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Responsiveness to healthy advertisements in adults: An experiment assessing beyond brand snack selection and the impact of restrained eating

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ABSTRACT

The objective of this study was to explore the impact of different advertising messages on adults' snack choice. Eighty participants (18–24 years old) were offered the choice between two snack packs following exposure to one of three advertising conditions. The snack packs contained either healthy or high fat, sugar or salt (HFSS) foods. Participants were exposed to commercials containing either non-food products, healthy food products or HFSS food products and their subsequent choice of snack pack was recorded. The Dutch Eating Behaviour Questionnaire (DEBQ) was used to assess the impact of external, restrained and emotional eating behaviour on snack pack selection following exposure to advertisements. The majority of unrestrained participants preferentially choose the HFSS snack pack irrespective of advertisement condition. In contrast, high restrained individuals exposed to the healthy eating advertisement condition preferentially selected the healthy snack pack while those in other advertisement conditions refused to take either snack pack. The healthy eating message, when distributed through mass media, resonated with restrained eaters only. Exposure to healthy food adverts provoked restrained eaters into choosing a snack pack; while exposure to other messages results in restrained eaters refusing to take any foods.

1. Introduction

Television is a powerful method of mass communication and, along with the internet, is the primary vehicle to deliver commercial food and drink advertising to a mass audience (Boyland, Harrold, Kirkham, & Halford, 2011; Kelly et al., 2010). As a result, exposure to food advertisements has been proposed as an important factor in influencing short-term food intake (Boyland et al., 2016). Unsurprisingly, a number of narrative, systematic and meta-analytic reviews have concluded that food advertising leads to a greater preference for, and intake of, the products advertised. What is interesting is that these same advertisements also increase consumption of similar products in the same category. (e.g. Batada, Seitz, Wootan, & Story, 2008; Boyland et al., 2016; Hastings et al., 2003; Sixsmith & Furnham, 2010). This beyond-brand phenomenon of the television advertisement suggests that when an individual is exposed to commercials it primes the desire to eat all foods within the same category (Bargh, 2006; Halford, Boyland, Hughes, Oliveira, & Dovey, 2007; 2008). Despite regulations to restrict the advertising for HFSS foods in many developed countries, people are still exposed to significantly more advertisements for HFSS foods than products that promote high nutrient or low calorie alternatives (Cairns, Angus, Hastings, & Caraher, 2013). This presents a significant problem for health professionals attempting to instil healthy eating programmes at the population level.

Due to the overwhelming presence of HFSS foods in media advertising, little research has focused on advertising nutritious foods with a healthy eating narrative and how these subsequently impact on the viewers' eating behaviours. Exposure to healthy food advertising results in small effect size increases in habitual fruit and vegetable consumption (Liaukonyte, Rickard, Kaiser, Okrent, & Richards, 2012; Pollard et al., 2008). Two competing perspectives

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have been offered concerning how the change in behaviour following exposure to healthy food advertisements operates. The first perspective suggests a simple manipulation effect, whereby the healthy food advertisement operates by directly increasing positive attitudes towards healthy eating habits within the viewer(s) (Dixon, Scully, Wakefield, White, & Crawford, 2007). The alternative perspective extends from the work of Bruner (1957) and suggests that the healthy advertisement achieves behaviour change through goal directed attention (Brunner, & Siegrist, 2012). Within this socio-cognitive domain, the television advertisement only reaches those people who have already instilled the healthy eating narrative.

The limited data exploring the impact of healthy advertisements appears to support both an attitude change and goal directed attention interpretation. Studies exploring attitude change following exposure to health-related campaigns have found small to moderate effects in line with the changes in diet (Emery et al., 2012). Specific goal-directed motivations following exposure to healthy advertisements have also been observed in children. Children with low levels of food neophobia decrease consumption of the HFSS items at a subsequent snack opportunity, but do not shift to healthier options (Dovey, Taylor, Stow, Boyland, & Halford, 2011). Overall, susceptibility to changes in food intake in children following exposure to media advertisements is known to be dependent on other characteristics such as weight status (Halford et al., 2008) and impulsivity (Folkvard, Anschutz, Nederkoorn, Westerik, & Buijzen, 2014). Similar goal-directed motivated observations in response to television advertisements have not been identified in adults (Anschutz, Engels, Becker, & van Strien, 2009). This has led some authors to conclude that older age groups are not susceptible to changes in eating behaviour following exposure to television advertisements (Boyland et al., 2016). However, when paradigms include food choice (Harris, Bargh, & Brownell, 2009) or offers foods that are similar to those advertised (van Strien, Herman, & Anschutz, 2012) subsequent changes in eating behaviour have been observed in adults.

The measurement of total caloric intake following exposure to food advertisements fails to consider the purpose of the food advertisement. The intention of a food advertisement is to familiarise the viewer with the product and help them better achieve their purchasing objectives (Resnik & Stern, 1977). In children, increased caloric intake following exposure to food advertisements may operate in a similar manner to any other external food cue. This beyond brand effect observed in children (Halford et al., 2007; 2008) may stem from children's lack of understanding about the intention of the food advertisement, leading to a global/category-specific increase in food intake following exposure to television programming (Hastings et al., 2003). In adults who are aware of an advertisements intention, observed changes or reactivity to exposure may only occur when the core advertisement message and the viewer's current goals are aligned (see Bargh, 2006; Papies, 2016 for reviews). Therefore, it is reasonable to suggest that factors such as cognitive restraint, emotional eating and external eating may have a significant role in responsiveness to healthy advertisements.

Focus on the negative impact of food advertisement has negated the potential impact that this medium may have for positive behaviour change. Further investigation regarding the impact of healthy food advertisement on food choice is warranted. The aim of the current paper was to investigate the impact of food advertisements (both healthier and HFSS) on eating behaviour in adults. We hypothesized that participants would be more likely to choose healthy snacks following the congruent food advertisements and are expected to choose HFSS snacks after exposure to HFSS food adverts. A second aim was to investigate the role of individual differences in eating-related characteristics and their interaction with food advertisements on subsequent food choice. We believed that individual differences as measured by high/low external, restraint and emotional eating status will have an impact on participants' food choice after exposure to advertisements.

2. Method

2.1. Participants

A sample of eighty participants (38 female and 42 male) aged 18–24 years (M = 20.86, SD = 1.33) were recruited through opportunity sampling around a London university campus and a West London Community Centre. The vast majority of the sample were either staff or students at the university and had a healthy body mass index (BMI) with 63 participants falling into the lean category and 17 in the overweight category (M = 23.19, SD = 3.19). BMI was not a significant factor in snack pack selection ($\chi^2(3) = 5.23$; $p = 0.12$) and did not interact with the three DEBQ subscales (all $p > 0.1$). Participants were randomly allocated to the three advertisement conditions. Twenty-five participants were exposed to advertisements for HFSS food, 26 participants were exposed to the healthy food advertisements and 29 participants were exposed to non-food advertisements (which did not contain any references to food). The only exclusion criteria for the study were individuals who reported any form of food allergy or subsequently reported not liking any of the foods in either of the snack packs.

3. Materials

The current experiment was given full ethical approval from the Brunel University London School of Life Sciences ethics board. A between-subject design was used in this study, with the dependent variable of 'snack pack choice' used to measure behaviour change. Participants were exposed to one of three advertisement types (HFSS, healthy, or neutral/non-food products). Eating-specific individual differences of restraint, emotional and external eating were assessed through the Dutch Eating Behaviour Questionnaire (DEBQ) and acted as independent variables.

Snack Packs. Participants had a choice of two snack packs at the end of the experiment. One snack pack included nutritious (natural ingredient) food items such as a banana, an organic granola bar and dry fruit raisins. The HFSS snack pack consisted of 5 hero/celebration chocolates, a pack of ready salted Walker's crisps and a chocolate muffin. Previous studies have used snacks to assess food and calorie intake in adults and children following exposure to food advertisements (Halford, Gillespie, Brown, Pontin, & Dovey, 2004; Harris et al., 2009). The composition of products included in the study was determined through pilot testing. It was important that the foods in the healthy snack pack were perceived to be healthy by the potential participants and would constitute a suitable alternative to the HFSS. Although the final selection of the healthy snack packs contained food items that had high glycaemic indices, these were all considered natural food items in the pilot testing phase. In general, the public believe that foods low in fat, sugar and salt are healthy; with fat and/or calories being the principal decision-making criteria for what is considered healthy (Chen, Legrend, & Sloan, 2006; Kang, Jun, & Arendt, 2015). Therefore, the differentiating factor designating the snack pack as healthy or not was based on perceived fat content. The healthy snack pack contained foods low in fat/salt, while the HFSS snack pack comprised of foods high in fat/salt.

Television Stimuli/Advertisements. Eight well known adverts were imbedded into an episode of 'Friends' (VideoPad Video Editor Free version 4.23). The first condition contained advertisements for HFSS and two non-food advertisements these were: Dior J'adore