Australasian Marketing Journal 17 (2009) 238–246

Contents lists available at ScienceDirect

Australasian Marketing Journal

journal homepage: www.elsevier.com/locate/amj

Australian consumers' discernment of different sources of 'healthy eating' messages

Sandra C. Jones *, Linda Tapsell, Kelly L. Andrews, Peter Williams, Parri Gregory

University of Wollongong, Centre for Health Initiatives, Building 41 Room G04, Northfields Ave, Wollongong, NSW 2522, Australia

ARTICLE INFO

Keywords:
Healthy eating
Healthy eating campaigns
Consumers
Advertising
Credibility
CATI

ABSTRACT

This research investigates Australian consumers' understanding of healthy eating campaigns. A CATI survey was administered to 834 adults across Australia. Participants were asked about their own understanding of the term 'healthy eating', the credibility of different advertisers, who they believed should be responsible for healthy eating campaigns and who they trusted to do so. Results indicate that the majority of participants have a basic understanding of 'healthy eating'. Non-government organisations were viewed as being the most credible and best placed to develop and run healthy eating campaigns; and participants believed there is a need for monitoring healthy eating campaigns for truthfulness and accuracy. Given the significance of overweight and obesity levels in Australia, a collaborative approach between the health industry, the commercial food industry and the media and advertising sectors is required in the development and delivery of improved healthy eating messages to encourage better (sustained) food choices and as a result, improved nutritional status of the community.

1. Introduction

The delivery of health messages (health and nutrition information provided in advertising) is significant because of their potential to improve the health and wellbeing of the population. The act itself is observable, and as such can be the object of study in a critical social analysis. In this research we examine the delivery of messages directed at healthy eating. The contemporary social context in which this is conducted relates to the delivery of these messages by the food industry, which to some extent is governed food standards regulation (Hawkes, 2004; Food Standards Australia New Zealand, 2008). These standards are referenced to contemporary nutrition science (Tapsell, 2008), but the practice of delivering health messages by the food industry is not always congruent with regulations (Williams et al., 2006). This creates a dissonance, in this case, an inconsistency between public messages from food manufacturers and health authorities, in an environment where overweight and obesity are becoming increasingly prevalent (Diabetes Australia October, 2006), and industry is often seen as a guilty party (Nestle, 2003).

1.1. The impact of increasing obesity rates on the food industry

According to the World Health Organisation (2000), obesity is replacing more traditional public health concerns such as undernutrition and infectious diseases as one of the most significant contributors to ill health worldwide. Therefore, obesity is definitely on the Australian political agenda, and in many ways the food industry is seen to be largely to blame. A medical article, which was quoted on the front page of The Sydney Morning Herald (a major Australian newspaper) in January 2003 quoted:

> "The smoking epidemic in the Western World is waning; however a new fear should be the increasing prevalence of overweight and obesity in young adults which heralds another potentially preventable public health disaster" (Peteers et al., 2003).

The language of fear and disaster is being met with suggestions that the food industry is culpable. For example, it has been noted that consumers in the USA are supplied with twice as many calories per day as they require, and that in the context of competition and fierce marketing, '*gaining weight is good for business*' (Nestle, 2003). Advertised foods that promote excessive energy consumption significantly outweigh advertised foods which maintain healthy dietary consumption – and their marketing activities are also much greater, motivated by profit incentives (Swinburn, 2008). Public health advocates are seeking new strategies to address the problem, including calls for more restrictions on the activities of the food industry (Swinburn et al., 1999).

There have been calls for extra taxes on soft drinks and bans on candy machines in schools (Gao, 2002; King, 2002). Relationships between the food industry, health professionals, scientists and the consumer are also coming under scrutiny. In some places a sharp increase in complaints about fraudulent diet advertising has been observed (Bishop, 2001). Additionally, amidst a childhood

* Corresponding author. Tel.: +61 2 4221 4209; fax: +61 2 4221 3370.
E-mail addresses: sandraj@uow.edu.au (S.C. Jones), ltapsell@uow.edu.au (L. Tapsell), kellym@uow.edu.au (K.L. Andrews), peterw@uow.edu.au (P. Williams), parri_g@hotmail.com (P. Gregory).

1441-3582/$ - see front matter © 2009 Australian and New Zealand Marketing Academy. All rights reserved.
doi:10.1016/j.ausmj.2009.06.005

obesity epidemic, children are exposed to television food advertising in Australia promoting foods excessive in salt, fat and sugar and contributing to potential risk of many chronic diseases (Zuppa et al., 2003). Unfortunately this represents a social change in a declining relationship between consumers and food that is undesirable for both parties.

1.2. Food industry initiatives to promote healthy eating

The key players in the Australian food industry are placed, resolutely, within an expansive international market. Multinational food corporations (despite, or in addition to, maintaining a strong local presence with Australian head offices and executive directors) take pride in the marketing of identical products across international boundaries (e.g., the cartoon characters Shrek and Spongebob Squarepants are associated with children's breakfast cereal world wide) – and consumers are becoming more aware of their consumption decisions in a global context (Kell, 2007).

In 1997, the Subway sandwich chain launched a range of sandwiches containing less than 6 g of fat. Subway quickly consolidated its position as a healthy alternative to established fast food outlets, fuelled by their media campaign featuring university student Jared Fogel, who claimed that eating Subway sandwiches helped him lose over half his body weight, or 245 pounds (111 kg) (Luna, 2007).

What followed were amendments to fast food menus in Australia and world wide. In 2003, McDonald's introduced their new 'salads plus' menus as well as offered the choice of fruit bags in Happy Meals (Shoebridge, 2003). Burger King followed with salads and 'bunless' burgers and KFC began sales of roasted chicken products as healthier options (Walker, 2004). Even 7-Eleven stores around the world have recognised the increasing consumer demand for healthier choices with "healthy convenience" and other perishable foods accounting for 40% of sales in Japanese stores (Unknown, 2007). As pointed out by Thompson et al. (2000), "some (social change) initiatives are very clearly proactive whilst others have an element of reactivity" (p. 334). The increasing focus on 'healthy' food alternatives could be seen to be a social change brought about by the 'crisis' of increasing (childhood) obesity, as well as by the increasing pressure on food companies to do something to redress their contribution to the obesity problem (Jones, 2007).

Additionally, large food corporations such as Kellogg's, Sanitarium and Kraft have shifted the focus of their public relations campaigns to foster an image of corporate social responsibility and invested interest in public health nutrition. They widely advertise the benefits of their foods (Gotting, 2003) and, in the case of Kraft, have significantly reviewed policies on a range of issues including portion sizes and marketing to children (Mitchell and Shoebridge, 2003).

1.3. Consumer perceptions of credibility

Credibility can be defined as the perceived believability or trustworthiness of a particular entity to carry out its stated intentions (Herbig and Milewicz, 1995). Crucial to this is the entity's image or reputation, which can change over time. Herbig and Milewicz (1995:26) state that "credibility exists when one can confidently use past actions to predict future behaviour".

Lafferty and Goldsmith (1998) examined the impact of endorser and corporate credibility on consumer attitudes and purchase intentions in an experimental study. Four mock magazine advertisements (two high credibility versus two low credibility) were shown to 100 female marketing students to test hypotheses relative to consumer attitudes for high and low company, and spokesperson credibility toward both the advertisement and the brand. The results showed that high credibility of endorsers lead to positive consumer attitudes towards the product advertisement, the brand and also intentions to buy the product. However, a more powerful influence on purchase intentions was the extent of corporate credibility. They found that both corporate and endorser credibility seem to have an additive effect although the two factors are independent.

Another explicit example of this is the 1984 campaign by the American National Cancer Institute (NCI) and the Kellogg's company to promote the benefits of a high-fibre, low fat diet (Freimuth et al., 1988). In this case, Kellogg's (high corporate credibility) included the NCI's (high endorser credibility) cancer prevention message on their All-Bran™ product packaging and in all TV, magazine and newspaper advertising of the product. This was generally regarded as a successful campaign that positively influenced consumer knowledge and behaviour (Ippolito and Mathios, 1990). More recently, an Australian study reported on the impact of the National Heart Foundation's *Pick the Tick* program (high endorser credibility). Twelve Kellogg breakfast cereal products were reformulated with significant reductions in salt (average of 40%) which resulted in permanent changes to the food supply with positive public health outcomes (Williams et al., 2003). In this case, gaining the credibility of the endorsement (the Tick) was regarded as sufficiently important by Kellogg, to enhance the company's corporate credibility, that it drove major product reformulation.

1.4. Consumer scepticism

Central to the concept of credibility is the notion of trust and scepticism. Obermiller and Spangenberg (1998) define consumer scepticism as the tendency toward disbelief of the information presented in advertising claims. In a competitive market, the questioning nature of consumers can be seen to be a by-product of advertisers' efforts to persuade and influence consumers to buy their 'superior' product. Koslow (2000) discusses the issue of consumer scepticism in relation to being a necessary skill consumers require to protect themselves from advertisers' deceit. He argues though that perhaps consumer scepticism also does a disservice when confronted by truthful claims.

It has been shown in several studies that Australian consumers have a high degree of scepticism about nutrition claims on food products, with at least one third being uncertain whether they could trust them (Australia New Zealand Food Authority, 1996; Worsley and Scott, 2000; Donovan Research, 2001). The literature also supports the credibility of government or non-profit sources over commercial sources with many studies asserting that information set out by the latter is perceived as less believable than the aforementioned sources or, indeed, independent third parties (Graham et al., 1994; Ballentine, 2006).

2. Method

The aim of this study was to examine the responses of consumers in relation to their understanding of healthy eating and the credibility of healthy eating messages contained within campaigns and advertisements. If, as we assume, health messages delivered by the food industry are less well accepted by groups in society because this is seen as a conflict of interest and therefore inappropriate, the consequences of this action may be that they suffer reduced credibility among consumers and are perceived to require regulation by authorities. This could conceivably reduce the potential for positive social change from genuine efforts by the food industry to better inform the public and provide them with healthier food choices.

A Computer Assisted Telephone Interview (CATI) survey methodology was utilised with quota sampling used to ensure a repre-

sentative sample of metropolitan and non-metropolitan respondents from all eight Australian states and territories. Table 1 demonstrated that the CATI sample was consistent with the overall Australian population in terms of gender, age distribution, education level, and occupational status.

Participants were first asked to explain in their own words what "healthy eating" meant to them, with responses recorded verbatim. They were then asked to think about how they accessed information about healthy eating. Participants were then asked whether they remembered seeing any advertising campaigns "promoting the importance of eating healthy food, and promoting specific foods or types of foods as being healthy for you". The trustworthiness of a list of eight possible sources of healthy eating information were explored (using a 5-point Likert scale) and finally, participants were asked three questions about the credibility of advertisers (whether their aim was to inform consumers; whether they were generally truthful; whether they provide consumers with essential information) and who they thought should be responsible for developing and running healthy eating campaigns.

Respondents were also read a list of six organisations or authorities and were asked to rank them from 1 ('not at all suitable') to 5 ('very suitable') on a Likert scale. The organisations were: Primary food producer groups (e.g., Meat and Livestock Australia, Dairy Australia); Food manufacturers (e.g., Kellogg's, Nestle); Supermarkets (e.g., Coles, Woolworths); Fast-food retailers (e.g., McDonalds, Oporto's); the government (e.g., Department of Health and Ageing); Non-government health organisations (Heart Foundation, Cancer Council) and Research organisations (e.g., CSIRO or universities).

Ethics approval for the study was provided by the University of Wollongong's Human Research Ethics Committee.

3. Results

The survey respondents were 834 adults aged 18 and over (23.4% aged 18–34, 18.8% aged 35–44, 20.4% aged 45–54, 20.0% aged 55–64, and 17.4% aged 65 and over). Fifty-three percent of respondents were female; and 77.7% were born in Australia. Over half of the respondents (52.6%) had a post-secondary or trade qualification, 21.5% had completed five years of secondary school, and 24.2% less than five years of secondary school.

3.1. Definition of healthy eating

Responses determined three major themes relating to consumer understanding of 'healthy eating'; (1) eating a specific food; (2) eating foods with specific attributes and (3) limiting the consumption of certain foods. The most common responses were "eating vegetables and fresh fruit" (39.0%); "[having a] balanced diet" or "eating food from all five food groups" (32.1%); "eating foods low in fat, sugar and salt" (21.2%); and "eating nutritional or healthy foods" (15.9%), see Table 2 for more detail.

3.2. Sources of information about healthy eating

Respondents reported being primarily influenced by their doctor or health care provider (59.8% stated that they were 'somewhat' or 'strongly' affected by them); advertising by non-government organisations (53.7%); information on food packaging (47.6%); and their family and friends (40.7%). Conversely, they reported being least influenced by advertising by fast food restaurants (88.3% stated that this 'doesn't really' or 'doesn't at all' affect them); advertising by supermarkets (71.4%); and advertising by food manufacturers (64.8%) (see Table 3). Table 4 shows that the most commonly reported sources of information about healthy eating were books (15.7% stated that this is a source of information), magazines (13.5%), the internet (7.9%), and newspapers (6.1%). Common sense or upbringing was mentioned as an "information source" by 5.5% of respondents, doctors and other professionals by 5.4% and television programs by 4.2%. Just over one third (39.4%) reported that they do not use any other sources of information, and 1.9% that they did not know if they used other sources.

3.3. Recall and credibility of advertising

Very few respondents were able to spontaneously recall any specific advertisements relating to healthy eating – particularly advertisements from government or health organisations, with over half (60.7%) stating that they could not recall any such adver-

Table 1
Comparison between CATI sample and Australian population (2006 census data).

Demographic factor	% of Australian population	% of CATI sample
Gender		
Male	49.4	46.9
Female	50.6	53.1
Proportion in age bracket		
18–29 years old	20.9	16.7
30–49 years old	38.3	35.8
50–64 years old	23.3	30.2
65 years or older	17.5	17.4
Country of birth		
Australia	70.9	77.7
England	4.3	5.0
New Zealand	2.0	1.9
Highest level of education		
Some secondary	23.5	24.2
Completed high school certificate	20.3	21.5
Post-secondary	39.4	31.9
Occupation		
Professionals	19.8	19.7
Managers	13.2	13.8
Clerical or administrative	15.0	4.7
Blue collar semi skilled or unskilled	10.5	2.8

Table 2
Respondents' definitions of "healthy eating".

Definition	*N*	%
Eating vegetables and fresh fruit	325	39.0
Balanced diet/eating food from all five food groups	268	32.1
Eating foods low in fat, sugar and salt	177	21.2
Eating nutritional/healthy foods	133	15.9
Eating to stay healthy	76	9.1
Eating in moderation	72	8.6
Not eating junk food	70	8.4
Eating lean red meat	68	8.2
Not eating take-away food to frequently	42	5.0
Other	40	4.8
Limited processed foods	37	4.4
Eating fish	37	4.4
Minimum amount of meat	32	3.8
Eating grains and nuts	25	3.0
Eating fresh foods	24	2.9
Drinking plenty of water	21	2.5
Eating protein	19	2.3
Eating high-fibre foods	17	2.0
Low in carbohydrate	15	1.8
Limited alcohol	14	1.7
Eating dairy products	12	1.4
Don't know	8	1.0
Eating vitamins	6	0.7

Table 3
Respondents' reported influences on "healthy eating" (percentages).

	Doesn't affect me at all	Doesn't really affect me	Neutral	Affects me somewhat	Strongly affects me	Don't know
Food manufacturers	39.1	25.7	21.1	10.9	2.6	0.6
Supermarkets	44.7	26.7	18.0	8.3	1.8	0.5
Fast-food restaurants	70.9	17.4	5.3	3.2	3.0	0.2
Food packaging	16.2	14.3	21.8	28.3	19.3	0.1
Government	25.3	19.2	28.1	19.1	7.4	1.0
Non-government organisations	13.9	10.0	22.3	32.4	21.3	0.1
Doctor or health care provider	17.4	7.3	14.6	26.0	33.8	0.8
Family and friends	14.7	13.9	30.0	25.5	15.2	0.6

tising campaigns. Of those that were recalled, the most frequent was the "government vegetable man" (two fruit and five vegetables a day) with 78 respondents (9.4%) recalling it. This was followed by the Meat and Livestock Association (MLA) promoting red meat (70 respondents), although it was not possible to determine whether all of these respondents were talking about the same campaign (as 25 respondents described it by naming the spokesperson, but the remainder gave more generic descriptions). Other commonly-mentioned campaigns were the Heart Foundation (45 respondents), the "red chair" obesity in children (22 respondents), Life Be In It/Norm (16), and CSIRO healthy eating (13). No other advertising campaign was mentioned by more than 1% of respondents. It is interesting to note that two of the "healthy eating" advertisements recalled were actually physical activity advertisements that did not mention food ("red chair" and "Norm").

Recall of commercial advertising was slightly better, with 53% unable to remember any advertisements; although there was clearly some confusion in relation to the source of some of these advertisements. Perhaps not surprisingly, by far the most commonly recalled advertising campaign was McDonald's (103 respondents), followed by Subway (74 respondents). The next most commonly recalled was the MLA campaign (mentioned above, as a health organisation ad) with 66 respondents, followed by Kellogg's (19), Sanitarium (15), and the government "vegetable man" (15).

Table 4
Sources of information about healthy eating.

Information source	*N*	%
Books	131	15.7
Magazines	113	13.5
Internet	66	7.9
Newspapers	51	6.1
Commonsense/upbringing	46	5.5
Professionals (doctors, dietitians)	45	5.4
Television programmes	35	4.2
School/University/TAFE	23	2.8
Professional societies/foundation	20	2.4
Word-of-mouth	14	1.7
Journal articles	14	1.7
Radio	14	1.7
Booklets/pamphlets	12	1.4
CSIRO literature	11	1.3
In the industry	10	1.2
Reading/research	8	1.0
Weight Watchers	7	0.8
Courses/seminars	7	0.8
Health food stores	4	0.5
Other	11	1.3
Don't know	16	1.9
Don't use any sources	176	21.1

3.4. Credibility of advertising

For all three questions, respondents were considerably more likely to respond in the affirmative in relation to government or health organisations than in relation to food company advertisers. For the "aim is to inform consumers" question, 88.7% said yes for government or health organisations, compared to only 45.2% for food companies; for "generally truthful", 80.5% said yes for government or health organisations compared to 37.9% for commercial organisations; and for "provides consumers with essential information", 77.6% said yes for government or health organisations compared to 37.8% for food companies (see Table 5).

For advertisements from government or health organisations, the majority of respondents agreed that the message is credible (55.2% agreed or strongly agreed); and the sponsor has consumers' best interests at heart (52.6%). However, they were ambivalent about having a good feeling about the sponsor (42.5% agreed or strongly agreed); and believing that the sponsor is primarily concerned with making money (38.2% agreed or strongly agreed compared to 39.2% disagreed or strongly disagreed) (Table 6). Conversely, respondents were fairly confident that food companies were primarily concerned with making money (72.1% agree or strongly agree); and only a minority believed that the sponsor had consumers best interests at heart (21.8% agree or strongly agree) (Table 6). However, they were ambivalent in terms of having a good feeling about the sponsor (28.5% agree or strongly agree compared to 31.2% disagree or strongly disagree); and, although to a lesser extent, in believing that the message is credible (33.7% agree or strongly disagree compared to 26.2% disagree or strongly disagree).

As shown in Table 6, there were statistically significant differences in perceptions of the two types of organisations across all four questions. Respondents were more likely to perceive corporate sponsors as being concerned with making money and more likely to perceive government sponsors as acting in consumers' best interests, communicating a credible message, and being a sponsor towards which they would have a good feeling.

Table 5
Perceived credibility of advertisers (percentages).

	Government/health organisations			Food companies		
	Yes	No	Don't know	Yes	No	Don't know
Aim is to inform	88.7	9.2	2.0	45.2	50.5	4.3
Generally truthful	80.5	15.2	4.3	37.9	56.1	6.0
Essential information	77.6	17.9	4.6	37.8	57.6	4.7

Table 6
Perceptions of government/health organisations ('Gov') or food companies ('Corp') as advertisement sponsors.

		Disagree[a] (%)	Agree[a] (%)	Chi-square (*P*-value)
Concerned with making money	Gov	39.2	38.2	213.89 (0.00)
	Corp	11.3	72.1	
Good feeling about sponsor	Gov	20.6	42.5	39.92 (0.00)
	Corp	31.2	28.5	
Consumer's best interests	Gov	22.1	52.6	168.46 (0.00)
	Corp	45.0	21.8	
Message is credible	Gov	14.2	55.2	67.57 (0.00)
	Corp	26.2	33.7	

[a] Disagree = "strongly disagree" and "slightly disagree" combined. Agree = "strongly agree" and "slightly agree" combined. "Neither agree nor disagree" and "don't know" excluded.

Table 7
Suitable organisations for developing and running healthy eating campaigns.

	Not at all suitable (%)	Not very suitable (%)	Neither suitable nor unsuitable (%)	Suitable (%)	Very suitable (%)	(Don't know) (%)	*Mean score (1-5)*
Non-government health organisations	2.5	3.7	10.2	37.4	46.0	0.1	*4.21*
Research organisations	3.0	2.8	14.3	37.8	41.7	0.5	*4.13*
The government	4.8	5.9	14.4	38.1	36.3	0.5	*3.96*
Primary food producer groups	7.2	13.4	30.8	34.4	13.8	0.4	*3.34*
Food manufacturers	30.0	29.9	21.5	12.8	5.8	0.1	*2.34*
Supermarkets	31.1	30.0	24.5	10.1	4.3	0.1	*2.27*
Fast food retailers	64.3	19.5	10.6	3.6	1.8	0.2	*1.59*

3.5. Who should develop and run healthy eating campaigns?

The group seen as most suitable for developing and running healthy eating campaigns were non-government organisations (83.4% stating that they were suitable or very suitable) and research organisations (79.5%), followed by the government (74.4%). Additionally, approximately half of the respondents (48.2%) rated primary food producer groups as suitable or very suitable (Table 7). Those seen as *least* suitable for developing and running such campaigns were fast food retailers (83.8% not at all or not very suitable), followed by supermarkets (61.1%) and food manufacturers (59.9%). Table 7 shows the mean response for each

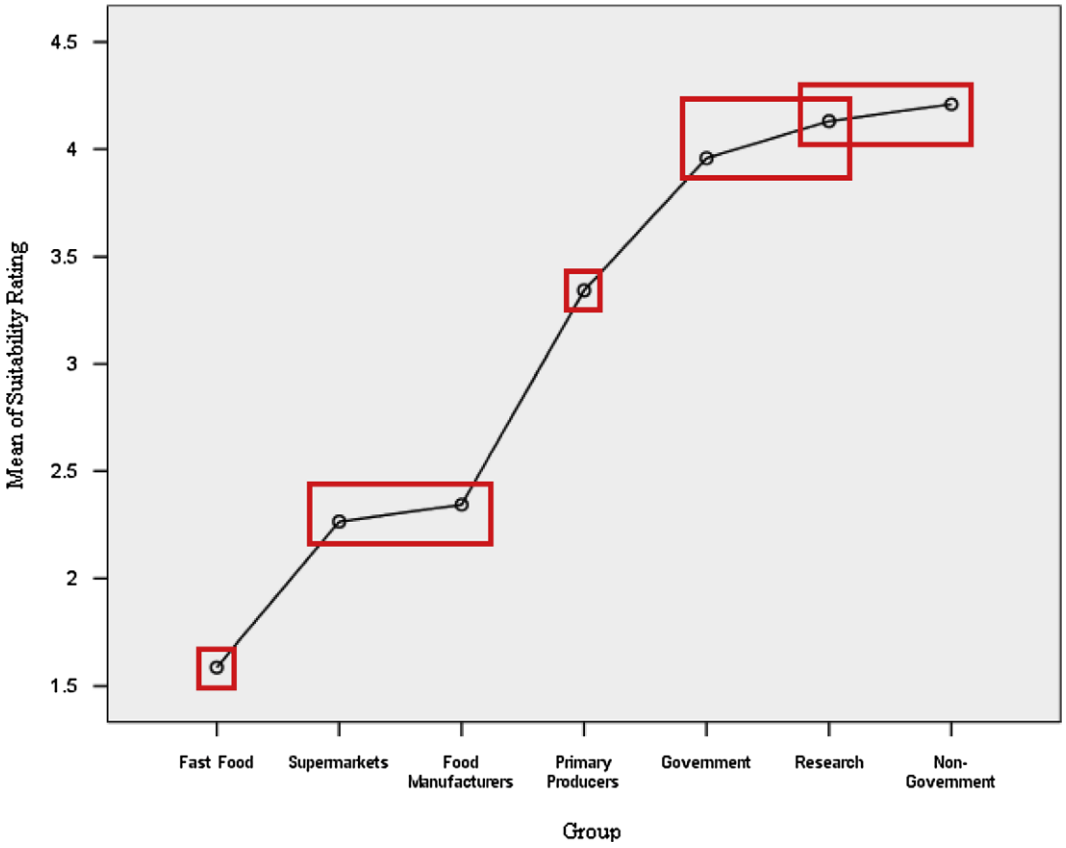

Figure 1. Suitability of organisations for developing and running healthy eating campaigns.

group. The groups are ranked from the group perceived as being least suitable (fast food retailers) to the group perceived as being most suitable (non-government organisations). These rankings indicate that respondents felt that as groups got "closer to the food," they were less suitable for developing and running healthy eating campaigns. This is confirmed by Fig. 1 (Tukey Honestly Significant Difference (HSD) test) which shows that there was a significant difference in perceptions of the suitability of: fast food outlets; supermarkets and food manufacturers; and non-government and research organisations.

Respondents were then asked whether there were any other organisations they thought should develop and run healthy eating campaigns. Over half of respondents (60.3%) stated that there were no others, and an additional 7.3% that they didn't know. The only organisations mentioned by more than 1% of respondents were: schools (6.2%), the government (4.4%), doctors and health professionals (3.7%), Australian Medical Association (2.5%), professional bodies such as nutritionists associations (2.5%), Diabetes Association (2.3%), and the Heart Foundation (1.1%). We note that a number of these organisations actually fall within the categories in Table 7.

3.6. Who should regulate healthy eating campaigns?

Respondents were first asked whether they thought there is a need for healthy eating campaigns to be regulated or policed for truthfulness and accuracy; 94.1% ($n = 785$) of respondents answered in the affirmative. Those who answered yes were then asked who they think should be responsible for regulating these campaigns. As shown in Table 8, the majority (65.6%) identified the government as the entity who should be responsible for such regulation. The only other entities identified by at least one percent of respondents were: independent bodies (3.7%), not-for-profit organisations (3.2%), medical professionals (2.2%), health organisations (1.7%), CSIRO (1.6%), a multi-disciplinary advisory panel (1.6%), the general community/individuals (1.4%), non-government organisations (1.3%), and the Australian Consumers Association (1.0%).

3.7. Trusted, and mistrusted, information sources

Respondents were asked to name two sources of information on healthy eating which they would personally trust the most, followed by a question asking them to name two sources that they would personally trust the least. Four sources of information stand out clearly as the most frequently mentioned trusted sources of information: the Heart Foundation (29.4% mentioned it), the government (21.6%), doctors/health care professionals (16.9%), and CSIRO (11.3%) (Table 9). Other trusted sources of information identified by more than five percent of respondents were magazines/newspapers (6.9%), health books (6.3%), commonsense/my own body (6.1%), family and friends (5.9%), and the Cancer Council (5.8%).

Three sources of information stand out clearly as the most frequently mentioned *untrustworthy* sources of information: fast food chains (50.1%), food manufacturers (23.4%), and supermarkets (20.5%) (Table 10). However, fast food chains fared even more poorly than this initial analysis suggests when you add in those which were specifically mentioned by name – McDonald's (10.4%), Kentucky Fried Chicken (1.7%), and Hungry Jacks (1.0%) – giving a total of 78.2% of respondents. The only other sources identified by more than 5% of respondents were TV advertising in general (6.9%), other advertising in general (6.9%) and breakfast cereal advertisements (6.7%).

4. Discussion

Respondents demonstrated a reasonably accurate understanding of "healthy eating" by their generalisations of increased consumption of the five food groups, particularly fruits and vegetables, and decreased consumption of foods high in fat, sugar and salt. This is consistent with Australian Dietary Guidelines and

Table 8
Who should be responsible for regulating healthy eating campaigns?

	%
Government	55.8
Department of health and aging	9.8
Independent bodies	3.7
Not-for-profit organisation	3.2
Medical professionals	2.2
Health organizations	1.7
CSIRO	1.6
Multi-disciplinary advisory panel	1.6
General community/individuals	1.4
Non-government organizations	1.3
Australian consumers Association	1.0
Food companies	0.8
Australian Broadcasting Authority	0.7
Universities	0.6
Nutritionists	0.5
Other	3.1
Don't know	6.2

Table 9
Most trusted sources of information on healthy eating.

	1st mentioned	2nd mentioned	Total
The heart foundation	20.4	9.0	29.4
Government	11.4	10.2	21.6
Doctors/health care professionals	9.7	7.2	16.9
CSIRO	5.5	5.8	11.3
Magazines/newspapers	3.8	3.1	6.9
Health books	3.8	2.5	6.3
Commonsense/my own body	4.8	1.3	6.1
Family/friends	3.0	2.9	5.9
Cancer council	1.7	4.1	5.8
Product information on packaging	3.1	1.4	4.5
Diabetic association	1.6	2.4	4.0
Independent research organisations	2.0	1.3	3.3
Dietitian	1.8	1.4	3.2
Scientific journals/research articles	1.1	1.9	3.0
Television	1.2	1.7	2.9
University research	1.0	1.7	2.7
Dairy association/industry	1.1	1.3	2.4
Internet	1.1	1.2	2.3
Nutritionist	1.0	1.2	2.2
Naturopath	0.5	1.0	1.5
Health organizations	0.8	0.7	1.5
Meat and livestock Australia	0.4	1.1	1.5
Weight Watchers	0.7	0.6	1.3
Fitness industry people	0.6	0.5	1.1
Primary producers	0.5	0.5	1.0
Supermarkets	0.5	0.4	0.9
Sanitarium	0.5	0.4	0.9
Local baker/butcher	0.4	0.4	0.8
Health food shops	0.2	0.5	0.7
School	0.5	0.1	0.6
Using the food pyramid	0.1	0.4	0.5
Fast food companies	0.1	0.4	0.5
Australian medical association	-	0.5	0.5
Kellogg's	0.4	–	0.4
Rosemary Stanton	0.2	0.1	0.3
Subway	0.1	0.2	0.3
Pamphlets/brochures	0.1	0.2	0.3
Canteen association	0.1	0.1	0.2
Community health centres	–	0.2	0.2
Hospitals	–	0.2	0.2
Don't trust anyone	0.5	–	0.5

Table 10
Most distrusted sources of information on healthy eating.

	1st mention	2nd mention	Total
Fast food chains	39.2	10.9	50.1
Food manufacturers	12.7	10.7	23.4
Supermarkets	6.7	13.8	20.5
McDonald's	9.1	1.3	10.4
TV advertising	4.1	3.5	7.6
Other advertising	4.6	2.3	6.9
Breakfast cereal advertising	2.9	3.8	6.7
Food industry (meat/dairy)	2.2	2.2	4.4
Government	2.2	1.0	3.2
Newspaper/magazines	–	2.5	2.5
Kentucky fried chicken	–	1.7	1.7
Any profit driven organisation	–	1.4	1.4
Food packaging/labels	–	1.3	1.3
Hungry Jack's	–	1.0	1.0
Coca-cola/soft drink companies	–	0.7	0.7
Weight watchers/Jenny Craig	0.5	–	0.5
Friends/family/colleagues	–	0.5	0.5
Don't trust anyone	0.5	–	0.5
Other	1.8	4.9	6.7
Don't know	13.7	23.0	36.7

is reflected in a wide range of position statements from peak health groups such as The Heart Foundation, Diabetes Australia and Cancer Councils, as well as public health policies. The weight of these authoritative bodies is also congruent with respondents' most trusted sources of information (Table 9) as well as being the strongest influence on consumers to heed advice or to make any behavioural changes to improve their health. Retailers and fast food outlets had the weakest effect on this, presenting a stark contrast between those delivering theoretical advice and those delivering actual food.

Another view is that this response could be seen as more socially acceptable given that health practitioners have greater social currency in health than providers of food (Table 3). Interestingly, health professionals (doctors or dietitians) were ranked sixth in terms of sources of information about healthy eating; this is approximately one third of the level for books and magazines, and coming behind the internet, newspapers and commonsense/upbringing (Table 4). The results may reflect the extent of exposure to these sources of information, and raise the question of quantity of information versus reported impact. Future experimental research might attempt to correlate actual intake or purchase patterns with perceptions of and exposure to healthy eating messages from these distinct sources of information. The influence of the media is deserving of particular attention given both the role of advertising in influencing food choice and, perhaps even more importantly, the media's agenda-setting role (McCombs and Shaw, 1993). Judicious use of mass media to promote the concept of 'healthy eating' will be a key component of social change strategies directed at improving the nutritional choices of Australians and slowing the increase in obesity rates.

The low recall of healthy eating messages might indicate a lack of connectedness to healthy messages (these are the domain of health professionals), or simply low impact. It is reasonable to question whether consumers are also confused about healthy eating due to the sheer volume of information they are exposed to, mixed messages, conflicting advice and misinformation from authorities, media and food packaging itself. In general, however, the reported perception that government or health organisation advertisements were more credible than those of food companies tends to confirm the position that health messages are the domain of the health industry, not the food industry. If the health industry has high corporate credibility, perhaps strong endorser credibility is a missing link which may help to improve the effectiveness of healthy eating campaigns (such as the Kellogg's/NCI partnership).

However, the position of the health industry in having authority to provide health messages may become shared with shifts toward acceptance of the food industry. In Australia today, the media has reported that companies like Kellogg's and Sanitarium are working on public relations campaigns designed to create awareness of the health benefits of eating their foods (Gotting, 2003). Also, Kraft has planned initiatives such as placing a cap on portion sizes, improved nutritional labelling, eliminating marketing in schools, developing guidelines to improve nutritional characteristics of all products, and creating guidelines for the marketing and advertising of its products to children (Mitchell and Shoebridge, 2003). The effects of these activities may result in greater acceptance of the food industry in providing healthy eating messages and developing credibility over time.

Shifts in the sceptical nature of consumers may therefore also change over time. If consumers adopt the view that the food industry is an appropriate and truthful source of information, then the potential for collaborative partnerships with the health industry holds promise for the much desired social change of improving public nutrition outcomes.

Interesting patterns were also observed in responses to questions on perceptions of advertising sponsors. Food companies were clearly perceived to be more concerned about making money, but the jury was out for the government/health industry, with approximately equal proportions of respondents agreeing and disagreeing that this was their focus (Table 6). The government/health industry was clearly perceived to provide credible messages, whereas there was a spread of opinions on the credibility of messages from the food industry. A more distinct division was seen with whether or not the organisation is working in the consumers' best interest, with the health industry perceived in the affirmative and the food industry in the negative. Further, the government/health industry fared slightly better than the food industry in terms of consumers having a 'good feeling' about the sponsor.

The common ground that the food and health industries shared, therefore, was that participants were undecided about the motives of advertising ('feel good about the sponsor'). This might suggest an emerging understanding of the 'business' of health, and also possibly of the government's need to be seen positively in the public eye. In terms of the food industry, the result suggests ambiguity in a context where the industry is seen not to be concerned about the consumers' best interest. The credibility results were internally consistent with scores for elements ('aim to inform'; 'generally truthful'; 'essential information'; 'credible message') reliably confirming higher credibility of the health industry and an ambiguous result for the food industry. Affirmative credibility responses for government and health authorities clearly dominated amid little dissention (around 80% yes and 15% no), but there were more equal responses for food companies (around 40% yes and 55% no).

In terms of who should have the social role (authority) to run a healthy eating campaign, the results suggest that the closer the organisation to selling the product for consumption the more likely they will be seen as unsuitable, and those *not* involved in food sales (non-government and research organisations) are more likely to be seen as being suitable. This highlights various positions in the food knowledge, production, manufacturing, and sales supply chain and provides evidence of a social norm, that providing the finished product for consumption should not be associated with claims of health. It may also be due to the food industry being associated with making money rather than the consumers' best interest, which is an interesting point of discussion given that in conventional business, food product development is driven by consumer demand and manufacturers spend a great deal of time trying to judge what consumers will purchase.

Perhaps the missing link is the health issue—which appears from this data to belong to the health profession domain. It would

appear that the consumer has two distinct relationships—one with the health industry related to information and knowledge and another with the food industry related to food purchasing. A challenge for public health will be to see how this interrelationship might be utilised to result in their vision of better food choices coming to fruition, and ultimately sustained better health outcomes for Australia.

Developments from the NSW Childhood Obesity Summit (NSW Childhood Obesity Summit 2002) illustrate a positive example. A series of resolutions were made that included 20 recommendations and changes for the commercial food industry, including changes to labelling and regulation, and encouragement of innovative food and beverages reflecting advances in nutrition and consumer needs. A series of eight resolutions were also endorsed in relation to the media and advertising. The media reported that the Australian Association of National Advertisers responded to these resolutions by seeking $1 million from members and food companies to implement an anti-obesity education campaign, later renamed as a healthy lifestyle campaign (Brook, 2003). Further it was reported that the food industry will change product recipes and reduce portion sizes, and encourage healthier eating and lifestyles with advertising campaigns (Gotting, 2003).

The final results of the survey are overwhelmingly consistent with the view that governments should regulate healthy eating campaigns, confirming the clear social norm that health is the business of governments.

4.1. Limitations

This study utilised a CATI methodology to survey consumers about their perceptions of healthy eating. Respondents were participating on a voluntary basis and thus it is possible that those who agreed to participate were more interested in food-related messages than the general population (although the high proportion of household grocery purchasers, and consistency between the sample demographics and those of the underlying population, suggests that this was an appropriate sample).

A second limitation is that this survey only measured respondents' stated opinions; it is unknown whether their views of the trustworthiness of different information sources actually influences behaviour. Other study designs would be required to test credibility scepticism and preferences.

5. Conclusion

In summary, the results of this survey consistently indicate that consumers today still perceive healthy eating information to be the domain of the health industry and this is even more so the closer the context is to actual food purchasing and consumption. As in all social contexts, however, there are ambiguities and shifts in conventional trends, such that food companies may be seen to develop credibility over time and the health industry may be perceived as more of an industry. This brings the social positioning of these apparently opposing agencies closer together, which poses a major challenge for policymakers, social marketers, governments, health industry, and food industry alike. The challenge for marketing public health messages will be to recognise and work with these shifts in public perception and responsivity to create real opportunities for effective healthy eating campaigns to make the desired (sustained) social change of improving the nutritional intake of the community to achieve better health outcomes for Australia. However, as pointed out by Hill and Stoelwinder (2003), an effective social change campaign must be fought on two fronts: long-term strategies to alter physical and social environments which are supportive of healthy lifestyle choices; and short-term strategies to equip people to make healthy choices in the current obesogenic environment.

Acknowledgements

The study reported in this paper is part of a program of research funded by an Australian Research Council Discovery Grant (DP0558125).

References

Australia New Zealand Food Authority, 1996. National consumer survey on food labelling. ANZFA, Canberra.
Ballentine, A.J., 2006. Measuring organisational sponsorship credibility: the application of source credibility theory in determining the most effective advocacy advertisement sponsor. Pharmacy Healthcare Administration. Florida, University of Florida. Doctor of Philosophy.
Bishop, R., 2001. Old dogs, new tricks? An ideological analysis of thematic shifts in television advertising for diet products, 1990–2000. Journal of Communication Inquiry.
Brook, S. (2003). Agreement Closer on Anti-obesity Campaign. The Australian: B11.
Diabetes Australia (October 2006). The Economic Costs of Obesity, Diabetes Australia.
Donovan Research, 2001. Labelling Issues – Consumer Qualitative Research. ANZFA, Canberra.
Donovan Research, 2008. Final Assessment Report Proposal P293 – Nutrition Health and Related Claims 2008. FSANZ, Canberra.
Freimuth, V., Hammond, S., Stein, J., 1988. Health advertising: prevention for profit. American Journal of Public Health 78, 557–561.
Gao, H., 2002. Soda Ban at Los Angeles School District may Burst the Bubble. Daily News, Los Angeles, California. p. 3.
Gotting, P., 2003. Food Firms Taking the Offensive on Fat Children. Sydney Morning Herald. p. 1.
Graham, P., Harker, D., Harker, M., Tuck, M., 1994. Branding food endorsement programs. The national heart foundation of Australia. Journal of Product and Brand Management 3 (4), 31–43.
Hawkes, C., 2004. Nutrition Labels and Health Claims: The Global Regulatory Environment. WHO, Geneva. pp. 1–72.
Herbig, P., Milewicz, J., 1995. To be or not to be...credible that is: a model of reputation and credibility among competing firms. Marketing Intelligence and Planning 13 (6), 24–33.
McCombs, M.E., Shaw, D.L., 1993. The Evolution of Agenda-Setting Research: Twenty-Five Years in the Marketplace of Ideas. Journal of Communication 43 (2), 58–67.
Ippolito, P.M., Mathios, A.D., 1990. The regulation of science-based claims in advertising. Journal of Consumer Policy 13, 413–445.
Jones, S.C., 2007. Fast cars, fast food, and fast fixes: industry responses to current ethical dilemmas for Australian advertisers. Journal of Public Affairs 7 (1), 75–91.
Kell, P., 2007. Consumer mouse that is roaring. The Sydney Morning Herald, Sydney. p. 13.
King, E., 2002. Beware the Dangers of White Powder. The Age, Melbourne. p. 4.
Koslow, S., 2000. Can the truth hurt? how honest and persuasive advertising can unintentionally lead to increased consumer skepticism. The Journal of Consumer Affairs 34 (2), 245–268.
Lafferty, B., Goldsmith, R.E., 1998. Corporate credibility's role in consumers' attitudes and purchase intentions when a high versus a low credibility endorser is used in the ad. Journal of Business Research 44, 109–116.
Luna, N., 2007. Subway ASKS, WANT FRUIT with that Sub? Knight Ridder Tribune Business News, Washington.
Hill, S., Stoelwinder, J., 2003. Communicating with consumers: The development of an evidence-based research agenda in chronic illness research. Australian Journal of Primary Health 9 (2&3), 218–222.
Mitchell, S., Shoebridge, N., 2003. Kraft has a slim chance. Australian Financial Review, 48.
Nestle, M., 2003. The ironic politics of obesity. Science Magazine, 781.
NSW Childhood Obesity Summit, 2002. NSW childhood obesity summit: communique. <http://www.health.nsw.gov.au/obesity/adult/summit/communique.pdf>.
Obermiller, C., Spangenberg, E.R., 1998. Development of a scale to measure consumer skepticism toward advertising. Journal of Consumer Psychology 7 (2), 159–186.
Peteers, A., Barendregt, J.J., Willekens, F., Mackenbach, J.P., Al Mamun, A., Bonneux, L., 2003. Obesity in adulthood and its consequences for life expectancy: a life-table analysis. Annals of Internal Medicine 138 (1), 24–32.
Shoebridge, N., 2003. Vegie burger, salad and no chips. Australian Financial Review, 42.
Swinburn, B., 2008. Obesity prevention: the role of policies, laws and regulations. Australia and New Zealand Health Policy 5 (12), 12–16.
Swinburn, B., Egger, G., Raza, F., 1999. Dissecting obesogenic environments: the development and application of a framework for identifying and prioritising environmental interventions for obesity. Preventive Medicine 29, 563–567.

Tapsell, L.C., 2008. Evidence for health claims: a perspective from the Australia–New Zealand region. Journal of Nutrition 138, 1206S–1209S.
Thompson, J., Alvy, G., Lees, A., 2000. Social entrepreneurship – a new look at the people and the potential. Management Decision 38 (5), 328–338.
Unknown, 2007. "Research and Markets; Research and Markets: New Report '7-Eleven: Towards Healthy Convenience' Provides an Account of the Company's New Venture to Date" 19th November 2007. <http://www.researchandmarkets.com/reports/c73587>(Retrieved 15.09.08).
Walker, E., 2004. Burger King offers bunless whopper as part of healthy eating campaign. Knight Ridder Tribune Business News, Washington. p. 1.
Williams, P., Ridges, L., Yeatman, H., Houstan, A., Rafftery, J., Roesler, A., Sobierajski, M., Spratt, B., 2006. Nutrition function, health and related claims on packaged Australian food products – prevalence and compliance with regulations. Asia Pacific Journal of Clinical Nutrition 15, 10–20.
Williams, P., McMahon, A., Boustead, R., 2003. A case study of sodium reduction in breakfast cereals and the impact of the Pick the Tick food information program in Australia. Health Promotion International 18 (1), 51–56.
World Health Organisation (2000). Obesity: Preventing And Managing The Global Epidemic. WHO Technical Report Series 894. Geneva, World Health Organisation: pp. 1–253.
Worsley, A., Scott, V., 2000. Consumers' concerns about food and health in Australia and New Zealand. Asia Pacific Journal of Clinical Nutrition 9 (1), 24–32.
Zuppa, J.A., Morton, H., Mehta, K.P., 2003. Television food advertising: counterproductive to children's health? A content analysis using the Australian Guide to Healthy Eating. Nutrition & Dietetics: The Journal of the Dieticians Association of Australia 60 (2), 78–84.