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Department of **Media** and **Communications**

**A COMMENTARY ON THE RESEARCH EVIDENCE REGARDING
THE EFFECTS OF FOOD PROMOTION ON CHILDREN**

Prepared for the Research Department of
the Office of Communications (OFCOM)

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Approaching the issue

The brief

The present commentary was commissioned in January 2004 by the Research Department of the Office of Communications in response to widespread academic, public and policy concern regarding the decline in UK children's health in recent decades and the possible causal role played by the promotion of 'unhealthy' food to children through the media.

This commentary aims firstly to evaluate critically the key claims made in the recent literature review by Hastings et al (2003), a report commissioned by the Food Standards Agency (FSA). Secondly, it considers the critique of the FSA report by Paliwoda and Crawford (2003), commissioned by the Food Advertising Unit (FAU). Thirdly, it takes into account the work of Young (Young et al, 1996 and Young, 2003), who reviews an overlapping research literature, focussing on television advertising.

The approach taken

The FSA report begins with two, scene-setting 'narrative reviews':

- The first addresses the process of promotion in general;
- The second examines the cases of tobacco and alcohol promotion.

The body of the report presents two substantive 'systematic reviews', based on detailed summaries of all studies identified through a rigorous search process, which ask about:

- The nature and extent of food promotion messages to children aged 2-15;¹
- The effects of such promotions on children's food preferences, knowledge and behaviour.²

Given that the reports and reviews considered here concern a series of contested claims regarding the nature, extent and effects of food promotion to children, the following strategy is adopted. First, the field of media effects is briefly outlined. Second, the method of systematic review, as employed by the FSA report, is

¹ Systematic Review 1, 'The extent and nature of food promotion to children', asks the following. Q1: What promotional channels are being used to target children? What is the relative spend in each of these promotional channels? What are the time trend changes? Q2: What food items are being promoted to children? What are the time trend changes? Q3: What are the principal creative strategies used to target children? To what extent are these different creative strategies being used? What are the time trend changes?

² Systematic Review 2, 'The effects of food promotion on children's food knowledge, preferences and behaviour', asks the following. Q1: How do children respond to food promotion? Q2: Is there a causal link between food promotion and children's food knowledge, preferences and behaviour? Does food promotion influence children's nutritional knowledge? Does food promotion influence children's food preferences? Does food promotion influence children's food purchasing and purchase-related behaviour? Does food promotion influence children's food consumption behaviour? Does food promotion influence children's diet and health-related variables? Other effects of food promotion. Q3: If food promotion is shown to have an effect on children's food knowledge, preferences and behaviour, what is the extent of this influence relative to other factors? Q4: In the studies which demonstrate an effect of food promotion on children's food knowledge, preferences and behaviour, does this affect total category sales, brand switching or both?

evaluated. Third, the two narrative reviews are considered in brief. Fourth, each systematic review is considered in some detail. In relation to each of these four elements, the claims made in the FSA report represent the focus of the commentary. These are presented and evaluated in relation to the specific points or criticisms raised regarding these claims in the FAU critique. The two Young reports are included where substantive divergences are evident or where an alternative position on the same point is offered.

This commentary does not seek to compare in detail the studies reviewed in the FSA and Young reports, this having been the focus of a recent seminar.³ In short, the aim of this commentary is less a comprehensive description of the points raised in these various reports than it is an analysis and evaluation of the underlying claims and counterclaims in the current debate over food promotion to children.

It should be noted that the findings of the FSA report's first systematic review appear to be relatively uncontroversial, while those of the second are more controversial.⁴ Indeed, the findings of the second review are in key respects contested by the FAU critique and have been widely debated by the public and in the media in the autumn/winter of 2003/4.⁵ They also appear to conflict with Young (2003). Hence, this commentary concentrates on the issues raised by the second review, the majority of which concern the effects of television advertisements on children.⁶

Lastly, since it appears to be generally agreed that there are a number of gaps in the research picture, this commentary also indicates where new research might usefully be targeted. *Recommendations for the future research agenda are italicised.*⁷

The field of research

The research evidence regarding the effects of food promotion to children extends over forty or more years, much of it produced by applied developmental and social psychologists and, more recently, by those in the academic fields of marketing and advertising, in response to fluctuating levels of concern in different countries and in order to inform varying policy options. Most research in this field, as in other investigations of media effects, broadly follows Lasswell's original model (1948), asking 'who says what to whom on what channel and with what effect?'

The point is that each element of Lasswell's question makes a difference, and so evidence must be carefully evaluated in relation to the specific research question asked. Most research reviewed by the FSA report accords with this model, the many factors researched in different studies fitting into Lasswell's five questions as follows:

³ The Food Standards Agency's Academic Seminar to review research on food promotion and children. 26/11/2003. <http://www.foodstandards.gov.uk/multimedia/webpage/academicreview>.

⁴ Note that the press coverage of the FSA report is not considered here, though the FAU critique is in part concerned with possible discrepancies between the FSA report, its press release and the coverage it received.

⁵ For example, *Media Guardian* (14-1-2004), *The Guardian* (11-11-2003).

⁶ There is a vast and complex literature reviewing media effects in general (across a wide range of domains) and a similarly broad range of effects of the media on children in particular. This is curiously little referenced in either FSA or FAU reports. Traditionally, most research has centred on the question of media violence, where an often parallel set of debates have been pursued. See, for example, Cumberbatch and Howitt (1989), Kunkel (1990), Livingstone (1996), Singer and Singer (2001).

⁷ Note that Young et al (1996) include a range of considered and interesting recommendations for specific future research studies which, though not repeated here, are worth pursuing.

Question	Typical Methods	Main Factors Considered
Who	Analysis of range of message sources	Advertisers. Broadcasters. Health education bodies. Governments. Etc.
Says What	Message (content) analysis	Persuasive strategies. Balance of un/healthy messages. Food labelling. Etc.
To Whom	Range of sampling strategies	Children (variously defined). Young people. Parents. Peers. By age, gender, ethnicity, socio-economic status, etc.
On What Channel	Mapping of range of promotional channels (extent, expenditure)	Television advertising, public service messages, signs and packaging, merchandising, cross-promotions, etc.
With What Effect	Experiments, quasi-experiments, observations, interviews, surveys	Short/long term effects, direct/indirect effects, cognitive/behavioural/emotional effects. Effects on food knowledge, purchase intention, preference, attitudes, liking, purchase behaviour, pester power, memory for ads, products, etc.

An imperfect field

As the FSA, FAU, Young and others make plain, the body of available research on food promotion to children is neither comprehensive nor even in coverage. It contains gaps and biases. Most research is conducted in America, with too little British research. Most research concerns television advertising solely, with little on other promotional channels or on the effects of cross-promotion. Most research concerns direct effects rather than indirect effects.⁸ More research examines the effects of promoting unhealthy rather than healthy foods. Children are defined differently in different studies. And so forth.

This means that some conclusions can be drawn with greater confidence than others. Note, however, that most research has been conducted on the direct effects on (young) children of the promotion of 'unhealthy foods' via television advertising, this being precisely where the most public concern is focused.

The body of available research is also flawed. Many studies are designed to identify correlations not causes. Possible confounding factors tend to be examined where convenient to measure (e.g. age, gender) rather than appropriate (e.g. parental diet, peers' exposure to media). Restrictions on research funding are evident in the numbers of studies with small samples, simple measures, paucity of longitudinal designs, and few replications.⁹

⁸ The distinction between direct and indirect effects is an important one. Most research investigates the effect of, say, television advertising on children's food preferences or purchase requests (a direct effect) rather than investigating, say, the effect of television advertising on peer norms of 'the latest thing for your lunchbox' or on parental expectations of children's preferences and then, as a second step, the effect of these peer norms or parental expectations on children's food preferences or purchase requests.

⁹ In relation to funding it is worth noting that approximately half of all the studies included in the FSA's second systematic review – on the effects of food promotion on children – are funded by Government departments, research councils or independent research charities. In the remaining cases, the funding source is unknown (according to the FSA report). Few if any studies cited by the FSA report were commercially funded.

However, this field may be no more flawed than others, such limits being endemic to many fields. On the positive side, much of the research has been funded by public bodies, conducted by independent researchers, and mainly published in peer-reviewed journals available in the public domain. This commentary suggests that sufficient knowledge is available to reach 'balance of probabilities' if not a 'beyond all reasonable doubt' judgement.

The process of systematic review

Drawing a sound conclusion from the available research depends not only on the adequacy of that body of research but also on the adequacy of any review of the research. The FSA report has thus been scrutinised not only for the quality of the research it reviews but also for the processes it adopted.

It is evident that the FSA report represents a broad-ranging search of the published academic literature relevant to both reviews (on the extent and nature of food promotion to children, and on its effects on their consumption). It is undoubtedly an impressive effort, conscientiously conducted, which substantially improves upon previous reviews. However, the FAU critique contests both the quality of the research conducted and the FSA report's review process. Indeed, there are some grounds for concern regarding the methodology selected and its implementation, as well as problems with the body of research that has been conducted. So, let us first examine the process of systematic review which, in the FSA report, represents the 'lens' through which the research domain can be seen and judged.

Searching

The search process undertaken by the FSA report is described as systematic, by contrast to many other reviews (including Young et al, 1996 and Young, 2003), and one must commend the decision to review all the available evidence, itself an undoubtedly onerous undertaking. Using a range of search strategies, this process identified 29946 articles as of possible relevance to the issue of food promotion to children.

While the search strategy (p.54) is described as 'broad', there is scope for criticism. For example, some journals of childhood, of health communication, and of the political economy of consumer culture/media and communications do not appear to be included (though without seeing the complete list of journals accessed by each database this is hard to determine).¹⁰ The FAU critique (p.5) implies that some valuable findings are neglected by the FSA report because insufficient methodological information is available. However, the FSA report's defence is fair, namely that one cannot review empirical evidence unless the research procedures are both rigorous and transparent.

A review can only be as good as the body of available evidence itself: if research funding has concentrated more on potential harms than benefits, if a field uses variable definitions of its key factors ('child', 'exposure', 'promotion'), if journals are

¹⁰ If the search of electronic data bases indeed excluded some communications, consumer and cultural studies, health communication and media studies journals, one should note that it is in these that critical attention is paid to the cultural context – of consumer culture, of promotional culture, of the political economy of advertising and marketing – and to the social context (competing/other factors likely to influence, directly or indirectly, consumer behaviour). Page A-33 (which lists articles found by chasing references in review articles) supports the claim that the report may have excluded key journal titles from its search.

more likely to publish significant than null results – the review must take this into account, not merely summarising ‘what has been done’. However, arguably a theoretically informed review, based on judgement rather than being ‘systematic’ may reach as valid conclusions. A review of the conclusions reached by experts in the field is notably absent from the FSA report – one gains no overall picture of the judgements of key researchers or their views of research strengths or gaps. By contrast, Young’s approach is to situate research findings within a ‘child-centred’ approach which relates the effects of advertising both to the process of child development and to the domestic context of food consumption. However, Young’s reviews are not systematic or inclusive; nor do his descriptions of the studies lead inevitably to the conclusions drawn.

Recommendation: While an inclusive approach to any future literature review would be of considerable value in weighing the balance of evidence, there is also value to a review that interprets empirical findings by relating them to variables identified as important in established theoretical frameworks, most notably those of age, other influences on food choice, and an understanding of child development. The FSA report excluded the views of experienced researchers in the field unless they reported original empirical material; these views should surely be brought into the public debate.

Selecting

As described in the FSA report, the next stage of the systematic review process was to select from among the 29946 titles and abstracts initially identified. The selection process followed reduced this initial sample of articles from 29946 to 201 articles (0.67% of the sample – an enormous reduction) for which full text was retrieved. Although there is no hint of bias in this process, one wonders about the content, and the possible relevance, of the many articles excluded on the basis of their abstract alone.

The FAU critique asserts that the FSA report does not state how many people conducted the initial filter of articles (from 29946 to 201) nor what criteria were used. This is incorrect: the FSA report states clearly the criteria used (Figure 6) and that two members of the review team conducted the selection, with a further member checking 10% of the judgements made. However, it remains unclear whether abstracts were available for all 29946 articles (or were any judgments made on titles alone?). Moreover, one must wonder how the FSA report achieved the exceptional coding reliability figure of 100% for the 10% (c.3000) of independently checked judgements.

From this sample of 201 articles, the FSA report first retrieved the full text of the article and then made further exclusions according to criteria presented in Appendix 8 (justification for exclusions) This left 65 articles for systematic review 1 and 55 articles for systematic review 2 - 0.4% of the original sample - for detailed consideration in the body of the report. Not all of the reasons for exclusion are here were made entirely clear even though the criteria must have been spelled out to guide the reviewers (e.g. what is meant by ‘irrelevant measure of effect’ or ‘quality criteria – non-systematic review’). It would have been particularly helpful to know if any of the excluded articles contained original empirical material.¹¹

¹¹ The FAU critique (p.11) contests the quality judgements applied by the FSA report to those articles extracted in full text form for the review. The process as described indeed lacks sufficient detail to be replicable: however, in practice, while noted, rather little use is made of these judgements in the review. The FAU critique (p.12) also regrets that more government and industry studies were not included, but

The outcome of the FSA report's selection process was that:

- Systematic Review 1 examined 65 articles reporting on 50 original empirical studies
- Systematic Review 2 examined 55 articles reporting on 51 original empirical studies

As an evidence base, this is disappointingly small, given the decades of concern over food promotion and children's diet, to find and review only 51 original empirical studies on the effects of the former on the latter, conducted worldwide over three decades. However, I suggest that the overall picture regarding the direct effects of food promotion on children would be unlikely to change substantially if a greater number of published studies had been included. While the picture would surely become clearer if further and better research were to be conducted, particularly in relation to the other factors which may affect food choice, this may not be essential to the determination of policy responses in the present.

The marketing, promotion and consumer behaviour (FSA narrative review 1)

This narrative review suggests that marketing theories agree that promotion of products achieves an effect on the target audience, and that commerce invests heavily in advertising as a result. Persistent uncertainties, however, concern (1) the nature of this effect (whether competing for market share or market size) and (2) the ability to resist the effects among specific audiences, with (young) children representing the most widely accepted special case of a relatively vulnerable group.

Although the FAU critique (p.7) expresses no concerns with this discussion in the FSA report, several points are worth making about the general process of promotion (or persuasion or media effect). In other words, while the theory of promotion is not particularly controversial, it does contain areas where further development is needed to guide policy formation.

The active consumer

Theories of promotion recognise that consumers/viewers themselves play an active role in mediating (selecting, interpreting, accepting or resisting, acting upon) media messages. However, the FSA report does not pursue the question of whether children have the competence to play such a role, leaving open some crucial questions of media literacy, although the report does conclude (p.183) that research is needed on how children interpret television advertising. This is indeed important, because their interpretation mediates the advertised message, potentially enhancing, reinforcing or undermining the message.¹²

one can only regret in turn that many of these studies are not in the public domain, and nor is it clear that they undergo a rigorous process of peer review.

¹² Currently, policy considerations appear to be shifting from restricting exposure to promotions (i.e. preventing viewing) towards media literacy (i.e. undermining the effect of viewing), though whether this can be as effective, particularly for children most vulnerable to the promotion of unhealthy foods remains uncertain. Unfortunately, the FSA report excluded as 'irrelevant' any studies concerned with interpretation, though the bibliography includes some such studies (e.g. Dickinson 2000) and, curiously, the executive summary itself concludes that 'children enjoy and engage with food promotion, even though articles setting out to address this issue were, in general, excluded from the review.

Arguably, there are three moments at which the effects of food promotion may be inhibited reduced or undermined: before exposure (for television advertising, this is primarily a matter of national or domestic regulation of exposure); during exposure (raising questions of consumer understanding or audience reception or media literacy); and after exposure (where social mediation by parents, peers or others is crucial, though such social mediation occurs at all three moments).

Young et al (1996) terms children's understanding of advertising 'advertising literacy'. However, he does not address the question of whether this understanding makes a difference to the persuasive effect of advertising (regrettably, neither does the FSA report). In other words, does knowing that an advertisement seeks to persuade you lead you to be less persuaded by it than if you don't realise this? The literature assumes this to be the case, and research on adults' critical abilities in relation to television programme supports this assumption. But little if any research directly seeks to link literacy to effects in relation to advertising.

However, in relation to other broadcast content, notably drama, there is some work suggesting that effects are stronger if children believe the drama to be 'real'; Hawkins and Pingree, 1983; see also Dorr, 1986). To take one example in the field, Kim and Rubin (1997) report a path-analysis study which concluded, 'the facilitative activity of selectivity, attention, and involvement served as a catalyst to media effects, whereas the inhibitory activity of avoidance and scepticism served as a deterrent.'¹³ In a related field, it is worth noting that the well-established Elaboration Likelihood Model of Persuasion (Petty and Cacioppo, 1986) suggests that long-term attitude change is most effect when people both engage actively with the message and have the ability and motivation to do so.

Putting together a lack of research on literacy with a lack of clarity regarding age (see below), it would seem that, crucially, we lack a clear account of how to relate literacy to age. In other words, if children gain in advertising literacy as they become developmentally more sophisticated, does this result in a greater ability to resist or defend against the messages of advertising?

***Recommendation:** The question of media literacy (or critical evaluation of advertising) as a possible mediator of the effects of advertising represents a clear and important issue for future research. Two courses of action would be appropriate. Firstly, a review of the literature on the mediating effects, if any, of audience activity (or media literacy, particularly what Kim and Rubin term 'media scepticism'). Secondly, direct empirical research on the mediation of effects in the domain of television advertising to children. In both cases, the research strategy must distinguish children by age.*

The age of the child

The FSA report (p.36) considers age trends in children's developing understanding of advertising, noting the broad conclusion from developmental psychology that children begin to learn to discriminate adverts from programmes around 4, to recognise the persuasive intent of adverts around 7, and to critique them around 8. This is given a narrowly cognitive explanation, neglecting the importance of their social development in relation to the peer group, the media, and consumption practices (Lunt and

¹³ As these authors go on to state, 'the findings highlight the important, yet variable, role of audience activity in facilitating and inhibiting media effects. This deserves further exploration in future research'. See also Emmers-Sommer and Allen (1999) for a review of research linking media education to a reduction in media effects.

Furnham, 1996), and so failing to consider at what age children gain the social confidence to resist the norms of their peers, for example.

Young (2003) similarly follows mainstream thinking in both developmental psychology and communication theory by conceptualising the child as 'an active consumer of information, whether the information is derived from commercial communications or other media representations, or from role models based on the behaviour of family and peers' (p.442). A critical question becomes whether the child is intellectually equipped to perform this task – essentially, do they understand the nature and purpose of advertising? Young (2003; see also Young et al, 1996, for a more detailed account) reviews a variety of research which concludes, as does the FSA report, that before 4 or 5, children regard advertising as simply entertainment, that between 4 and 7, children develop the ability to distinguish advertising from programmes, that after 11 or 12 they can articulate a critical understanding of advertising (this depending on an awareness of the intentions of others separate from oneself), and that between 7 and 11 lies an uncertain area in which children vary in the sophistication of their understanding of advertising, though most have grasped the intention to persuade by around 8 years old. The upshot is that children may be particularly vulnerable to the effects of advertising before 8 years old and, for some, up until 12 years old.

Crucially, neither the FSA report nor Young systematically relate this account of child development to the findings in the studies reviewed.¹⁴ This is the case even though it is surely crucial to determine whether some age groups are more likely to be influenced than others (and why). Conclusions regarding advertising to children should, given the research evidence, be age-specific. Similarly, policy responses may be age-specific, and the justification for these merits further exploration. Young (2003) adds to this argument the claim that children's tastes become relatively fixed by the age of 5 or 6 years old.¹⁵

It is critical to the issues here to determine whether the research question is why some children have a less healthy diet than others or whether the concern is why children in the present decade have a less healthy diet than in previous decades. Television advertising may play a role in both questions, but in different ways. The first question raises the possibility that some children (younger children, perhaps more overweight children) may be more vulnerable to the influence of, or more exposed to, television advertising. The second raises the possibility that children today are more vulnerable to, or more exposed to, television advertising than in the past. Both, either or neither may be the case, but we need to disentangle the questions. The FSA report implies both possibilities – the first, by offering an account of child development although, as noted above, this is insufficiently related to the age-specific findings in the literature; the second by suggesting a growth in food promotion – but it develops neither. By contrast, in stressing universals in children (e.g. 'children are neophobic'; Young et al, 1996: 1; children have an innate liking for

¹⁴ The FAU critique criticises the relative neglect of age and gender differences in the FSA report (p.6). It is indeed the case that the FSA report offers little analysis of either age or gender in terms of the differences to be explained among different groups of children; but this is not to say that it neglects to report statistical differences by age or gender when these are found in the literature.

¹⁵ If the evidence for this is considered convincing (and this matter is beyond the scope of the present commentary), or – separately, and more convincingly - if one accepts that there appears to be converging evidence that children from infancy to 6 or 7 years especially, and below 12 years more conservatively, lack the literacy to recognise the persuasive strategies and rhetoric of advertising, then this age group should be targeted in terms of policy (whether through the regulation of advertising content/scheduling, through health education campaigns directed at children or parents, or through media literacy programmes directly addressed to children).

sugar; Young 2003), Young implies – in some contradiction with his developmental account - that neither variation within the population or variation over time across populations occurs. However, both kinds of variation are precisely what has been observed in studies of diet, health and obesity – irrespective of the putative role of food promotion - and it is both these kinds of variation that remain unexplained by Young’s accounts, and underdeveloped by the FSA report.

***Recommendation:** There would be a clear benefit in reanalysing published findings on the effects of advertisements on children in order to identify any systematic relations between evidence of effects (or otherwise), type of effect (direction, size, etc), and children’s age. This reanalysis of the existing literature could be conducted for food promotion only or across product areas so as to extend the pool of high-quality studies. Age here should be interpreted in developmental terms, including both cognitive and social developmental processes.¹⁶*

Brand/category switching

The issue of brand switching or category switching is supposedly crucial to advertisers if advertisers hope to sustain the claim that the goal of promotion is brand switching (increasing market share) rather than category switching (increasing market size). However, the FSA report (p.30) makes a fair case that this distinction is implausible from the point of view of theories of influence, and unsustainable as a practical distinction in the market, stating that ‘it seems improbable that effects that have been established at a brand level can never take place at a category one’.¹⁷ It is also clear that the research designs employed in many of the studies reviewed do not seek to operationalise this distinction, rendering the evidence difficult to relate to the difference between brands and categories. In other words, they tend to compare the effects of food promotion on children’s choices of healthy and unhealthy foods (rather than their choices of foods which vary systematically by brand or by category).

***Recommendation:** If brand/category switching is an important policy issue, I suggest a literature review conducted more broadly (i.e. for advertising to children in general, across product areas), would be of value. This review would, where necessary, re-classify the dependent measures used in experiments (e.g. healthy/unhealthy food choices) into brand or category choices in order to map evidence for effects (or otherwise) in relation to this distinction.*

The promotion of tobacco and alcohol to children (FSA narrative review 2)

A valid analogy?

The FSA report suggests that, since the promotion of tobacco and alcohol to children has been the subject of similar public policy debates, comparison with these can inform our understanding of food promotion. Moreover, since tobacco advertising to children is restricted, perhaps lessons can be learned regarding the possible benefits of restricting food advertising.

¹⁶ Following the above argument, it would also be possible and interesting to conduct a longitudinal content analysis that examines the relation between the rise in food promotion and the rise in childhood obesity.

¹⁷ The brand/category distinction is considered by Young et al (1996: 86) but with no clear conclusions offered. The academic seminar held by the FSA notes on this point that ‘Young appeared content to accept the conclusions of experimental studies indicating a brand-switching effect, yet reluctant to accept studies of a similar design that indicated an effect on category switching.’

However, the FAU critique argues that this comparison is inappropriate, for tobacco and alcohol are addictive, unlike food. It also argues that this review is unclear. Both the FAU critique's points have some merit. The FSA report does not make a clear case for the comparison with tobacco and alcohol (though nor does the FAU critique explain why their addictive potential makes such a difference, for presumably the persuasive process in taking up unhealthy practices could bear some similarities, even if that of giving up an addictive substance is much more difficult).

Learning the lessons

Perhaps the analogy is worth pursuing further, not only to maximise consistency in public policy¹⁸ but, more importantly, to see what can be learned from a related field. However, this narrative review is not as helpful as it might have been.

- For tobacco, the FSA report encompasses research linking awareness of tobacco promotion and likelihood of future smoking (p.41) but leaves the explanation for variation in awareness unclear (tobacco promotion being one among several possible factors).
- For alcohol, the focus is again on correlational studies.¹⁹ Although these show an association between exposure to advertisements for alcohol and inclination to drink or actual alcohol consumption, the FSA report concludes that any causal relation remains unproven.

The FSA report observes that for tobacco but not for alcohol the evidence has been used to restrict tobacco advertising, especially to children. However, it is not very clear from the FSA report (p.41) whether or not this restriction has proved effective in reducing children's smoking.

Recommendation: Other domains in which links have been claimed between promotion and children or harm are worth considering. Is the claim about food promotion to be regarded as distinctive, or as similar to that found in relation to other areas (e.g. toys)? If anything is to be learned from such comparisons, a clearer picture is particularly needed regarding the effectiveness of bans on tobacco and/or alcohol advertising.

The extent and nature of food promotion to children (FSA systematic review 1)

The content of food promotion

The FSA report notes (figure 8, p.80) that three quarters of all spending on food promotion through the mass media in the UK (to all audiences) is spent on television advertising. As the FAU critique points out, spending figures increase substantially if other forms of promotion are included. Available figures suggest that total UK advertising spending per annum in the categories of food, soft drinks and chain restaurants is £742billion, with £522 billion spent on television advertising and £32 million spent in children's airtime (source: OFCOM, February 2004).

¹⁸ One question is whether a lower, equivalent, or higher standard of evidence is required of food promotion/advertising compared with other areas of content regulation.

¹⁹ Clearly, in relation to these forms of consumption, experimental manipulations to see if children's behaviours are changed by promotion would not be ethical. On the other hand, long-term interventions of a pro-social nature (to reduce/avoid unhealthy behaviours) could be ethical as well as both valuable and informative.

Food advertising on television is dominated by breakfast cereals, confectionary, savoury snacks and soft drinks, with fast-food restaurants making a more recent entry into the market. In decline is advertising for staples and fresh foods. Content analyses of television advertisements for food targeted at children to show that these centre on humour, fun, fantasy, and so forth, with cereals most often also presented as healthy or nutritious.²⁰

The FAU critique concurs with many of the FSA report's conclusions in terms of the characterisation of television advertising targeted at children, agreeing that there is a lot of such advertising, it is often humorous, stressing fun and pleasure in relation to food, and that children enjoy and engage with these advertisements (p.8).

The overwhelming majority of studies reviewed by the FSA report on this question were conducted in the USA.²¹ However, in the UK, Young et al (1996: 50) refer to several studies conducted by Young which suggest a lower proportion of advertising for sugary foods, though it appears that the possibility of advertising for other unhealthy products (fatty, salty, etc) was not investigated. However, Lewis and Hill (1998), also in the UK, conducted a content analysis showing that food is the most advertised product category on children's television, and that confectionary, cereals and savoury snacks are the most advertised. Hence, 20% of food adverts to children are for convenience foods, 6% for fast food outlets, and the remainder for cereals and confectionery (c.f. Young, 2003). Dibb and Castell's (1995) study in the UK found that 50-70% of television advertising to children was food-related and that, as also summarised in the FSA report (p.A74), 'the foods we should eat least are the most advertised, while the foods we should eat most are the least advertised'.

*Recommendation: There is scope for further research, using reliable and representative content analytic methods, to investigate the nature and extent of food promotion to children. What, exactly, is the nature and extent of the food promotion to children in the UK? A new content analysis might also compare television advertising with other forms of food promotion.*²²

Food labelling

The theme of accurate information or labelling is present in the FSA report but no clear view emerges about the ways in which children interpret food information, and whether correctly or incorrectly. This issue is crucial, if the claims of systematic review 2 are broadly accepted for if so, one needs to know whether harmful effects are better avoided by restricting advertising or by regulating the information claims of advertising. Should children be exposed to fewer messages, or would it suffice if those messages were made more informative? Or, indeed, if more food advice was critical of advertising (as part of media literacy).

²⁰ Using humour, fun etc as a persuasive strategy is not inherently problematic; the same strategies could be used to promote healthy eating.

²¹ Most notably, little of the research has been conducted in Britain, though both the broadcasting environments, and social norms of consumption, differ cross-nationally (and especially by comparison with the USA, where most research comes from; a point explicitly addressed, though hardly resolved, by Young et al, 1996).

²² Young et al (1996: 95) state that, 'in conclusion, there have been no systematic and recent studies of the frequency and content of advertising directed at children in the UK'. Put this clearly, it is evident that such studies should now be conducted.

Recommendation: A literature review which draws into contention the published research on the issue of food labelling and its effects on children's food choice would be useful in guiding policy decisions between restrictive and informational strategies. The question of children's understanding of food labelling relates to the broader question of children's media literacy.

The channels of food promotion

Too little appears to be known about forms of promotion other than television advertising to be able to map the ways in which children are targeted by food promotions more broadly, and even less is known about how these forms of promotion work together (or not) to create a complex promotional environment or culture.²³ It is not clear how far programme-commercial tie-ins, and hence the claimed blurring of programme/advertisement boundaries, is occurring in the UK.²⁴

Recommendation: Since it appears that both industry and academy agree that promotions are diversifying in form, it would be valuable for future research to encompass a range of promotional forms, of which one would continue to be television advertising. Only then will it be possible to determine the relative importance of television advertising to the overall promotional mix. There may, however, be little existing literature on this subject, and so new empirical research is likely to be required to pursue this issue.

National specificity

The FAU critique expresses strong concerns that, on the question of television advertising content and extent, (1) the majority of the research has been conducted in America and (2) the conclusions of the FSA report are not sufficiently qualified to take into account variations across the countries included in the review. Hence, some of the findings reviewed are not in fact relevant to the UK situation. These are fair criticisms. It is unhelpful to neglect the context studied for a phenomenon as culturally-specific as television food advertising, and some of the FSA report claims are misleading as a result.²⁵ Given that Sweden has banned television advertising to children, and that Greece regulates it (the FSA report, p.23), the question of national culture is clearly relevant.²⁶ However, the paucity of UK-based research is, primarily, a limitation in the research base rather than with the FSA report.

²³ The issue of promotional culture (including to children) has been addressed by those in sociology, cultural analysis, political economy etc (e.g. Kinder, 1999; Kline, 1993; Seiter, 1993; Sklair, 1993; Wernick, 1991). Here too, views are divided over the power of promotional or consumer culture though many take the view that it is too great for individuals to withstand.

²⁴ Nearly all published research concerns television advertising, throwing little light therefore on the broader (and original) question of food promotion across all media/channels. The FSA report attempts to make a virtue of a necessity here by observing that over three-quarters of the advertising spend is on television advertising. The FAU critique (p.7) notes that the promotion budget is substantially larger than the advertising budget, even though the majority of the latter is indeed spent on television. Hence, the FAU critique (p.5) is concerned that conclusions from the FSA report should not be generalised beyond implications for television advertising; in fairness, the FSA report acknowledges this at several points. Still, if not already, this point should be clarified in publicity materials. The FAU report also suggests that research on other forms of promotion exists but was neglected: this could be investigated further.

²⁵ For example, the FSA report claims (p.72) that most studies find more food advertising on national television networks, with one exception, makes sense only if it is noted that most studies are American, with the named exception being British: since USA and UK networks have to follow different rules on the amount of advertising per broadcast hour, this finding is predictable.

²⁶ <http://www.konsumentverket.se/mallar/en/startsidan.asp?IngCategoryId=662&IngArticleId=889>

Recommendation: Rather than avoiding the question of cross-national variation, an effective strategy would be to interpret such differing findings as exist cross-nationally precisely in relation to national differences in communication and consumption contexts. It is likely that more research is required here, particularly pursuing the rationale for, and consequences of, decisions to restrict or ban advertising to children in other countries (as in Sweden). Hence, a future literature review could consider findings, where available, across diverse countries, focusing on (1) the cultural and economic context of food promotion, (2) the nature and extent of food promotion, (3) the evidence on the effects on children of food promotion, and (4) the outcome of any policy interventions to alter the conditions of food promotion or of children's diet. The aim would be to determine which research and, more importantly, which lessons from elsewhere, are applicable to the UK context.

The effects of food promotion on children's food preferences, knowledge and behaviour (FSA systematic review 2)

The ideal experiment?

The FSA report (p.23) notes the Chief Medical Officer's advocacy of the 'precautionary principle' – that regulation should rest on a judgement of probable influence rather than on any absolute demonstration of the harmful effects of food promotion. This view should be taken seriously, yet the debate in this field frequently if implicitly refers to hopes of an ideal demonstration of effects.

It is important to understand why the ideal experiment has not been conducted. The point is a simple one. Only an experiment can demonstrate causality, as only an experiment controls for the many confounding factors that, in everyday life, distinguish children exposed to many, from those exposed to few, promotional messages.²⁷ However, in practice all experiments are vulnerable to the charge that they do not realistically reflect the conditions of everyday life – in other words, that their findings are not generalisable. To make an experiment generalisable, one must conduct an experiment in realistic conditions – meaning, exposing children to controlled messages in ordinary rather than laboratory circumstances, randomly assigning children to, say, 'high promotion' and 'low promotion' conditions (i.e. experimental and control groups) in a convincingly naturalistic fashion, and taking measures over the long-term rather than short-term.

However, attempts to do conduct naturalistic or field experiments typically encounter two difficulties. First, it is more difficult than in laboratory experiments to eliminate extraneous or confounding factors, reducing certainty when drawing conclusions that the observed effects are due to variation in the independent measure (message exposure). Second, if one seeks to expose children over the longer-term to hypothesised harmful exposure, one encounters serious ethical difficulties which make it unlikely that such an experiment would be permitted by a human subjects/ethics committee.

Both academic conclusions and, additionally, policy decisions, must therefore be made in the absence of the perfect test.²⁸ This is not just the case for food promotion,

²⁷ This is achieved through the elimination of the influence of confounding variables, where possible, and through random allocation of participants to experimental or control conditions in order to balance out any influence of remaining confounds. Additionally, the use of blind or double blind administration to prevent the introduction of further confounds is standard in experimental studies.

²⁸ On p.15 the FAU critique expresses a lack of understanding as to why the FSA report compares naturalistic/observational studies with experiments. However, as noted earlier, the difficulty endemic to this field is that observational studies bear a closer relation to the ordinary circumstances of viewers,

but holds also for tobacco and alcohol promotion, among many other domains.²⁹ In the inevitable absence of the perfect experiment, it has been argued that the convergence of findings between correlational and experimental studies strengthens the case for effects.³⁰ This is fair, for both are central to the claim of effects. With purely correlational evidence, the direction of causality, and the question of third causes, cannot be resolved. With purely experimental evidence, the claim that findings can be generalised to the everyday lives of children cannot be sustained.³¹ Or, to put the same point more positively, with a correlational study, one can demonstrate the existence of an association between exposure and behaviour under naturalistic conditions. With an experiment one can demonstrate the existence of a causal effect of exposure on behaviour under controlled conditions. Still, an inference will always be required to link the two.

Since only an inference can link the demonstration of effects in the laboratory with the demonstration of an association in the field, it should be clear why in the field of media effects much of the debate is methodological. Debate centres firstly on the 'ecological validity' of experimental studies (the generalisability of experimental findings to everyday situations) and secondly, on the reliability, direction of causality and possible confounding of correlational studies.³² In this respect, many of the FAU critique's criticisms of the FSA report are standard (and echoed on several occasions by Young et al, 1996).³³ the experiments are rejected for lacking external validity, the correlational studies are rejected for lacking internal validity; there is little resolution to be had here.³⁴ The situation is not helped by the heated language of some of the exchanges, nor by the flaws in the positions variously advocated. Examples include:

while experiments permit an investigation of causality: it is precisely appropriate for the FSA report to examine convergence in findings, if it exists, across these two methods.

²⁹ Parity in regarding these various potential policy dilemmas, in terms of how conclusions are drawn and policies determined, would have the advantages of parsimony and consistency.

³⁰ See the conclusions of the FSA's academic seminar held to review recent research on food promotion and children (26/11/2003). http://www.foodstandards.gov.uk/multimedia/webpage/academicreview#h_5

³¹ One wonders what the 'ideal' experiment would be that might achieve consensus across stakeholders. Can the advertising industry advise on valid and reliable measures of exposure to advertising, on consensual and meaningful categories for a content analysis of messages? On a method for conducting experiments on exposure to non-mass mediated forms of promotion? On an appropriate measure of influence or effect, especially in the long-term? Research on media effects will always be subject to criticism: the same is true across the social sciences. Hence one must ask – in whose interest are certain arguments or criticisms being advanced (Rowland, 1983)? And if there are still things that we want to know, what are they and is it practicable to find them out? This commentary has suggested that we need to know more about several aspects of this issue, and both the FSA report and the FAU critique reports suggest further questions for research. For reasons of both validity and credibility, such research must be conducted in the UK.

³² A further problem of correlational over experimental methods is their routine reliance on self-report measures. There is reason to be cautious in relation to self-report data in this field: as a rule, it is well established that people ordinarily deny that they are themselves influenced by the media, while believing that the media influence others. This 'third person effect' (Davison, 1983) is taken to reflect a cultural preference for presenting oneself as autonomous and rational, rather than as an insightful account of media influence or its absence.

³³ Problematically, Young (2003) is critical of studies which appear to claim effects, citing, for example, Coon et al (2001) for being a correlational study, albeit a careful and thorough one in which multiple controls for SES and a range of other factors are entered into a multiple regression analysis. On the other hand, Lewis and Hill (1998), one of the few studies conducted in the UK, produces muddled findings (and Young does not criticise it).

³⁴ In this particular field, one is also dealing with complex social variables – exposure to subtle media messages, desire to accede to group norms, taste preferences, consumption habits – for which there are no simple and obvious measures and for which, as a result, there may be little consensus over measurement. The FAU critique (p.6) is particularly concerned with the measures used in different studies for amount of exposure to TV advertising. Indeed, this is a well-recognised problem in media

- The FAU critique (p. 13-14) expresses a number of concerns about the language of the FSA report and of the press release that accompanied its publication. While this section is intended to undermine the FSA report's conclusions, its manner of expression instead undermines its own credibility. On p.15 the FAU critique advances a simplistic account of the relation between theory and evidence, making some inappropriate claims about the nature of 'truly objective academic research'. The implication is that if a research domain contains mixed findings, some weaknesses in design, or other reasons for doubt, that no conclusions whatsoever can be drawn unless motivated by a lack of impartiality or objectivity. This is not the practice in the academy, in industry or in government: rather one precisely attempts to take known flaws into account in drawing qualified (rather than absolute) conclusions, balancing evidence for and against a conclusion, judging what can and cannot be concluded.

- On p.11 the FAU critique inappropriately criticises the FSA report's use of the term 'quantitative', maintaining that quantitative scales must have arithmetic properties, and that instead a coding system has been used. More properly, the distinction is not between quantitative and coding, but between interval and ordinal scales – the FSA report having used an ordinal scale, this being one that does not have arithmetic properties but is indeed 'quantitative' (Hays, 1988: 67). Similarly, on p.14 the FAU critique is concerned that a statistically significant finding may be taking to be socially significant (i.e. important). As the FAU critique rightly points out, a statistically significant effect may be very small, and though the FAU critique does not make this point, it is unfortunate that the FSA neither reports nor considers the effect size (as measured statistically) of the findings included. However, it is inappropriate to imply that the FSA report's 'form of expression' here is misleading. In essence, the FSA report claims that a series of statistically significant findings have led it to draw what it considers a socially significant conclusion regarding the small but real effect of television food advertising on children.

- The FAU critique rightly criticises the evidence base, noting that much of the research reviewed is not recent, most is American, it is unclear that all relevant research was included in the FSA report, and – more contentiously – that some correlational studies are misleadingly described by the FSA report as providing causal evidence. On this last point, the FAU critique implies at several points (e.g. bottom of p.20) that the FSA report does not distinguish adequately between correlational and causal studies. However, pp.36 and 37 of the FSA report include just such a discussion. The problem, I suggest, is not that the FSA report does not distinguish correlation from causality, but rather that it has on occasion described as causal (or experimental) those studies (e.g. on p.138) which measure variation in exposure to television advertising as the independent variable but which do not exert experimental control over this variation (i.e. children were not randomly assigned to high or low exposure categories); hence these studies cannot in fact demonstrate causality as the 'third cause' problem is unresolved.³⁵

effects research, but it is unclear that better measures than those routinely used are available (c.f. Ang, 1990).

³⁵ For example, Galst and White (1976) is described as using a 'similar design' to Stoneman and Brody (1982), though the former - described on the data extraction form as a 'nonrandomised experiment' – contrasts with the latter, which was a true randomised experiment. (I would agree with Young et al's (1996: 66) interpretation of this study, namely that 'children who enjoy and are interested in television advertising will participate in consumer decision making in the supermarket'.) Further, on p.138 the correlational studies by Reeves and Atkin (1979) and others are summarised in terms of a directional

Five possible conclusions

Although the legitimacy of research inferences can always be contested, this does not mean that in practice, no conclusion can ever be drawn. Indeed, on the basis of the available research evidence in relation to food promotion and children, several conclusions may be drawn. First, it must be determined whether there is sufficient reliable and valid evidence on which to draw any conclusion. Hence, the first possibility is:

1. *Don't know.* The available research evidence is too flawed for robust conclusions to be drawn that might reasonably inform policy.

If this is rejected, at least on the basis of 'a balance of probabilities', one must decide which of these two conclusions has the greater merit:

2. *Pro-effects.* The available research evidence shows that food promotion has a causal effect on children's food preferences, knowledge and behaviour.
3. *No effects.* Notwithstanding a few exceptions, the weight of the available research evidence suggests that food promotion has little or no effect on children's food preferences, knowledge or behaviour.

The above three conclusions are clearly mutually incompatible. The 'pro-effects' conclusion, if advocated, may be subdivided into a claim regarding the extent of the effects, leading to:

4. *Modest effects.* The available research evidence shows that food promotion has a causal effect on children's food preferences, knowledge and behaviour, though this is a modest effect by comparison with more influential factors such as parental diet.

Lastly, and characteristic of the media effects debate more generally, one may concede that experiments do show effects, but then contest their relevance to real world contexts, thus:

5. *No effects in reality.* Research conducted using experimental designs does reveal effects of food promotion (in the main, of television advertising), but this cannot be straightforwardly generalised from the peculiar situation of the 'laboratory experiment' to the children's everyday lives.

These five conclusions do not exhaust the set of logical or empirical possibilities, but they do encompass the main conclusions advocated by different parties to the present debate. Which is most reasonable, or most balanced, is precisely the issue at stake. It should be noted that, across the academy and doubtless among industry and policy stakeholders, it will always be possible to find advocates for each of these conclusions. Where do the reports reviewed here stand on these conclusions?

influence of food promotion on children's behaviour, with no consideration to the alternative possibility that children who regularly request unhealthy foods might be the same as those who, on the occasion they were observed, tend to watch more television.

- Since the debate between the FSA and FAU has been framed in terms of food promotion conceived broadly, the first conclusion ('Don't know') must be reached for, as both FSA and FAU reports agree, very little research considers the effects of any forms of promotion other than television advertising.
- In relation to television advertising specifically, the FSA report, while being careful in reaching categorical conclusions, and being sensitive to the complexities and limitations of the research domain, comes down in favour of the second, 'pro-effects' conclusion. It does not consider in detail the question of strong or modest effects. The FAU critique, by contrast, rejects this second solution and appears variously to advocate each of the first, third and fifth conclusions.

An implicit consensus in favour of 'modest effects'

It is also possible, and more helpful perhaps, to interpret all the reports – FSA, FAU and Young – as agreeing on the fourth conclusion. In other words, notwithstanding the many and hotly contested arguments regarding methodology, comprehensiveness, bias, and so forth, a careful reading of apparently conflicting reports suggests that a tacit consensus across the field in favour of modest effects, as follows.

Note first that some of the differences among the reports depend on the precise formulation of the research question. Young et al (1996) argue strongly against one extreme case, saying that 'there is no evidence to suggest that advertising is the principal influence on children's eating behaviour' (p.1). This is undoubtedly the case, though but it is not clear who they are arguing against, since no references are cited suggesting that food promotion is the principal influence. The FSA report, instead, argues against the idea that food promotion has no effect (the opposite extreme case), claiming that 'food promotion is having an effect, particularly on children's preferences, purchase behaviour and consumption' (executive summary conclusions). Indeed, the FSA report makes no claim regarding the relative importance of food promotion among other influences.

The FAU critique would seem to agree that food promotion or, more specifically, television advertising, has a modest effect on children's food choices. For example, discussing studies by Bolton, and Ritchey and Olson, the FAU critique (p.16-7) quotes uncritically the claim that 'parental behaviour had a much greater effect on children's food consumption than did television... in essence the finding was that marketing variables have a small effect and non-marketing variables a much greater effect'. The expressed concern here is that this small effect is inappropriately talked up in the executive summary and, especially, the press release for the FSA report; yet the FAU critique does not appear to contest the existence of this small effect. Similarly, on p.21, the 2% figure – that food promotion accounts for 2% of the variation in children's food choice - is reported without criticism.

Young et al (1996: 86) also appear to conclude in favour of modest effects when they say that: 'Such studies [laboratory experiments] demonstrate that, in the short term, children will prefer and choose what they've just seen but this doesn't adequately simulate the role of advertising in real life. Children are surrounded by advertising for different products and brands and will utilise mental representations of this information, together with other information from peers, and past experience with

foods in order to negotiate food choice within the family'.³⁶ This is not to say that there is no ambivalence evident in Young et al's conclusions (1996: 77 and 97). Describing the study by Goldberg (1990), they summarise the findings thus: 'although this experiment tells us nothing about the processes occurring between watching and purchase, it demonstrates that a link does exist although the power of advertising's influence relative to other sources of influence cannot be determined with this study'. In other words, the study may not be able to explain the link between television advertising, and nor does it show the effect to be large; but the existence of the link is indeed accepted.

The FAU critique's conclusions again appear to grant the existence of effects when they quote, apparently approvingly, the FSA report's statement (FAU critique, p.3; FSA report p.20) that food promotion need not undermine children's health and 'could just as easily be positive as negative'. If we distinguish the existence of effects (yes or no) from the nature of the effect (positive or negative), it would seem that, in agreeing here with the FSA report that effects could as easily be positive as negative, the FAU critique grants the existence of effects – i.e. that food promotion influences children's diet.

Whether an effect is positive or negative clearly depends on the nature of food promotion. A number of studies in the FSA report indeed suggest that 'healthy' messages increase healthy food choices while unhealthy messages increase unhealthy food choices. The point of combining the two systematic reviews in the FSA report is to link the nature of food promotion with the effect of food promotion. The overwhelming evidence regarding the nature of food promotion is, to quote the FSA report, that 'the advertised diet is less healthy than the recommended one' (executive summary, conclusions). Apart from their entirely justifiable concern that most research reviewed by the FSA report's first systematic review is American and that it focuses on television advertising rather than food promotion more generally, it is important to note that the FAU critique does not contest the FSA report's conclusion that the advertised diet is less healthy than the recommended one ('we have no other criticisms of what the Hastings Review has to say in addressing the first question', p.9). Implicitly then, if not explicitly, the FAU critique appears to agree with the FSA report that most television food advertising is for comparatively unhealthy products.

In essence, then, the FAU critique has in practice granted both the FSA report's main arguments: (1) that television advertising affects children's food choice (potentially, positively or negatively) and (2) that much if not most television food advertising is for unhealthy products. The implication, then, is that in practice television advertising is having an adverse effect on children's food choice.

In an intriguing exception to this picture of an emerging consensus, Young (2003: 457) appears to have changed his mind since his 1996 report. He concludes in the later report that 'several studies claimed a direct relationship between food advertising to children and subsequent food choice. Although significant correlations have been claimed, these studies are methodologically unsound as they do not use

³⁶ In the report's conclusions, this claim is restated more clearly, although unexpectedly (and unwarrantedly) translated into the language of brands rather than food choices: 'in conclusion, there is evidence that the advertising of food products, such as cereals, to children will produce a short-term effect so that children will tend to want that brand and choose that brand'. On p.97, Young et al explain the short-term nature of this effect by suggesting that daily exposure is required to maintain the salience of the product. Daily exposure to television advertising is, however, typical of many children's lives.

longitudinal or experimental designs and both of these would be required before any claims of causality can be made'.³⁷

Notably, the academic seminar hosted by the FSA also disagree with the modest effects conclusion, claiming instead more major effects when they state that: 'the meeting considered that Young's view that advertising plays a comparatively minor role in influencing children as compared to, for example, parents and school was not supported by evidence.' Problematically, however, the evidence base for the relative influence of television advertising compared with other influences is small-to-absent. Is it 'comparatively minor'? We do know that the effect of advertising appears to be small. This is not to say that it is not important.

In conclusion, I venture to suggest not only that there is, at least within the FSA and FAU reports, a consensus that television advertising has a modest effect on children's food choice, but also that the evidence indeed supports such a conclusion. In other words, although a fair number of the (already modest body of) studies reviewed by the FSA report are flawed in design or confused in their findings (leading towards the 'no view' conclusion), several studies are more convincing (see below). Let us then consider the nature of some of these studies, both correlational and experimental.

Correlational findings

As Hays (1988: 608) notes, in correlational designs, the statistical techniques of partial and multiple regression are used when a number of variables are under investigation at the same time, and where one might want to hold one or more variables constant while examining the effects of the others, or to determine the extent to which one or more variables 'explains' the variability in the others, or to understand the relationships among a set of predictor variables and a single dependent variable. These and other techniques are widely used to infer, though not to demonstrate, causal relations among variables, particularly through such techniques as path analysis, though such inferences remain only as plausible as the theory that guides them, and only too if the researcher has paid due attention to the well-known problems of correlational studies, namely the third-variable problem and the directionality problem (Bordens and Abbott, 1988).

The FSA report identifies a series of empirical studies documenting correlations between exposure to food promotion and variables measuring children's food preferences, knowledge and behaviour (e.g. Ritchley and Olson 1983). In many, though not all of these,³⁸ careful attempts are made to control for the effects of potentially confounding factors through statistical means. It appears that even when such care is taken, the correlation of interest generally remains (e.g. Atkin 1975b, Bolton 1983, Dietz and Gortmaker 1985).

³⁷ This conclusion represents a change not only in terms of substantive conclusions but also in terms of scientific reasoning, for in 1996 Young et al had argued that longitudinal studies could not be relied upon because of the many uncontrollable factors liable to intervene between measurement points, and that experiments could not be relied upon because of the lack of external validity. Also noteworthy is that the 1996 report ended with a range of proposals for further research; the 2003 report does not stress the importance of further research in this area. As the academic seminar held by the FSA observes wryly, 'It was also noted that the relationship between Young's 1996 report and the 2003 review was unclear. The 2003 work did not appear to take account of studies indicating a link between advertising and children's behaviour, that had been cited in 1996. This might explain why the 2003 research appears to arrive at different conclusions from the 1996 report.'

³⁸ Correlational studies with unclear or poor controls include (Del Toro and Greenberg 1989; Galst and White 1976; Taras et al, 1989; Wiman and Newman, 1989). Many of these also, perhaps inevitably, produce only weak or unclear findings.

Hence, through the use of surveys, often with large samples of children, the studies reviewed here reveal a fairly consistent, statistically significant, albeit low correlation between exposure to food advertising (variously measured) and food preferences and behaviour (usually self-report data). Additionally, survey and interview studies provide supporting evidence for the pro-effect view, though it cannot establish causality. For example, Reeves and Atkin (1979) show that adults believe advertising makes a difference, that children like advertising, and that parents believe peer power to be a real factor.

The FAU critique (p.20) criticises the FSA report for implying a demonstration of causality (that the amount of television advertising viewing results in more purchase requests, for example – p.138) when only correlation has been demonstrated. To the very modest extent that this occurs, it is an appropriate criticism, for of course it may be that children who prefer certain products are more likely to watch television/advertising.³⁹ Indeed, it is unfortunate that some studies reviewed by the FSA report misleadingly describe themselves, or are described by the FSA report, as showing causation rather than mere correlation. Such description is perhaps on occasion inappropriate (e.g. Galst and White, 1976), though some of these authors seek to justify such language by considering a pro-effect conclusion the most theoretically and/or empirically plausible explanations for their findings (e.g. Atkin 1975b, Bolton 1983).

Experimental findings

The FSA report identifies a range of experiments that seek to test a possible causal relation between food promotion and children's food preferences, knowledge and behaviour (most, however, examining preferences, intentions and behaviour rather than knowledge). Although the systematic review process identified, and reported on, the judged quality of the methods used, this is not strongly used in drawing conclusions.

It is the case that, among the experiments reviewed by the FSA report, some apparently straightforward studies fail to demonstrate convincing, or even any, effects (e.g. Gorn and Goldberg 1980a; Jeffrey et al 1982 studies 1 and 2; Heslop and Ryans 1980; Lewis and Hill 1998). However, the logic of experimental research is that such studies merely 'fail to reject the null hypothesis' rather than legitimating the positive identification of 'no effects'. Hence conclusions can only be drawn from studies showing statistically significant findings (Lunt and Livingstone, 1989).

There is also a series of experiments providing more convincing evidence of the effects of food promotion on children. These include:

- Borzekowski and Robinson (2001) – an experimental study showing effects of food promotion on brand choice (rather than category switching)
- Goldberg et al (1978a/b; study 1) – an experiment showing effects of food advertisements on food selection, resulting in children choosing more sugared snacks than those in the control group.

³⁹ The study by Wong et al (1992) serves to illustrate the classic problem, for in this study, how can one determine the direction of the effect underlying the observed correlation between high cholesterol and watching more television?

- Gorn and Goldberg (1982, 1980b) - a naturalistic experiment conducted over two weeks, with the findings that adverts for fruit resulted in children drinking more orange juice, while adverts for sweets resulted in them drinking less orange juice (in this experiment, healthy public service announcements did not have the desired effect).⁴⁰
- Kaufman and Sandman (1983) - a non-naturalistic but carefully conducted experiment with a large sample of American children, found that children exposed to advertisements for sugared food make fewer healthy food choices (they chose roughly half and half healthy/nonhealthy options) compared to those who are exposed to counter advertisements (healthy messages) (who chose roughly healthy/unhealthy options with a 60/40 ratio). This study suggests that advertisements affect category (as well as brand choices), and that prosocial messages can counter the effects of advertisements.
- Ross et al (1980, 1981) – a non-naturalistic but carefully conducted experiment. Showed that adverts for soft drinks with artificial fruit flavour increase children’s confusion about the existence of fruit in the product
- Stoneman and Brody (1982) - an experiment finding that children who watched food advertisements made more subsequent attempts to influence their mother’s purchases in the supermarket, compared with the control group.

While some experiments (e.g. Borzekowski and Robinson 2001; Goldberg 1978a/b) are conducted in the non-naturalistic setting of the laboratory, raising the question of applicability to everyday settings,⁴¹ other experiments (e.g. French et al, 2001, Galst 1980, Gorn and Goldberg 1982, 1980b) are conducted in field settings (e.g. in schools), often with the intervention lasting a matter of weeks (rather than minutes). Considerable efforts have been deployed in some of these studies, in the attempt to maximise generalisability, and it would be desirable to replicate these in the UK.

***Recommendation:** Since none of the above studies, along with the vast majority of the corpus of experimental studies, were conducted in the UK, there is a strong case for replicating some of the most rigorously conducted experiments in the UK. It might be advantageous if possible for diverse stakeholders to agree on the ‘best design(s) in advance. The benefits of such a research strategy would be to generate a sound experimental corpus of studies conducted in the present, UK context. This would add to knowledge and help convince of the relevance of the findings to UK policy.*

Size of effect

⁴⁰ The FAU critique (p.17) does not disagree, it seems, with the study by Gorn and Goldberg, (1982) that viewing fruit adverts leads children to select more orange juice as a snack than did those who saw adverts for sweets. They simply question whether this study is ‘a reasonable representation of what happens in the real world’. Since the study occurred over a two-week period, with a sample of 5-8 year olds, I suspect that many parents would consider this ‘externally valid’.

⁴¹ Borzekowski and Robinson (2001) focussed on 2-6 year olds rather than older children, using an experimental design to investigate the effects of brand (rather than category) switching. Young makes a fair, and telling, criticism of this study, namely that rather than being influenced in their food preference, children were instead influenced towards ‘the right answer’. In other words, presenting an advertisement, and then a choice between the advertised and non-advertised product may simply cue young children as to the ‘right answer’ (‘I’ve seen that before so it’s the right answer’; Young 2003: 454). Note that this criticism applies most strongly to experiments on brand switching, and to a lesser extent, to those on category switching.

George Gerbner argued persuasively that, since “television tells most of the stories to most of the people most of the time”, experiments comparing those who receive a short television exposure with a control group who do not are unlikely to demonstrate significant effects. For, 'if as we argue, the messages are so stable, the medium is so ubiquitous, and accumulated total exposure is what counts, then almost everyone should be affected...It is clear, then, that the cards are stacked against finding evidence of effects' (Gerbner, et al., 1986, p.21). Unfortunately, what is most difficult is to measure the gradual effects of any media influence over substantial periods of time. However, it is possible at least to determine the size of the effects identified.

Unfortunately, few of the studies reviewed in the FSA report appear to note the effect size of significant findings,⁴² available comparisons with other factors suggest that the measurable, direct effect of food promotion on children's food preferences, knowledge and behaviour is comparatively small. It must be remembered that findings that are statistically significant may or may not be socially significant in policy terms. Requiring statistical significance is a means of ensuring that the findings are highly unlikely to have been obtained by chance. Socially significant findings, on the other hand, are those that make a difference that matters – and this is of course, a question of judgement.

It would have been helpful had the FSA report employed the statistical technique of meta-analysis – ‘a systematic quantitative technique used to ascertain relationships among variables’⁴³ by combining the findings of many studies in order to determine the overall measurable effect, taking into account the sample sizes, effect sizes, and so forth across experiments. In the case of television violence, meta-analysis shows that both correlational and experimental studies tend to reveal fairly consistent, but fairly modest effects, accounting for some 5% of the variance in the dependent variable (Hearold, 1986). Intriguingly for those concerned with the prospects for pro-social messages, statistical meta-analysis also shows that positive effects tend to be greater than negative effects (Hearold, 1986).⁴⁴

***Recommendation:** It could be possible to conduct a statistical meta-analysis of effect sizes, disentangling the factors which result in greater or lesser effect sizes (this might include the form of the promotion, the age of the child, etc).*

Turning the question around

⁴² One difficulty here is that there is a clear relationship between sample size and statistical significance. A small degree of association between independent and dependent variables may be statistically significant with a very large sample. Conversely, a large degree of association may not be significant if the sample size is small. Hence Hays (1988: 281-2 and 310) is typical of statisticians when he warns against a narrow or automatic reliance on statistical significance in determining the value of an experiment.

⁴³ Emmers-Sommers and Allen (1999). As they state, meta-analysis is useful precisely when a field is faced with the situation in which 'one study finds an effect for a certain variable, whereas another study concludes that there is no effect for the variable'. They report several fairly small meta-analyses which showed that (1) as children get older, they understand the media better, being more likely to perceive changes in content and understand them, (2) the mass media –especially television - increases knowledge and alters real world beliefs in accordance with media messages, and (3) in relation to the effects of media exposure on viewers, 'the effects for experimental research are stronger than that for survey research. However the effects for survey research are still positive'.

⁴⁴ Hearold (1986) conducted a very large-scale meta-analysis of 1043 media effects reported in 230 studies with over 100,000 subjects over the past 60 years. In general, the correlations between viewing and effect vary between 0.1 and 0.3. Further, Hearold (1986) found that the overall effect size is around an extra 20% of antisocial responses following violent or stereotyped content compared with an extra 50% of prosocial responses following prosocial content, after a single viewing session.

The possible harms (or benefits) of food promotion or advertising is a valid and important research question, part of the field of social influence and persuasion more generally. However, the central concern here is rather with children's diet, their health and the rise in obesity.⁴⁵ If one asks, as in this body of literature, 'does food promotion affect children's food preferences, knowledge and behaviour?', different sides to the debate will continue to be polarised, resulting in continued calls for better research, and continued methodological dispute.⁴⁶

Alternatively, one can ask *what* affects children's food preferences, knowledge and behaviour? Food preferences and diet are obviously multiply determined. Whether or not food promotion plays a role – and as we have seen, the evidence does appear to point to a modest role - what other factors should be taken into account to gain a more complete picture of the determinants of children's diet and health? How do these various factors interact? Which are more important, for whom and under what circumstances? And which are more or less amenable to policy intervention? This approach, I suggest, opens up some more fruitful avenues for inquiry without revisiting the polarised effects/no effects debate. Particularly, this takes us into a discussion of the range of factors involved in children's food choice.

Other factors

An attempt to identify the comprehensive range of possible factors influencing children's diet is notably missing from the FSA report, though widely discussed in the research literature, particularly the more social and cultural literature little represented in the FSA report. Few appear to disagree with Young et al when they conclude that 'future research must evaluate the relative contribution of each domain [social, physiological, etc] to the development of food choice patterns, food preferences, and eating style' (1996: 2); indeed, in its conclusion, the FSA report concurs, noting that more research is needed to answer this question.

Both FSA and FAU reports follow the research literature in concluding that parental diet or food preferences may have an influence. Less is said or, it seems, known, about the influence of other children in the peer group by either report. This is striking given the popular, if anecdotal, view that it is the fear of standing out that leads many children, supported by their parents, to join in with the peer norms in favour of sweets, crisps, chips, fizzy drinks, etc. Since these peer norms may, in turn, be influenced by food promotion and advertising, resulting in an indirect effect on children's food choices, these other factors and their interrelations require further examination.

However, the research reviewed by the FSA report provides a series of hints regarding the other factors that might influence children's food choice. Young (2003) also includes in his review some studies of 'other influences' on children's diet, especially peer and family influences. Such influences appear to include:

- *The effect of parents' own diet and approach to food on their children's diet:* in an American study, Bolton (1983) used structural modelling to examine the correlations among a series of factors – child's exposure to food advertising,

⁴⁵ It is beyond the scope of this review to comment on the evidence for the claimed rise in obesity among children in recent decades in the UK and elsewhere.

⁴⁶ This is not to deny that much could indeed be learned from further and better research, since the evidence base in this field is far from ideal. In effect, this would be further to develop Lasswell's model, triangulating more methods, refining more measures, and examining more factors separately and in combination.

parents' exposure to food advertising, parental supervision of child's television viewing and of child's food consumption, parents' diet, child's diet, etc – finding that 2% of the variance in children's intake of nutrients could be explained by their exposure to food commercials. Parents' own nutrient intake, by contrast, explained 9% of that of their children.

- *The product price is important:* French et al (2001) conducted an experimental study on food promotion (signs on vending machines), finding that while the effect of the signs ('low fat') was statistically significant, it was very small, particularly by comparison with the effect of reducing the price of the healthy food choice.
- *The socio-economic status of the household makes a difference:* An American, correlational study (Coon et al, 2001) identifies some of the other factors that affect children's diet – again these include parents' own diet, as well as lower socio-economic status, parents' nutritional knowledge, food consumption habits and norms – including television viewing.
- *The effect of public service announcements in countering food advertising:* the experiment by Galst (1980), conducted under naturalistic conditions over 6 weeks, reveals the effects not only of advertisements for added sugar foods but also of *dietary public service announcements*.
- *The mediating role of adult comments during viewing:* the experiment by Galst (1980) also shows the helpful mediating role of adult comments on the advertisements being viewed. The positive effect of adult comments during viewing raises questions of literacy (helping children understand the intentions behind advertising) and/or of social norms (permitting children to distance themselves from the normative claims of advertising).
- *The mediating role of peers in advertising effects:* Stoneman and Brody (1981), in one of the few experiments that investigate the *mediating impact of peers* on the effects of advertising, obtain clear findings that both advertising and peers have an effect on the selection of the advertised salty snack (with peers able both to increase and decrease the effectiveness of an advertisement).⁴⁷
- *The influence of prosocial television programmes in countering the effects of advertising:* Goldberg et al (1978a/b; study 2) shows, through an experiment, that viewing a *prosocial television programme* (with a positive message about healthy eating) has a greater effect on children's food selections than either advertising (for sugared foods) or a public service announcement (for healthy foods).⁴⁸
- *Even birth order may make a difference.* Ritchley and Olson's (1983) survey found a correlation between food promotion and diet mainly for older/oldest children.⁴⁹

Moreover, the FSA report notes in its recommendations for future research that the evidence on relative effects needs strengthening, a conclusion with which the FAU critique concurs, though it believes, unlike the FSA report, that such research will show food promotion to play only a minor role in children's food preferences and purchases.

⁴⁷ Unfortunately this experiment appeared to lack a no advert/just peer control condition (though it did have an advert/no peer control condition). The effects also worked mainly for black rather than white children.

⁴⁸ Young et al (1996: 73) accept these findings, suggesting that, like the FAU, they do not argue against the causal effects of media messages on children; rather that, again like the FAU, they reserve their criticisms for claims that these effects are both substantial and negative.

⁴⁹ This suggests that older children might be more influenced by advertising, and that younger children are more likely to fit in with the pre-existing family culture or practices of older siblings or, perhaps, that parents mediate the effects of advertising more with older children but are more laissez-faire with younger children.

Young et al (1996: 19-22) also offer a broader review, based less on experimental findings, which examines other social influences on children's food selection and preference. This suggests the importance of a number of social factors (caregivers choices, pairing with reward or punishment, cultural norms, etc) determining food selection (and, in consequence, food preference). However, this literature appears to be relatively small, providing too little understanding of the influence of peers, parents, cultural norms or other media or non-media influences on children's food choices, and leaving open entirely the possibility of interactions or indirect effects among these various social influences (whether mediated or unmediated).⁵⁰

In short, it appears to be consensual across the reports considered here that multiple factors influence children's food choice. This leaves open two questions. First, the range and relative importance of these factors. As we have seen, too little research has addressed the question of relative influence of diverse factors. Second, how shall we conceptualise the mode of operation of these factors? The research literature abounds in models of the influences on food choice, and this is not the place to review these. However, it is worth distinguishing between:

- Models that hypothesise multiple factors which have a single point of influence (as in Young et al, 1996, p.2), where food promotion, parental diet, peer preferences, etc all converge to influence children's food preferences. It is then assumed that a purely individual, linear, cognitive process results (in Young et al: wants → requests → parental decision → further requests). On p.3 this model is repeated, now as a flow chart, but again no social influences are shown to affect children's requests, taste preference, consequences of eating, or further requests.
- Models that hypothesise multiple factors which have multiple points of influence. This would take issue with the model in Young et al by positing not only that social influences affect children's wants but also children's requests, parental decisions, children's further pestering, and so forth. In other words, social influences, including media influences, may affect the acceptability or conventions governing the expression of wants as requests, the familial and peer cultures governing actual purchase decisions, and even perhaps the perceptions of 'nice', 'cool' or 'fun' foods once eaten. For this category of model, food promotion may influence children's food choices directly (as we have seen, a modest effect), and it may influence these indirectly by influencing cultural conventions, food perceptions, familial decisions, peer culture, and so forth (as we have seen, a set of largely-unexamined hypotheses in which food promotion is believed by many to play a less modest role).

***Recommendation:** The range of possible factors influencing children's food choice and health is at present unclear, since the FSA report did not include any studies investigating these outcomes that did not include food promotion as one (or the only) factor. Two strategies would seem advisable. First, a thorough review of the literature not simply on food promotion but including all possible influences on children's food*

⁵⁰ Young et al (1996: 41) also ask whether children see 'too many' advertisements, arguing that compared with other sources of influence, they do not. Since figures on exposure to advertising by comparison with exposure to conversations with parents, shopping trips etc, are unavailable, such a judgement cannot be made with confidence. Indeed, on this point, I suggest that Young et al misinterpret the work of audience reception researchers who do not claim that, because viewers are selective in their attention to television they are thereby less exposed to it, but rather that viewers are skilled at selective attention precisely because they have become experienced, through considerable exposure, in the nature of television contents.

choices; this may also provide indications of the relative importance of some factors, and of gaps in the evidence base. Second, new empirical research of an exploratory nature to investigate the range of influences which children, parents and others believe may possibly influence them (for example, through individual or focus group interviews). This combination of top-down and bottom-up strategies would generate a larger pool of possible influences on children's food choice. Systematic empirical research, of a more substantial nature, would then be required to compare the roles of these hypothesised influences.

Indirect influences

The above discussion has also raised the crucial problem of indirect effects. The FSA report's narrative review 1 raises in brief the issue of level of effect (whether a promotional message is held to influence an individual or the society more generally), but systematic review 2 only considers direct effects on individuals. However, as this narrative review acknowledges (p.30), recent trends in marketing practices are shifting from attempts to influence one-off behaviours towards attempts to gain long-term loyalty through lifestyles, habits, peer norms, cultural expectations, etc. These are fundamentally social, and cannot be understood as purely individual phenomena.

In short, if promotional messages achieve their effect on individuals through indirect means (e.g. by influencing 'opinion leaders; Katz and Lazarsfeld, 1955⁵¹), then it is problematic that the FSA report was not well-designed to detect this. As Yanovitsky and Bennett (1999) observe:

'For several decades, researchers' theoretical and empirical efforts to uncover substantial media effects on human behaviour have predominantly focused on the effects of direct individual exposure to media content. In general, this line of research provided evidence of minimal media effects, at best...future research efforts to uncover media effects on human behaviour may also benefit from considering the impact of mass media on the social and cultural environment that surrounds people and influences their behaviour.'⁵²

Although, as already noted, most of the FSA report, and the literature it reviews, centres on television advertising, it seems reasonable of the FSA report to suggest that research on other forms of promotion is likely to support, rather than undermine, their conclusion that food promotion affects children's food knowledge, preferences and behaviour. Most academic commentators on the broader rise in promotional (or consumer) culture take the view that multiple sources of promotional messages increase the effectiveness of the communication and make it more difficult to evade any effect (Kinder, 1999; Kline, 1993; Wernick, 1991). It is difficult to see how the FAU critique's pointing out that the promotional spend is even greater and more diverse than recognised by FSA is likely to undermine public concern over the effects

⁵¹ According to the two-step flow hypothesis, one need not demonstrate media effects on all children, merely a media effect on the 'opinion leaders'; in the second step, these opinion leaders set the norms for the rest. Have such two-step or indirect effect studies been conducted in relation to children and food advertising?

⁵² Yanovitsky and Bennett (1999) continue, summarising the views of many researchers in the field: 'Theoretically, it may be useful to consider media effects at the higher-than-individual level (i.e., societal level or group level). It is also important to address the question of cumulative effect of exposure to enduring media content. In so doing, it is also important to recognise that human behaviour change is likely to be slow and gradual rather than rapid and substantial. The methodological implications of these theoretical guidelines is that uncovering substantial media effects on behaviour requires the incorporation of the time dimension into the analysis and a multilevel analysis of the relationship between mass media content and human behavior'.

of such expenditure, though it is indeed problematic that empirical research is lacking for other forms of promotion. Since it appears that all are agreed that forms of promotion other than television advertising are of growing importance, the case for empirical research to assess the extent and effectiveness of such promotion seems compelling.

This would call for a review of a different kind of research: not solely the direct effect of promotion on individuals but also, for example, including the importance of joining, or resisting, peer norms during childhood and adolescence. So, it is widely believed that peer pressure is likely to enhance the effects of food promotion, by building unhealthy foods into the peer group norms and values, while parents consider themselves to be insufficiently effective in undermining these effects. But is this the case, and how do these different influences work together or against each other in different circumstances? It might be noted that although the public is likely to agree that parents should be held responsible for their children's media use and their diet, it is also widely agreed that even the most responsible parents cannot be expected to endanger their children's 'social acceptance' within the peer group: if some children gain social status in the playground by possessing certain toys, eating certain foods, favouring certain brands, no parent – or so it would seem – can be asked not to provide the same for their child.

Recommendation: An analysis of possible indirect and interactional effects is crucial if we are to understand the effects of food promotion and to identify possible policy tools for intervention. This should build on the identification of multiple influences identified in the previous section ("Other factors") and seek to disentangle the interlocking influences of these different factors as they directly or, more often indirectly, affect children's food choices. The role of food promotion in general, and advertising in particular, should become much clearer as a result.

Conclusions

This commentary has argued that there is a modest body of fairly consistent evidence demonstrating the direct effect of food promotion (in the main, television advertising) on children's food preferences, knowledge and behaviour. However, since the indications are that this evidence explains only a small amount of the variance, it is likely that other factors can be identified which have a greater direct effect. Future research priorities should concentrate both on attempts to replicate these experimental studies showing direct effects in the UK, and on a concerted effort to identify and research these other factors, comparing their influence to that of food promotion.

It has also been suggested that food promotion may have greater indirect than direct effects. However, this cannot be demonstrated easily, if at all, using the experimental designs required for causal claims. For many, the pervasive nature of promotional culture is obvious, yet for social scientists it remains a challenge to produce rigorous evidence for such a claim.⁵³ This is because the outcomes of interest here (children's food knowledge, preferences and behaviour) are multiply determined, requiring the simultaneous investigation of the effects of multiple interacting factors, preferably under naturalistic conditions. Even more difficult to investigate is the possibility that advertising and promotion serves more to reinforce or sustain existing levels of product awareness or interest than it does to increase them (Gerbner, et al, 1982).

⁵³ The Economic and Social Research Council is currently funding a range of research projects on the theme of 'Cultures of Consumption' (<http://www.esrc.ac.uk/esrccontent/ourresearch/culturesdetails.asp>).

In commenting on this field of research, a range of future research directions have been identified. The immediate question for the policy makers, however, is whether these modest findings of direct effects, together with the likelihood of (but difficulty of establishing) greater indirect effects, are sufficient to justify intervention in the commercial processes of food promotion to children. It will doubtless be pertinent to policy considerations, if not to the academic debate, that the public will never find it credible that an industry that spends huge sums each year advertising food to children on television does so with no actual (or intended) effect on children's food consumption.

A range of possible policy options, with variable degrees of empirical support for their likely effectiveness, can be discerned in the literature reviewed in the FSA report, including:

- Restricting food promotions to children, or seen by children
- Balancing food promotions for unhealthy foods with those for healthy foods
- Including guidance on healthy eating within television programmes
- Improving food labelling to identify clearly the nutritional value of products
- Supporting media literacy to enhance children's critical analysis of promotions
- Targeting parents so as to inform/guide/modify their own diets
- Targeting parents so as to encourage them to modify their children's diets
- Encouraging alternatives to prolonged exposure to television on the part of both parents and children
- Targeting healthy eating messages to opinion leaders within the peer group
- Countering promotions through health-conscious labelling at point of sale
- Making healthier foods cheaper

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