individuals who did not cite such awareness as a factor driving change (Lake et al., 2004).

The qualitative data, derived from the ASH30 responses to the open-ended questionnaire items, indicated that there was a general consensus among the ASH30 Study respondents that in 2000 there was a higher level of awareness about diet, nutrition and health than in 1980. This point is well illustrated by one respondent's reflections:

Though I was interested in my diet when I was 12, and my education had begun as regards healthy eating, I think I'm a lot more aware now than I was. I think it's probably easier to access information now than it was 20 years ago - there are certainly a lot more magazines/TV stations/books on the subject. I think the average 12 year old today would know far more than I did when I was 12 (Questionnaire 1: Female ASH30 respondent).

Quantitative dietary data alone would not have revealed this thoughtful insight into the cultural shift over 20 years. Dietary habits, in particular those related to change in food intake over time, are a culturally interesting phenomenon. Attributions for change are difficult to quantify but these data present an opportunity for researchers to understand the dietary change phenomenon during an important phase of the life course. The ASH30 Study results have demonstrated that while diet is changeable, remarkably flexible and receptive to influences from psychosocial, commercial, political and biological environment, there was evidence of tracking of intakes over 20 years.

## Discussion

The following discussion section will set the ASH30 findings and its approach in context of the following sub-headings, the stability of diet and dietary change; the life

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course and food choices; the science of nutrition and health policy, public understanding of nutrition and moral panic.

The stability of diet and dietary change

At the beginning of the 1990s, Murcott (1998b) described Britons as being “more food conscious than at any previous point in the nation’s history”. Interest in eating and food was seen at all levels of society from policy makers to the media (Murcott, 1998b). This change in food and eating awareness may have been a reflection of the way the eating patterns and habits of the British society were changing alongside other wider social changes. Cultural rules for food patterns and habits are enforced by convention and social interaction, while social and economic factors facilitate dietary change (Mitchell, 1999).

Globally, dietary change is a phenomenon occurring at differing rates in different world regions (Popkin, 1993). The dynamic nature of diet and its strong relationship with demographic, economic, social and health factors, mean that in order to understand dietary change and to promote a healthier diet we need to understand change in its context. Understanding this change or transition in nutritional patterns may be beneficial in the prevention of chronic diseases (Popkin, 1993), as this knowledge could be used to design effective interventions.

Throughout the last century, food habits in Britain have shown “both continuity and change” (Mitchell, 1999). The main meal or “proper dinner” remains recognisable and central to British food culture, while the ingredients and methods of preparation of this meal have been open to change. Over the last 20 years, increased eating away from home (Department for Environment Food and Rural Affairs and National Statistics, 2001), increased availability of food (Booth *et al.*, 2001) and “snacking” (Howard and Reeves, 2005) have been reported as having significant effects on eating patterns.

Reliable and robust dietary surveys enable researchers to track how dietary habits and purchasing has changed over time. What is lacking from the survey data are “explanations” for the dietary intake and the exploration of the social context of the dietary behaviour.

The life course and food choices

An individual’s journey through life has a major role in the evolution of their food choices; life-course developments and trajectories are of significance in the development of personal food choice systems (Devine *et al.*, 1998). It has been reported that individual food choices and preferences are, in part, “hard wired” within the individual’s physiology by polymorphisms in the genes encoding taste receptors (Drayna, 2005) which alter taste sensitivities. The extent and range of hardwiring remains to be established, but these preferences can be mediated as evidenced by change in food choices and preferences throughout the life course. Individuals have independent life events and predispositions, including taste preferences and neophobic reactions to new foods, which interact with the environment and contribute to food choice (Vauthier *et al.*, 1996; Birch, 1999). Life changes, for example, the transition from consuming an exclusively milk diet in infancy, to eating a varied diet, or transitions such as puberty or mid life events, are often a food choice determinant (Lindeman and Stark, 1999). Individuals experience movements and life transitions; starting school, changing school and then eventually the movement from school into employment,

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further education or unemployment (Cullen et al., 1999). These processes, in particular an individuals' past experiences with food, contribute to food choices.

If dietary habits are established in childhood, it is assumed that these habits continue or "track" into adulthood; in this context, tracking is defined as the "preservation of relative position" (Wardle, 1995). Tracking, or the constancy of dietary patterns over time, uses prospective longitudinal studies to establish whether eating patterns remain stable. There is little longitudinal data on the change in diet from adolescence through to adulthood (Parraga, 1990; Bertheke Post et al., 2001) and limited research into the perceptions and attributions people offer in explanation of their own dietary change over time. One survey which explored dietary change over this phase of the lifecycle was the Amsterdam Growth and Health Longitudinal Study which repeatedly measured (8 times) the dietary intake of 200 males and females from age 13-33 years using a cross-check dietary history interview. The authors reported that dietary intake from adolescence to adulthood showed low to moderate trends for tracking, which indicated that diet is changeable and that diet at age 13 is a weak predictor of adult dietary intake (Bertheke Post et al., 2001). This study suggested that although diet stabilises with increasing age, it does not stabilise during adolescence. On the other hand, it could be argued that much of this dietary change from adolescence to adulthood could be generational. Adolescent eating patterns are frequently described as unhealthy, and while evidence suggests that diet and eating patterns developed in adolescence "track" to adulthood (Lake et al., 2006), adults are perceived to have "better" diets. In this ASH30 sample it has also been shown that fruit and vegetable intake "tracked", i.e. those that had a lower intake in 1980, relative to their peers, maintained a lower intake in 2000 (Lake et al., 2006). The quantitative nature of the Amsterdam Growth and Health Longitudinal Study failed to explore the individual's reasons for change.

The smaller Penn State Young Women's Health study of 81 females who were followed, for a shorter time period, from age 12 to 18 years, found that dietary patterns did not remain stable through adolescence (Cardomone et al., 2000). In a much larger study of 2,376 children in the USA, Kelder et al. (1994), found that while eating patterns per se were unstable from 10-11 years to 16-17 years, healthy food choice behaviours tracked. The literature therefore suggests that diet in adolescence is not stable, but that certain food behaviours may track from one life-stage to another.

#### The science of nutrition

Nutrition is a relatively young science which began to be systematically studied at the beginning of the twentieth century (Bender, 1986). The "main objective of nutritional science" has been defined by Hoffmann (2003) as the identification of "optimal diets to promote health and prevent disease". This phrase exemplifies one of the key features of nutritional science: its normative stance towards diets optimising health.

Historically, the major contributors to the field of nutrition have been nutrition scientists and activists and medical and scientific administrators, but, social scientists have also made a contribution (Smith, 1998). Nutritional science has extensively researched the relationship between diet and health. Research strategies are often health focused and most research funding calls have utilitarian aims with an emphasis on health related outcomes. Nutrition research tends to focus upon eating in terms of nutritional categories and nutrients rather than in terms of behaviours. The sociological approach can take a more detached perspective on what people consume.

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This approach is less bound to assumptions regarding the “optimisation of health”: it can raise questions about the salience of such concerns for people.

In nutrition research, the dominant epistemological approach is reductionism (Hoffmann, 2003) and this trend is being accelerated by the adoption of modern biological research methodologies, especially post-genomic technologies by nutrition scientists (Mathers, 2004). But nutrition and health are complex, multi-factorial and socially located systems. Health is only one factor amongst many which individuals identify as a significant reason for consuming particular foods. Hoffmann (2003) advocates the integration of nutrition with a holistic thinking approach and new research strategies which include transdisciplinarity. Although nutritional science has traditionally tended to take a quantitative approach to research, qualitative research methods are increasingly being used to further understanding.

Health policy, public understanding of nutrition and moral panic  
Food and nutrition are a crucial aspect of global and national health policy and “healthy eating” has been an integral aspect of successive UK health policies (Department of Health, 1992, 1996, 1999, 2004). It has been reported that the British public appear to be increasingly aware of, and interested in, the relationship between the foods they consume and their health (Kelly and Stanner, 2003).

Nutritional terminology has been absorbed into everyday vocabulary through its wide use in the media by health promoters and commercial advertisers. For example, words associated with nutrition and used by many health professionals, such as “balance”, are used widely by the public (Keane and Willetts, 1996). Respondents from the ASH30 sample used terms such as “balance” and “variety” in their definition of healthy eating (Lake et al., 2007). In addition, participants often used nutritional terminology in their responses; words such as “protein”, “carbohydrate”, “starch” or “roughage” were used in one third of responses.

Food is an emotive issue (Gofton, 1990). Media coverage of health scares (Harrabin et al., 2003), GM foods (Frewer et al., 2002) and more recently obesity have generated a “moral panic”. The concern about and heightened awareness of healthy eating have “generated new obsessions and new anxieties” (Warde, 1997). Aside from food scares, headlines which describe the increase in obesity are frequent; there is a general perception that diets are actually getting “worse” and that rates of obesity are rising as a consequence. The childhood obesity “panic” has been fuelled by the media’s focus on the rates of childhood obesity and its related health problems (O’Dea, 2005). This panic could be seen to be further marginalising the socially deprived (O’Dea, 2005). In the press, the blame culture focuses on deprived areas, where the “root of the problem” is allegedly the parents who are reported to be unaware of healthy eating (Wyke, 2005). One episode of dietary moral panic in the UK was stimulated by a terrestrial television programme focused on children’s school dinners. Television chef Jamie Oliver’s campaign to improve school dinners in 2005 (Oliver, 2008) resulted in dramatic government intervention and the banning of “turkey twizzlers” by caterers (Quarmby, 2005). It is a feature of such discourse that specific foods, such as “turkey twizzlers”, are demonised.

Individuals tend to perceive their own food choices as “good” and “bad”. The quote below comments on the increased awareness to categorise what is “good” for us and what is “bad” for us:

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I would not have been as aware of the healthy options (1980), I feel that we are far more educated on what is good and bad for us now (2000) (Questionnaire 1: Female ASH30 respondent commenting on her change in awareness of “health eating” over a 20 year period).

This moral discourse puts the idea of “convenience foods” against “fresh” or “homemade” foods. Respondents emphasised the importance of foods being free from preservatives. The perception of convenience being the less “healthy” option was a strong theme in the ASH30 responses:

Nowadays, as an adult, despite being conscious of what healthy eating entails, I find my diet often includes “convenience” foods (Questionnaire 1: Female ASH30 respondent).

An interesting aside to this idea of moral panic is that some respondents recalled 20 years ago as being a “golden age” when foods, including school dinners, were homemade and nutritious:

Most of my food (in 1980) was home cooked and fresh. Now (2000)I use more convenience foods (Questionnaire 1: Female ASH30 respondent).

If the ASH30 study had explored change in intake only from a strictly nutritional viewpoint, without exploring the qualitative responses, it is unlikely that important themes such as this would have emerged.

An individual’s diet has been described “as the product of complex economic, political, cultural and social factors” (Gofton, 1990). Furst et al. (1996) described food choice decisions as being “based on conscious reflection” but also “automatic, habitual and subconscious” decisions.

## Conclusions

Dietary behaviour involves negotiated choices within social settings which are open to a wide variety of influences; all of these shift over time. The use of food diaries and the quantitative analysis of consumption in nutritional terms provides evidence of changing diets over time. The investigation of people’s attributions for changes in their own dietary behaviour add a social context to the measured dietary change and provide an “explanation” for the change.

Eating is one of the most basic and yet most complex of human behaviours. Further work is needed to develop a good understanding not only of the factors influencing this behaviour at any given time, but also of the factors influencing the even more complex phenomenon of dietary change. Having an in-depth understanding of those factors which influence and contribute to dietary change will have health implications and so may be attractive to funding agencies with utilitarian objectives. For example, little is known about the diversity, or otherwise, of factors which influence food choice at different stages of the life course, or in different socioeconomic groups, or among those from different ethnic backgrounds. The social context of the framework of ideas and understandings in which dietary changes are made cannot be ignored and are central to the theme of public health nutrition. Adopting mixed method approaches to exploring dietary change should offer a rich perspective from which to base realistic interventions.

## Note

1. This has now been replaced by new guidance Food Standards Agency (2007), *The Eatwell Plate*, available at: [www.eatwell.gov.uk/healthydiet/eatwellplate/](http://www.eatwell.gov.uk/healthydiet/eatwellplate/) (accessed 15 August 2008).

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