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How Do People Change Their Diet?

An Exploration into Mechanisms of Dietary Change

KATARZYNA CHAPMAN & JANE OGDEN
University of Surrey, UK

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ADDRESS. Correspondence should be directed to:
KATARZYNA CHAPMAN, PhD student, Department of Psychology,
University of Surrey, Guildford, Surrey, GU2 7XH, UK.
[Tel. +44 01483 683971; email: k.chapman@surrey.ac.uk]



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Abstract

The present study explored how people change their diet over the course of their lifespan and what factors facilitate this process. Twenty participants' narratives were analysed using Interpretative Phenomenological Analysis. The participants' narratives indicated that diet changes can occur either with or without the individual's active involvement. We labelled these the *active path* and the *passive path*. Four themes emerged denoting the mechanisms of change: *accumulation of evidence*; *trigger to action*; *imposed change*; and *seamless change*. These results indicate that dietary changes may not be as infrequent and difficult as often assumed and highlight an array of new mechanisms which could be explored further to promote behaviour change.

Keywords

- *behaviour change*
- *diet*
- *eating habits*

Introduction

DIET IS A central part of a healthy lifestyle, yet research indicates that dietary change is difficult to initiate and maintain. However, if the initial effort required to precipitate change is sustained, and the behaviour is repeated enough times, it will become easy to maintain. To gain insight into these processes, behaviour change in general alongside dietary change has been studied within the overarching theoretical framework of self-regulation that includes acquisition of habits, goal pursuit, stages of change and willpower theories.

Wood, Quinn and Kashy (2002) define *habit* as the routine repetition of past behaviour that is cued by stable features of the environment. A habit forms over a long period of time but once learned its performance becomes effortless as it requires only minimal and sporadic thought to initiate it. There are a number of advantages in acquiring habits: cognitive economy; performance efficiency; low emotional engagement; low stress; and greater feelings of control. Habitual behaviour does not deplete the individual's self-regulatory resources necessary to perform effortful behaviour. However, deeply entrenched habits may become counter-productive, especially when a change of behaviour is necessary, such as where a change in dietary habits is needed to address increased weight, which in turn may lead to increased likelihood of developing serious health risks (e.g. Peters, Wyatt, Donahoo, & Hill, 2002). When habits are deeply entrenched, behaviour change requires the mobilizing of cognitive resources to overcome these habits. This effort has been described and explained by *stage theories of health behaviour* and *self-regulation* models. Stage theories of health behaviour focus on behavioural enaction. They postulate that change of behaviour comes about as a process of discreet stages. In the most frequently cited Transtheoretical model developed by Prochaska and DiClemente (1982), there are stages of: *pre-contemplation*; *contemplation*; *preparation*; *action*; and *maintenance* with an added element of *relapse*. This and other models (e.g. the precaution adoption processes model, Weinstein, 1988; the health action process approach, Schwartz, 1992) explain the behaviour change in terms of discrete stages. These models attend to the dynamic quality of behaviour over time by incorporating the element of relapse, but they are mostly linear in nature and less than successful in mapping the emotional processes and the role of social and environmental

contexts in influencing behaviour (Cameron & Leventhal, 2003, p. 7).

In contrast to stage theories, *models of self-regulation* conceptualize behaviour change in terms of a dynamic framework, with individuals as active agents in pursuit of goals who are influenced by emotional states and use feedback control to evaluate their efforts. Scheier and Carver (2003) developed a model of behavioural self-regulation that includes both cognitive and emotional processes and is particularly useful for mapping health behaviours. In their model, goal pursuit is the main focus, with all effort directed at either achieving the goal or avoiding it (e.g. eating a healthy diet versus avoiding eating an unhealthy diet). The element of feedback is an important part of this model, as the authors claim that people engage in feedback even when it is counter-productive, such as in the case of patients treated for hypertension who obsessively monitor their physical state, which results in an unnecessary increase in anxiety (Baumann & Leventhal, 1985; Meyer, Leventhal, & Gutmann, 1985).

The effort that is required in self-regulation and particularly in the maintenance of behaviour change has been the subject of *theories of willpower*. Baumeister compared the limited processing resource required in self-regulating to a *muscle* of certain strength and endurance qualities. According to his notion, all self-regulatory tasks draw on the same limited resource that may be depleted in doing one task with no energy left to perform additional tasks (Baumeister & Vohs, 2004). There is evidence that too much work leads to *ego depletion* (exertion) but rest and sleep can restore the muscle's strength (Baumeister, Heatherton, & Tice, 1994). There is also evidence that the muscle gets stronger through exercise as its self-regulatory strength can be boosted through use (Muraven, Baumeister, & Tice, 1999). The model also predicts that 'exercise' can increase resistance to ego depletion with some supporting evidence (Muraven et al., 1999). And so, although self-control depletes the ego in the short term, exercising self-control in the long term increases the ability to cope with ego depletion.

According to these models, behaviour change requires effortful behaviour while the success of long-term maintenance rests on the development of habitual behaviour. This theoretical framework underpins much of the research into dietary behaviour. The issue of making and maintaining changes in diet is of central importance to the study of health behaviour. An unhealthy diet has been indicated as

a contributory causal factor in cancer (e.g. Steinmetz & Potter, 1991) and obesity (McKenzie & Johnston, 2001; Peters et al., 2002). Obesity, in turn, has been indicated as a risk factor in cardiovascular disease (Yusuf et al., 2005) and Type 2 diabetes (e.g. Chan, Rimm, Colditz, Stampfer, & Willett, 1994). Current evidence indicates that there is very little long-term change in diet recorded for instance in the consumption of saturated fat, salt, fibre, fruit and vegetables (Kumanyika et al., 2000). However, there is also evidence showing that adults are capable of changing long ingrained eating habits, and yet such evidence usually comes from a sample of individuals that has an urgent need to do so, for example when their health is at risk due to obesity, diabetes (Wing et al., 2001) or coronary heart disease (Ornish et al., 1998).

The psychological research undertaken so far had concentrated on the problematic nature of food consumption. As a result, an insightful and counter-intuitive restraint theory emerged (e.g. Herman & Mack, 1975). This theory explained a 'what the hell' phenomenon (when strict dieters give up attempts to control their diet after consuming an unplanned amount of food) that is characteristic to individuals who struggle to maintain a non-problematic relationship with food. Yet there are individuals who do not seem to struggle to regulate their diet. How do they do it? Is dietary change always difficult to initiate and maintain in the absence of a health threat? Is the conscious formation of habits the only way to permanent diet change? Evidence provided by sociological studies that trace people's diets across their lifespan (e.g. Devine, 2005) indicates that people change their diets as they get older, get married or move to another region or country. How does this happen? The psychological processes that are involved in these kinds of changes are under-explored. Food consumption is essential to survival and, therefore, it inevitably assumes an important and universal place in human life experiences. The aim of the present study was to investigate one aspect of the food consumption process: the phenomenon of dietary change. The qualitative methodology was chosen as the most effective means for the initial exploration of this sphere of individuals' experience.

Method

Design and procedure

The qualitative method was used to design, conduct and analyse 20 semi-structured interviews. Ethical

approval was granted by the University of Surrey Ethics Committee. All the interviews were face-to-face and took place during a six-week period in April to May 2007, with the interviews lasting between 25 and 60 minutes. The interviews were conducted in one of two private houses with a witness available on each occasion to co-sign a consent form and remain on the premises for the duration of the interview. The participants were interviewed in two locations: South-East England and South Wales. All interviews were recorded and transcribed verbatim by the first author. The results were analysed using Interpretative Phenomenological Analysis.

Participants

Ten men and ten women participated in this study. The first author recruited participants through a village sports club in the South-East of England. The club manager was approached to advertise via email an invitation for the study. The invitation stated the purpose of the study and the reasons for studying the topic of dietary change. The first four respondents were asked whether they could recommend other potential participants, preferably of non-middle class background. This snowballing method resulted in recruiting further participants who were not members of the sports club, of whom some lived and/or worked within the village community and some lived in Cardiff (Wales). The rationale behind this method of recruitment was to avoid populations studied most often—undergraduate students, patients and middle class population, in order to come in contact with adult individuals whose varied life experiences might have been shaped by their diverse social backgrounds. None of the participants were paid for their time. All participants were given pseudonyms during the description of the interviews. The participants' demographic characteristics are displayed in Table 1.

Interview schedule

The aim of the present study was to explore the range of changes in dietary behaviour. In line with this aim the first author (a 44-year-old white British/Polish female researcher, of normal weight) asked three initial questions: 'Please, describe your current diet: what do you have for breakfast, lunch and dinner?'; 'Can you tell me what you had for breakfast, lunch and dinner as a child?—You may choose any period in your childhood that you remember well'; 'Can you tell me, how did this change happen?' The participants' answers always

Table 1. Demographic information about participants

Name	Sex	Age	Occupation	Ethnicity	Self-perceived weight	Marital status
Cecil	M	83	Retired doctor	White English	Normal	Widower
Daniel	M	32	Hair stylist	White English	Normal	Single
Fred	M	44	Gardner	White English	Underweight	Divorced
Heli	F	35	Behavioural therapist	White European	Normal	Married
Huw	M	22	Lifeguard	White Welsh	Normal	Single
Janice	F	45	Special needs assistant (ex-nurse)	White English	Normal	Married
Jessica	F	25	Beauty salon owner	White Welsh	Normal	Married
Liz	F	50	Personal assistant	White Scottish	Normal	Divorced
Louis	M	24	Self-employed	White English	Normal	Partnership
Maria	F	23	Receptionist	White European	Normal	Partnership
Mariam	F	54	Florist	Iranian	Overweight	Divorced
Nick	M	38	IT system developer (ex-fireman)	White English	Normal	Married
Nigel	M	32	Taxi driver	White English	Overweight	Single
Paul	M	44	Cabin crew	White English	Overweight	Gay
Ray	M	41	Electrician	White English	Overweight	Married
Saras	F	42	Housewife	South-East Asian	Normal	Married
Sherri	F	43	Maths teacher	White American	Normal	Married
Tom	M	22	Student	White Welsh	Normal	Single
Tracy	F	27	Hair stylist	White Welsh	Normal	Single
Valerie	F	63	Piano teacher	White English	Underweight	Married

revealed some dietary changes which the researcher investigated by asking more specific questions (e.g. 'I can see already one big change in your diet, for example when you were a child you used to eat cereal for breakfast while now you have a Smoothie and fruit. How did this happen?'). Other questions and prompts that followed were individually tailored to facilitate the unfolding of an account of the participants' unique experience of dietary change.

Analysis

Interpretative Phenomenological Analysis (IPA; Smith, Jarman, & Osborn, 1999) was selected as an appropriate means for exploring the individual's experiences on the topic of diet change in preference to grounded theory or discourse analysis, as it offered the researchers more scope for creativity in investigation and interpretation of the studied phenomena. IPA is concerned with the exploration of personal perception of events; the way individuals make sense of their experiences and with the meaning that these experiences hold for them. This process cannot be accessed directly or analysed objectively as it is assumed that the researchers cannot record and interpret the material generated by a participant without bringing into

the process their own conceptions. The choice of the topic in itself has to be acknowledged as reflecting the authors' personal interests, existing knowledge and specific assumptions. The first author had been noting down her own thoughts and observations as they occurred during the study process, especially during the transcription of the interviews. The emergent categories were noted on transcripts. This process was running parallel to the interviewing and transcribing. The first draft of the 'story of diet change' was made after the 10th interview. It consisted of a model of categories grouped within more general themes. Each category had participants' names and specific coding noted next to them to facilitate the finding of relevant quotes within the interview transcripts. Initially, the first author proposed a model based on a 'car driving' metaphor, with participants either being in the 'driving seat' (consciously initiating and maintaining dietary change) or in the 'passenger seat' (experiencing dietary change without intention and/or awareness of it happening). This metaphor proved inadequate in accommodating all the new evidence from subsequent interviews and consequently a more theoretical approach was developed and used in the final analysis. The development of the model of

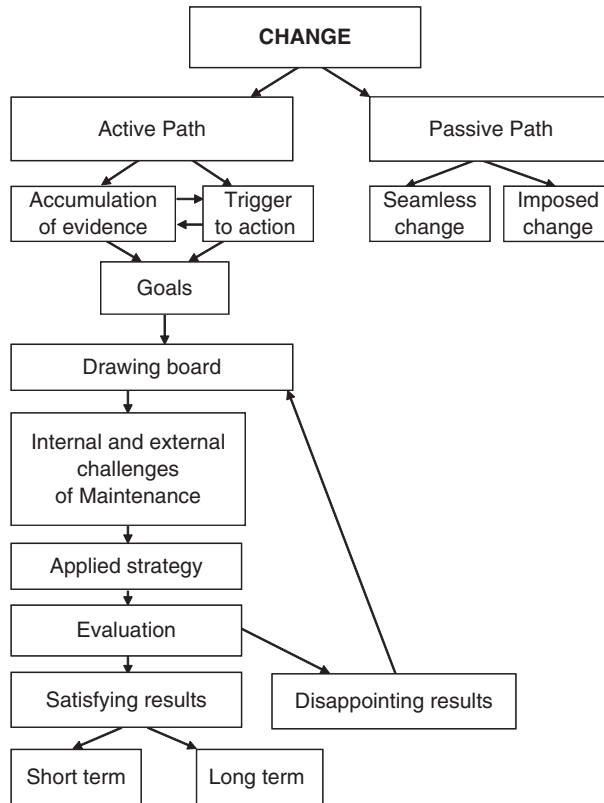


Figure 1. The interpretation of the participants' narratives of diet changes in a model of emergent themes.

themes relied on the continuous process of monitoring whether the authors' interpretation was grounded in evidence, which was done by referring back to the interviews' transcripts. The final version aimed to integrate all contributions into a cohesive yet richly detailed account of the participants' diverse experiences. The integrative nature of the analysis meant that the researchers worked together on the development of a model of themes that could incorporate each and every category that emerged during the work on individual transcripts.

Results and discussion

Analysis suggested that changes in diet, as experienced by the participants, occur along an *active* and/or a *passive path*. These terms indicate an individual's involvement in the process of change. The diet changes that occur along an active path required the participant's active engagement in their initiation and

maintenance. Two active path mechanisms of change emerged from the data: *accumulation of evidence* and *trigger to act*. Diet changes also seemed to occur along a passive path—without the participant's active involvement. Two passive path mechanisms emerged: *seamless* and *imposed*. These changes were accepted and seemed to occur without the participants being aware of them—they did not pose a threat to their physical well-being or self-identity. These different paths are illustrated in Fig. 1.

Active path

Accumulation of evidence Along the active path, the diet changes that seemed to occur were generated by the participants who became dissatisfied as they observed an *accumulation of evidence* that was destabilizing their well-being and their self-perception. This could have manifested itself as an increase in weight, some health problems or a decrease in fitness:

And I had a lot of Kentucky Fried Chicken, burgers, fast food, I was eating a lot of fast food and I just said 'no, you've got to cut it out' because I did put the pounds on and I did look in the mirror and 'ooh, I don't like myself'. (Paul)

The accumulation of evidence could have also related to the methods of animal husbandry: 'Poor animals they were treated as things really. ... I just couldn't bear watching it' (Valerie).

Some participants observed worrying signs of their increasing weight and decreasing fitness, which were linked with their self-image. They may have experienced an increase in health problems, or become distressed by the knowledge and images of animal suffering. This 'accumulation of evidence' mounted up to the point that they become ready for action. The stage theories would encapsulate this process within the contemplation and preparation stages (Prochaska & DiClemente, 1982) while Scheier and Carver's (2003) model of self-regulation would explain that an input function (the perception of increased weight) was being matched with reference value (an ideal weight). Upon the comparison of input and reference value, a discrepancy was discovered which made participants increasingly uncomfortable with their current state and, in order to improve their self-perception, they had to generate action.

Trigger to action This process of the accumulation of evidence seemed to sensitize the participants to the point of becoming ready for action. Some participants described how an internal thought process was a trigger for action:

You get to the point when you think to yourself: 'I've had enough of this now, I can't keep doing this' and if I had a couple of days when I was a bit unhealthy I get annoyed with myself. When I get annoyed with myself I think: 'right, I've got to do something about it'. (Nigel)

Participants also reported that an external event such as the result of a medical examination or the impact of a shocking visual stimulus made them change their behaviour:

I watched a programme on television that showed me that if I had a packet of crisps every day, at the end of a year it's the equivalent of drinking five litres of oil and I've never seen it like that and I banned crisps, they are not allowed in the house. (Ray)

One participant reported that an observation made by a friend led to a change of habit in taking sugar

with coffee but this time it seemed that a reverse order of events led to action with a trigger in the form of an observation made by another person preceding the accumulation of evidence:

It didn't bother me, but someone pointed it out and he pointed it out several times like we'll be sitting with our coffee and a cigarette because we were stressed out and our friend started noticing it. 'You went through another bag of sugar and it's been only a couple of days!' And sometimes you need someone to tell you. (Louis)

And so, the participants seemed to be spurred to action by a variety of triggers. The most frequently described was the internal trigger of thinking 'enough is enough'. Other triggers seemed to be external and included shocking visual stimuli and the results of medical examinations. Louis' decision to take action was spurred by his friend's observations, which served as a wake-up call. Louis became aware that his behaviour threatened his self-perception: 'I took note of it and I thought I am not going to be eating that much of sugar on a daily basis.' The accumulation of evidence that followed confirmed the threat and only a change in behaviour could restore the balance. The stage theories and self-regulatory framework describe and explain in detail the processes that precede the moment of action (contemplation, preparation stage, Prochaska & DiClemente, 1982; discrepancy enlarging or reducing loop, Scheier & Carver, 2003), as well as the processes involved in maintenance and relapse, but the notion of a trigger has not been addressed adequately in the literature and it remains poorly understood.

Goals The participants who were keen on restoring their self-image described how they set themselves goals such as to lose weight, improve their health and fitness or becoming vegetarian:

And then going out with your friends and starting going to town clubbing—you want a nice dress on a weekend, you don't want size 16 black dress, you want size 10 or 12. So if I wanted to mix in and blend in I needed to lose weight. (Jessica)

The concept of goals had been central to self-regulation theories (e.g. Scheier & Carver, 2003). Participants seemed to set themselves 'approach goals' (to improve health and fitness) or 'avoidance goals' (not to eat meat). Additionally, they seemed to have a sense that some goals were more important than others: self-image was a higher goal in this

hierarchy than losing weight, but in order to look good one had to lose weight.

Drawing board Once the goals were set, the participants needed to plan their actions on a *drawing board*. First, they looked for inspiration in books, magazines or on the Internet. Some participants reported that they learnt through conversations with their clients, while others sought expert advice: 'And she is dietician and she said you should have at least one litre of flat, not fizzy, water a day to aid your liver repairing itself. And her being dietician I believe what she tells me is true' (Ray).

In the quest to achieve their goals, the participants looked for inspiration and/or help from a combination of sources. According to stage theories (e.g. Prochaska & DiClemente, 1982) this activity is still a part of the preparation stage before action is taken. Yet evidence from the present study places it after *trigger* and *goal setting*. It seems that *accumulation of evidence*, *trigger* and *goal setting* as well as *drawing board* are all part of the preparation stage before any action takes place. The trigger does not lead to immediate physical action (e.g. 'reduction in portion sizes')—a certain amount of mental preparation has to take place beforehand. Participants described how they gather information about possible courses of action and how they make choices. The choice of an option may have seemed realistic at the time but often would prove impossible to maintain, mainly because of strong food preferences. However, in the hope that a chosen course of action will be easy to maintain, the participants described how they kept trying different options, such as cutting out an item from their diet, adding an item, finding an alternative, cutting down on consumption or following a particular diet: 'I went on a diet of my own design which consisted almost exclusively of cabbage—boiled cabbage with a little meat now and again' (Cecil).

The participants seemed to choose a course of action in the hope that it would suit them and they would be able to maintain it. This is in line with health action process approach (HAPA) (Schwartz, 1992), that redefines the preparation stage in terms of an individual's motivation. According to HAPA, the preparation stage consists of *perceived self-efficacy*, *outcome expectancies* and *threat appraisal/risk perception*. The results of the present study demonstrate that there is no well-defined cut-off point between contemplation, preparation and action stages, but it is a fluid and ongoing

process where a person may oscillate between preparation and action in order to find the easiest way to achieve a goal.

Maintenance of diet change—internal and external challenges facing the individual

The majority of the participants described the difficulties in maintaining a chosen course of action. The challenges they had to face seemed to be both *internal* and *external*. The internal challenges included the ability to solve problems, to exert will-power and to use available time efficiently. The participants appeared to be influenced by their sense of self-efficacy and their strong food preferences:

I read an article that a lot of vegetarians lack Vitamin B12 and that's when I started eating Marmite, I hated Marmite but I trained myself to eat Marmite because it has a lot of Vitamin B12 in it so that's why I have Marmite every day if I can. (Janice)

The external challenges described by participants were equally demanding and included managing the disturbance in a newly developed routine caused by festive occasions, holidays, change of school or job:

It's up in the air at the moment cause I do college a week on, work a week on so it's very hard to control my diet but at the moment I'm trying the maintain the weight I've got and not increase it and not decrease it too much. (Nigel)

The challenges of maintenance in health behaviour change were not given adequate attention in stage theories or in self-regulation models. However, a model developed by Baumeister and colleagues (Baumeister & Vohs, 2004) proposes that self-regulation is a personal resource similar to 'a muscle'. The muscle has limited strength and endurance qualities. If used excessively it gets exhausted which leads to ego-depletion. It can be trained to do more but it needs rest to restore its strength (Muraven et al., 1999). This approach explains why some participants found it harder than others to maintain diet change—their personal resource may have been weak to begin with and/or not given sufficient rest when required. In the present study, each participant described how they applied different strategies to maintain a diet change—some more successful than others.

Applied strategy In order to overcome internal and external challenges in their pursuit of maintaining a diet, most of the participants described how they developed and applied various *strategies*, such

as calibrating control over their diet from rigid: 'I weigh myself every day which isn't a good thing ... I can weigh myself in the morning and at night sometimes' (Nigel) to flexible: 'I do have the odd takeaway even now, maybe some fish and chips or something like that once a month or maybe a kebab, not a lot—once a month just as a treat really' (Fred).

Other strategies mentioned by these participants included regulating the purchase and consumption of treats, regrouping after a lapse, establishing a regular pattern, fine-tuning their diet and proceeding in stages. The most troublesome was the management of treats and the strategy used most frequently by the majority of participants was to avoid buying treats and not having them in the house. The work of Mischel (e.g. 1974, 1981, 1996) on the delay of gratification focused on the issue of exerting control over one's behaviour. His work was the basis of an idea that human behaviour is governed by the *hot* and *cool system* (Metcalf & Mischel, 1999). Hot system refers to amygdala-based emotional processing (reflexive; 'fight or flight') while cool system refers to hippocampus-based cognitive processing (reflective). The cool system gets developed as we get older and is put to use controlling the hot system. The participants demonstrated how they use the cool system to exert control (e.g. not buying and not having the treats in the house), as a strategy to suppress the hot system that craves the treats. Other strategies in diet maintenance include regrouping after a lapse and keeping a routine. What transpires from the participants' narratives is that maintenance, contrary to how Marlatt (1985) described it, is not a final destination following a diet change. Instead, maintenance should be seen as a process that includes the management of lapses and relapses. Curry and McBride (1994) recommend that for the purpose of future interventions, the notion of *relapse prevention* should be superseded by *relapse management*. Indeed, analysis of participants' descriptions of some of the strategies they used to maintain diet change is congruent with the view of relapse management.

Evaluation Most of the participants described the process of *evaluation* of their efforts in achieving goals of weight loss, of being fitter or of overall health enhancement. It emerged from the accounts of some participants that the perception of disappointing results meant going back to the *drawing board*. Some were keen to look for inspiration in choosing a

different option that they hoped would work better for them: 'Last year because I was getting married I thought: "well I was doing Slimming World for like three years and I've been up and down, up and down so I am going to try something different"' (Jessica).

Others expressed acceptance of their inability to change and the inevitability of disengaging from their initial goal:

I know I shouldn't drink tea or coffee as much as I do but I just do not like cold drinks so I stick to the decaffeinated. I don't like herbal teas—I have tried them many times but I just can't get on with them so I am not even going to try to change that. (Valerie)

Others still accepted that they can't achieve satisfactory results at this point in their lives, but instead of disengaging from the goal they have decided to postpone the realization until they feel more motivated. The participants described how they are rewarded for their efforts by short-term satisfying results, such as weight loss, increased energy and positive feedback, which they receive from the people they come in contact with. But the greatest reward appeared to have come when a desired diet change became a habit—done routinely and with minimal effort: 'after a time it becomes a habit and your body stops needing the extra calories and your body stops kind of liking certain tastes—you lose the taste for certain things, for example cream cakes' (Janice).

A few participants described that the deepest satisfaction would come from extinguishing a bad habit, improving their self-image and gaining a new and valued aspect of self-identity:

I enjoy the fact that I know what I am gonna have every day it's decided and that's that. I enjoy the process, the routine and I got to the stage that I enjoy preparing food and I am quick at that, it's not really an effort for me any more. (Maria)

But the ultimate prize that came with a successful and long-term diet change appeared to be the achieved sense of control and mastery over one's diet and by implication over one's life and well-being:

I've arrived—I don't want to get any slimmer because I am good weight now and I've got so much energy for my age—it's unbelievable. Friends can't believe how much energy I've got. My kids can't believe how fast I can run for my age ... It makes you think in your mind how good it was what I've done to myself to achieve it. (Fred)

Most of the participants described how they evaluated their efforts in diet maintenance. These were assessed as disappointing or satisfying. The reaction to a disappointing result was closely linked with the ability to disengage from a goal, which has been discussed within the self-regulation model of behaviour (Scheier & Carver, 2003). Wrosch, Scheier, Carver and Schultz (2003) argue that goal disengagement is an adaptive part of self-regulation where successful individuals develop the ability to judge which goals are attainable and which goals need to be abandoned before the available resources (i.e. given limited lifespan, specific personal attributes, limited socioeconomic opportunities) are spent in vain. Wrosch et al. (2003) distinguish two facets of goal disengagement: withdrawal of effort and relinquishment of commitment. The maladaptive goal disengagement would show the withdrawal of effort with retention of commitment to a goal or giving up a goal commitment with no new goal in sight. Both scenarios can result in futility and distress. The adaptive goal disengagement on the other hand includes scaling back, choosing an alternative path to a high order goal or forming a new goal. The participants in the present study, by describing their varied ways of maintaining and evaluating their efforts of diet change, demonstrated adaptive goal disengagement strategies.

The tension between holding on and letting go is difficult to manage (Pyszczynski & Greenberg, 1992), yet successful management can bring both short-term and long-term benefits. Participants described their successful efforts in goal attainment and evaluated them as highly satisfying—the short-term rewards included loss of weight, increase in energy and positive feedback. The long-term rewards included the acquisition of a healthy habit, freedom from a bad habit, enhancement of self-image and self-efficacy and the development of a new and valued aspect of self. Most importantly, the long-term reward that a successful diet change may bring was the personal sense of mastery and feeling of control over one's life. These findings are congruent with the self-regulation models that propose the hierarchical structure of goals (e.g. Maes, Sweeey, & Gebhardt, 1998; Scheier & Carver, 2003; Sheldon & Kasser, 1995). The lower ranking goals are essential in the achievement of higher order goals: diet change may be imperative to weight loss, which is a lower ranking goal but together with fitness it leads to a higher goal—good physical self-image, which in

turn leads to the still higher goal of being healthy and attractive. If this goal is successfully maintained, it leads to an ultimate achievement linked with the preservation and enhancement of self-identity through acquired mastery and control. Therefore some participants described diet changes that seem to have occurred along an active path and involved processes such as accumulation of evidence, trigger to action, goal pursuit, challenges of maintenance, application of strategies and evaluation. This is in line with much of the behaviour change literature and illustrates how changes in diet, which are maintained in the longer term require conscious effort to initiate and maintain. However, whereas previous research has tended to focus on specific cognitive processes and located them within a particular model, the results from this study highlight the role of many processes which transcend any one particular theoretical approach. Additionally, the theoretical frameworks discussed earlier omit the aspect of behaviour change that happens without conscious effort. This study reveals that such changes do take place and describes them in the following section.

Passive path

In contrast to the active process described above, the majority of participants described diet changes that had occurred without their active engagement. It is as if these changes happened to them in such a way that although they may have been aware that a diet change had taken place—they had not initiated the change, but accepted it as it did not undermine their self-identity. These changes could be interpreted as *seamless* and *imposed*. The seamless changes would happen gradually over a long period of time and were linked with ageing, financial circumstances, nutritional Zeitgeist or tuning in to the seasons with their variety and availability of produce. The imposed changes would happen when a change of diet was dictated by circumstances such as change of a job or school, moving in with a partner/spouse, moving to another country and living in the times of war.

Seamless changes The seamless changes would happen gradually over a long period of time. All 20 participants described how, as they got older, their food preferences changed: they developed liking for various foods (e.g. salads, broccoli, garlic or blue cheese). The most frequently mentioned change was losing the desire to consume sweet tasting foods:

In childhood it was always the thing on the way home from school to buy a bottle of pop and some sweets but I grew out of it. ... I'd have chocolate occasionally but I don't buy it as much and I don't have such a sweet tooth as I used to. (Tom)

The older participants remarked how their diet is different from that of their parents. Diet changes that happen across generations mark the change in beliefs of what constitutes a healthy diet—what used to be the norm several decades ago is perceived as unhealthy now. These changes can be understood in terms of *nutritional Zeitgeist*:

I think the main thing is that when we were younger it was kind of traditional to cook with a lot of fat like lard and she [the participant's mother] doesn't even use this kind of stuff any more, she would use olive oil or different kind of margarine. (Janice)

Some participants described how the change in financial circumstances influenced their dietary habits as well as availability of a bigger variety of produce: 'I think it was availability—you see that you've got lots more kind of salads—prewashed and packed' (Liz).

The changes described above appeared to have happened in a seamless fashion—gradually, over a long period of time and even when individuals were aware of them they accepted them as part of their evolving self-identity. These changes did not seem to have a destabilizing effect on the participants' self-identity. Interestingly, seamless changes were described by all 20 participants.

Imposed changes Some participants described that their diet, to a certain extent, was dictated by their changing life circumstances, for example when it was *imposed* by the food that was provided at their school or job:

When I left home at 16 to become a chef, my diet did change because of the environment I found myself in. It didn't change because I wanted to change, it changed because I was now working in a hotel so I would have to eat whatever we were offering to the customer so again it was dictated to me what I ate in certain amount because that's what was there. (Ray)

Others described how a significant event in their lives, such as moving in with a spouse or partner, affected their diet in a profound way:

I also remember clearly when I was 22–23 I lived with a girlfriend who was vegetarian, she

didn't like vegetables and so she was the most terrible eater in the world, she didn't like most things, she liked chips. ... I did go through two or three years living with her when I ended up eating rubbish. (Daniel)

A few participants declared that their diet inevitably changed when they moved to the UK:

When I first came here, 14 years ago, I still looked for rice and I still remember how happy I was when I saw the rice in the shop. But I lived here long enough to gradually change and become more flexible. (Saras)

The narratives in the present study suggest that participants did not actively generate all diet changes. These changes occurred along a passive path: gradually, over a long period of time. They might have happened in a seamless fashion, without the participants being aware of them or they might have been imposed by evolving life circumstances. The participants seemed to have been conscious of imposed changes but not of seamless changes, yet accepting of both as a part of their evolving self-identity. The theme of passive path changes supports existing evidence relating to habits; in particular to the notion that habits form over a long period of time and once learned they require only a minimal and sporadic thought to initiate them (Wood et al, 2002). However, the results from the present study suggest that some habits don't seem to be deeply entrenched but are easily and effortlessly superseded by the development of different habits and, in addition, new habits can be learned without effort and conscious engagement. In this process, although the change occurs, no effort is required to maintain the change.

Conclusion

The qualitative analysis of the participants' accounts suggested that diet changes occur along both passive and active paths with four underlying mechanisms: accumulation of evidence; trigger to action; seamless change; and imposed change. The changes along the active path seemed to occur when the very essence of one's well-being and self-image was endangered in the presence of the accumulation of worrying evidence. The participants, spurred into action by a trigger, described how they set themselves goals to regain physical and psychological equilibrium. The passive path changes: seamless and imposed, appeared to happen gradually over a longer period of time. They did not require the participants actively to

generate them. Often these changes did not seem conscious yet in any case they were accepted as they did not threaten physical well-being or the sense of one's self-identity.

The present study's emergent themes within the active path support theories that conceptualize behaviour change in terms of self-regulation, as willpower and, to some extent, as stages of change (Transtheoretical model—TM, Prochaska & DiClemente, 1982). The notion of *accumulation of evidence*, *setting goals* and *drawing board* are evocative of the stages of contemplation, preparation and action in TM. The notion of *internal and external challenges* and *applied strategy* support the maintenance and relapse stages in TM but they are better understood using Baumeister's theory of willpower (e.g. Baumeister, 2000) that uses the metaphor of a muscle to explain the processes involved in the maintenance of behaviour. The muscle can be trained to become stronger and more resilient. With time and through practice the behaviour becomes easier to perform. The study's themes also support the theory of self-regulation (e.g. Carver & Scheier, 1998) in the area of goal setting, feedback/evaluation of effort and goal disengagement. What the current literature does not address adequately is the notion of *trigger*—the ultimate yet elusive mechanism of change. This is not for the lack of trying: the *implementation-intention gap* has been studied with great persistence (e.g. Gollwitzer, 1999) and prominently within the context and theory of reasoned action (Fishbein & Ajzen, 1975) and the theory of planned behaviour (Ajzen, 1991). However, the essence of the link between intention and action remains poorly understood.

The emergent themes also indicate that dietary changes can happen along the passive path—effortlessly and unintentionally. Sociological literature offers the closest equivalent to imposed and seamless diet changes in the concepts of *life trajectories* and *transitions*, where food choices are governed by changing personal circumstances (e.g. getting married, getting older), external environment and the development of personal values and beliefs about the health status of food (Devine, Connors, Bisogni, & Sobal, 1998; Devine, Sobal, Bisogni, & Connors, 1999). These studies do not distinguish between active and passive path changes and interpret changes through the prism of constructivist perspective—situated within societal and cultural context. In contrast, the present study has situated dietary change at an individual's level—perceived and experienced deep

within a person. Additionally, the themes revealed that alongside the active path changes, when the participants had to exert a degree of control, other changes happened (along a passive path) without intention and effort. These changes seemed fluid, coming and going without turbulence and without any detrimental effect on an individual's equilibrium. The participants appeared to accept these changes as they did not pose a threat to their self-concept. The precise mechanisms of such changes with reference to dietary behaviour have not been studied as research had focused on changes that have been initiated in a conscious way. This study revealed that in the lives of the 20 interviewed participants, diet changes happened frequently and at least some of them were not problematic as long as they remained congruent with self-concept. Interestingly, the passive path changes cannot be fully explained in terms of acquisition of habits. Although they do have some elements of habit, such as repetition and effortlessness in performing, for a habit to form a conscious effort is required to initiate it and repeat it enough times before the action becomes effortless and automatic. Or, as in classical conditioning (Rescorla, 1996), the key element of behaviour change is a particular and stable cue in the environment. In contrast, the changes along the passive path did not seem to require effort in initiating and repeating and may or may not have stayed deeply entrenched. These changes had to be triggered somehow, possibly by an external cue but they were not necessarily perpetuated by the presence of a stable cue in the environment. The participants' accounts highlighted the prominence of processes that are a function of ageing (e.g. 'losing sweet tooth' or beginning to like blue cheese). These dietary changes also seemed to happen without participants having intentions to change.

There are a number of limitations that need to be considered. Although some studies using IPA include a very small and homogenous sample of between one and seven participants (e.g. Robson, 2002; Senior, Smith, Michie, & Marteau, 2002; Smith, 1999), the current study used a larger sample with a diverse demographic background in order to explore the different experiences associated with food consumption and dietary change. The use of a larger sample in IPA methodology is however not unusual (i.e. 22 participants in Swift & Wilson, 2001; 35 participants in Murray, 2004). While this approach could be criticized for compromising the depth of the analysis, it added an integrative element as more suitable for

studying the phenomenon of dietary change. Despite efforts to include participants from diverse social backgrounds, the representativeness of the study sample to the general population has to be observed with caution, as the village in the South-East of England as well as the city of Cardiff undoubtedly emanate their own specificity.

Another limitation of the study's findings is rooted in the very nature of the IPA method, which takes participants' accounts at face value. It is possible that these accounts would have changed if participants were interviewed by a different researcher or in different settings, and that the emergent themes would have been different.

To conclude, the present study explored the phenomenon of dietary change in the lives of 20 participants whose narratives suggested that dietary change occurred along both an active and passive path with four underlying mechanisms: accumulation of evidence; trigger to action; seamless change; and imposed change. This study contributed to the theory of behaviour change by interpreting diet changes as occurring both intentionally and unintentionally and by distinguishing four mechanisms of dietary change. In this way it integrated the dual nature of behaviour change but also highlighted the area of unintentional change (passive path) as under researched and little understood. It is possible that this study, by demonstrating that individuals were able to change their diet in an effortless way, is going to open up a new route aimed at influencing people to improve their diets. To take the present study's findings further, an investigation is needed to document the prevalence of dietary changes within the active and passive path among a larger population sample and through a quantitative method.

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Author biographies

KATARZYNA CHAPMAN is working under supervision of Prof. Jane Ogden towards submitting her PhD titled: 'Investigation into the mechanisms of dietary change'. She published her Masters dissertation in *Vulnerable Children and Youth Studies* titled: 'A qualitative study exploring how mothers manage their teenage children's diets'.

JANE OGDEN is Professor in Health Psychology at the University of Surrey. She has published over 100 papers and four books and her research focuses on aspects of eating behaviour and obesity management, issues relating to women's health and the role of language in the consultation.
