Heavy, Moderate, and Light: Food, Nutrition, and TV Viewing among Children

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Using various concepts of Gerbner's Cultivation Theory, namely: 1) the distinction between TV viewer profiles (light, heavy); and 2) the consequences or differing patterns of responses brought about by varied levels of TV exposure on children, otherwise known as cultivation differential, this paper explores the role of children's television exposure in their conceptions, attitudes, and preferences as regards food and nutrition. Accordingly, the above premises are observed and tested against the general arena of food and nutrition vis-à-vis children of lower to middle class (CD) socio-economic standing.

Overview

Along with the transmission of cultural heritage, mobilization, and entertainment, the provision of information remains a key function of mass media, particularly television, in any society. With reference to cultivation theory, television viewers are able to acquire information and knowledge on – among many other issues – health and nutrition as a consequence of watching television non-selectively or by watching TV portrayals with health-related implications (Gunter & McAleer 1997).

As Gerbner (1990) explains regarding non-selective television viewing: "viewers...watch whatever is offered to them" (as cited in Propositions and Critiques, n.d.). As such, it is primarily within the context of non-selective viewing that the promotion, marketing, and advertising of health and food products have begun to figure into various research endeavors. For the most part, however, such research endeavors have tended to pay cursory attention to the influence of media and/or media-related factors such as exposure to television in general or advertising in particular on perceptions about and consumption of health and food products (Helsper & Livingstone 2004).

Principally, findings of studies on food promotion over television indicate that the medium presents a variety of food product choices to children, but hardly promotes a healthy or nutritious diet. The food products predominantly advertised on television tend to be high in sugar and fat content, low in nutritional value, and are unhealthy, such as fast food selections, snacks or junk food, and soda (Jamieson & Jordan 1998; Melvin, Cardenas & Zainoor 2004). Taking different food categories into account, Yates (2004) went on to suggest that media may indeed play a role in poor diet decisions of children.

Researches on food promotion in the Philippines have also yielded similar findings in terms of the predominance of certain types of foods in TV ads

(Barra 2003; Dorado & Ducay 2001; Dy-Liacco 1997; Loza 1997; Mayuga & Siccion 1997).

Loza's (1997) study on the effects of television food commercials on the food preferences of children found relationships between: (1) exposure to TV advertisement and attitude towards the commercial, (2) attitude towards commercials and knowledge on advertisements, and (3) knowledge of advertisements and the food preferences of children. Similarly, Wright (1993), in her own study on children's exposure to food ads on TV and its accompanying effects, found that children's high knowledge of advertisements, favorable attitudes towards advertisements, and positive buying behavior were related to their high exposure to TV ads.

In contrast to the above findings, Bautista (1993) reported a "negligible" relationship between exposure to TV food ads and food preferences of children. Dy-Liacco's (1997) research on the influence of television advertisements on children's food preferences and their concept of proper food, diet, and nutrition echoes the findings presented by Bautista; she found that none of the foods advertised formed part of the study respondents' regular meals. In addition, their knowledge on proper nutrition and diet came from their parents and from their teachers. Actual foods consumed, particularly at home, were also dictated by the children's parents.

In like manner, other studies suggest certain factors influencing the way children translate food promotion to food preferences and consumption. Mayuga & Siccion (1997), for one, state that parents play a significant role, whether knowingly or unknowingly, as filters of the possible influence of commercials on their children. Gonzales (1993) adds peer groups alongside family as those that particularly influence the functions of the TV medium for children. Relating to this, Noble et al. (1997) inject a cautionary note, i.e., children, in receiving different messages about food and nutrition from a variety of sources, may ultimately have a fragmented understanding of these concepts that is not useful for making healthy food choices.

Theory, Concepts, and Research Question

Cultivation theory (alternately referred to as the cultivation hypothesis or cultivation analysis) was first introduced by Gerbner and his colleagues more than two decades ago (McQuail 1994). Cultivation, as Gerbner, Gross, Morgan & Signorielli (1994) explain, refers to the relationship between exposure to television messages and subsequent audience beliefs and attitudes. They further hypothesized that the more people watch television, the more they perceive social reality in the ways that television describes it.

Much of the research on cultivation has focused on the relationship of television viewing and the perception of violence and crime—these being anchor concepts extensively explicated and tested by Gerbner and his colleagues. However, other cultivation studies have also dealt with such diverse topics as ethnic groups (Morgan 1986), gender roles (Nathanson, Wilson, McGee & Sebastian 2002), aging (Gerbner, Gross, Morgan & Signorielli 1980) soap opera viewing (Dominick 1990; Perse 1986), racism (Allen & Hatchett 1986; Morgan 1986), alienation (Morgan 1986; Signorielli 1990), perceptions on professions (Pfau, Mullen, Deidrich & Garrow 1995), video game effects (Van Merlo & Van den Bulck 2004), and political attitudes (Morgan & Shanahan 1991). This paper takes off from these latter studies, in that it also looks at the influence of television viewing on other aspects of life, not on perceptions of violence and crime. And even as cultivation takes into account such aspects as long-term effects (McQuail1994), "first and second-order effects" (Hawkins & Pingree 1982), cultural indicators (Gerbner 1969), resonance as well as mainstreaming (Gerbner, Gross, Morgan & Signorielli 1994; Morgan 1983), this paper focuses exclusively on 1) Gerbner's distinction between TV viewer profiles (light, heavy) and 2) the consequences or differing patterns of responses brought by varied levels of TV exposure on children, otherwise known as cultivation differential. In like manner, the paper is specific to the influence of TV exposure as manifest in audience's (particularly children's) beliefs and attitudes, and not necessarily in their behavior. Accordingly, the above premises are, in the context of this paper, observed and tested against the general arena of food and nutrition vis-à-vis children of lower to middle class (CD) socio-economic standing.

The following research question is thus, posed: Is there a cultivation differential evident in the conceptions of food and nutrition held by children with varying levels of television exposure? Do children with varying levels of TV exposure exhibit differing beliefs and attitudes regarding food and nutrition as a consequence of their TV use? Specifically, this study aims to:

1. ascertain the TV-use profiles of children from the lower to middle class socio-economic groups,
2. find out their exposure to food advertisements, and their perceptions of the nutritional value and taste appeal of the advertised food,
3. identify what, to them, are nutritious and delicious food,
4. determine their preferences and attitudes regarding food and nutrition, and
5. find out their interpersonal and media sources on food and nutrition information.

Methodology

The paper is based on a secondary analysis of data generated from a one-shot survey[1] of children residing in three area-clusters identified to be of lower to middle class (CD) socio-economic standing. This secondary analysis focused on five critical measures included in the original survey instrument, i.e., the children's television use, exposure to food advertisements, conceptions of food and nutrition, preferences and attitudes toward food and nutrition, and information sources on food and nutrition.

Results and Discussion

Demographic characteristics of the sample

The original survey aimed at getting an even distribution of male and female respondents whose ages ranged from 8 to13 years. In the actual sample, girls (50.5%) only slightly outnumbered the boys (49.5%) and the children's mean age was 10.4 years. All respondents were studying, with the greatest number in the fifth grade (28.1%). The other respondents were distributed among the third (19.9%), fourth, and sixth grades (17.9% each), and first (13.3%) and second (3.1%) year high school. Most of the respondents studied in public schools.

The fathers of more than half of the study respondents worked in the service sector (e.g., janitor, construction worker, tricycle driver, etc.) while more or less the same proportion of their mothers were housewives.

Television exposure and use

All 196[2] children included in the sample watched television, with the largest proportions (68.9%) watching everyday. In terms of the duration of television-viewing, the respondents reported wide ranges of exposure, from 30 minutes to 12 hours per day (median = 2 hours per day). Taken together, and for the purposes of this secondary analysis, the number of days per week and duration of watching television were processed such that three categories of children's TV viewership emerged—light, moderate, and heavy. Table 1 shows the proportions of children falling under these categories.

Table 1. Distribution of sample, according to categories of TV viewing

	Frequency	Percentage
Light	78	39.8
Moderate	82	41.8
Heavy	36	18.4
TOTAL	196	100.0

Among the TV programs and genres watched, cartoons/animation was clearly the most favored (62.2%), while drama programs such as locally-produced *teleseryes* and foreign telenovelas dubbed in Filipino was the second favorite (44.9%). Noontime variety shows (17.3%) was a distant third and other types of programming such as reality, sports, comedy, and educational shows were even more rarely watched (less than 10%) (see Table 2).

Table 2. TV program genres most watched by respondents*

TV program genres	Frequency	Percentage
Cartoons/animation	122	62.2
Drama	88	44.9
Noontime variety shows	34	17.3
Reality shows	15	7.7
Sports	15	7.7
Comedy	8	4.1
Educational	7	3.6

*N = 196; multiple response

Essentially, the foremost genres of programs the children reported they were watching—cartoons and animated shows—coincide with data trends of previous Philippine-based studies (Acuña 2000; Gonzales 1998). The marked predominance of cartoons and animated shows in the TV-viewing roster of the children indicates that entertainment remains to supersede the information and other functions of television for children.

Television viewing was almost always in the company of others, as children (96.4%) reported to having various companions while watching television. These companions tended to be immediate family members (83.6%)—that is, parents and siblings they lived with (see Table 3). Extended family members (21.2%) such as grandparents, aunts, uncles, and cousins only sometimes served as companions to the children in TV viewing. On occasion, friends and neighbors also watched television with the children (10.6%). These findings are consistent with the results of previous studies (Dy-Liacco 1997; Gonzales 1993; Mayuga & Siccion 1997).

Table 3. Children's companions while watching television*

Children's companions	Frequency	Percentage
Immediate family members	158	83.6
Extended family members	40	21.2
Friends/neighbors	20	10.6
Others	2	1.1

*n = 189; multiple response

Information sources on food and nutrition

Data revealed the primacy of home (80.1%) and school (77.6%) as the children's interpersonal sources of information on food and nutrition. Among the media, television (70.4%) was the key source of such information (see Table 4).

Table 4. Respondents' sources of information on nutrition*

Source	Frequency	Percentage
Interpersonal sources		
Home	157	80.1
School	152	77.6
Health center workers	5	2.6
Neighbors	2	1.0
Media sources		
TV	138	70.4
Comics	22	11.2
Films	13	6.6
Books	3	1.5
Other sources	7	3.6

*n = 189; multiple response

Controlling for amount of TV viewing, the same ranking of information sources emerged. Whether among heavy, moderate, or light TV viewers, interpersonal sources remained the foremost source of nutrition information. Among heavy and light viewers, the home surpassed TV (i.e., 83.3% vs. 75.0%, and 79.5% vs. 67.9%, respectively). For moderate viewers, school sources dominated over television, i.e., 81.7% vs. 70.7% (see Table 5).

Table 5. Respondents' sources of nutrition information, by TV exposure*

Source	Light viewers	Moderate viewers	Heavy viewers
Home	79.5	79.3	83.3
School	74.4	81.7	75.0
Television	67.9	70.7	75.0
Comics	10.3	12.2	11.1
Films	5.1	8.5	5.6
Others	9.0	11.0	18.4

*N = 196; multiple response

Exposure to and perceptions about food advertisements

A big majority (62.2%) of the respondents recalled seeing food advertisements on television. In answer to an open-ended question posed regarding what advertisements they had seen, the greatest number (41.8%) pointed to fast food outlets rather than specific foods (see Table 6). Accordingly, these data trends

underscore the findings of previous studies about how fast food outlets dominate the Philippine food promotion/advertising context.

The five most recalled foods featured in advertisements were: milk (19.7%), noodles/pasta (14.8%), canned meats (10.7%), vegetables (8.2%), and hotdog (6.6%).

Table 6. Food advertisements most recalled by respondents*

Advertisements	Frequency	Percentage
Food outlets (McDonald's, Jolibee, etc.)	51	41.8
Milk	24	19.7
Noodles/Pasta	18	14.8
Canned meats (corned beef, etc.)	13	10.7
Vegetables	10	8.2
Hotdog	8	6.6
Cannot recall specific food	5	4.1

*n = 122; multiple response

When asked to assess whether the items featured in the advertisements were nutritious, most of the respondents (88.5%) agreed that they were indeed so. The nutritive value of these foods was attributed to a variety of non-food- and food-related characteristics (see Table 7). The fact that such foods had already been established either in their homes or in school as nutritious, even before they recalled seeing the ad, was the most cited (30.6%) reason. In other words, children believed that foods were nutritious because they had already seen them in their homes and school and/or were told by parents and teachers that these were nutritious.

Table 7. Respondents' reasons for deeming the food featured

Reasons	Frequency	Percentage
Even without having seen the ad, the food featured is believed to be naturally nutritious	33	30.6
Food featured is beneficial to the body	21	19.4
The food featured tastes good	16	14.8
Food has various nutrients/vitamins	10	9.3
That is what is featured on television	8	7.4
The ad said so	8	7.4
That is what is eaten, therefore it is nutrit	4	3.7
Don't know	5	4.6
No response	3	2.8

*n = 108; multiple response

in the advertisement/s as nutritious*

Other reasons for regarding food as nutritious were: their benefits to the body (19.4%), appealing taste (14.8%), and their inclusion of vitamins and/or nutrients (10%). Claims made on television (7.4%) and by advertisers (7.4%) also generated positive perceptions on the nutrition value of the foods they featured.

Asked whether they thought the foods featured in the advertisements were "good to eat" or delicious, almost all (95.1%) agreed they were so.

Taken together, these data trends indicate that more of the respondents perceived the foods featured in the TV ads as delicious as opposed to nutritious. This suggests a certain level of differentiation being made between sensory experience (taste) and cognition (knowledge of nutrition). That is, children do differentiate between what is good to eat, as portrayed in the ads, and what is actually beneficial for their bodies. This, despite the immense appeal foods in the ads are made out to have.

Probing deeper into this aspect, the measures of association computed for respondents' exposure to television and each of the three variables falling under perceptions of food advertisements yielded only the "belief of the food advertised being nutritious" having a statistically significant association with television exposure, V = .205, significance = .078 (see Table 8). Specifically, almost all moderate TV viewers (94.2%) tended to believe that the food advertised over the medium is nutritious while a markedly lesser proportion of light TV viewers (88.6%) held this belief (see Table 9).

	Cramer's V	Significance
Incidence of recall of any food advertisement	0.106	0.331
Belief that the food advertised is nutritious	0.205	0.780*
Belief that the food advertised is delicious	0.163	0.197

Table 8. Exposure to television and perceptions on food advertisements
*significant at $p < .10$

Table 9. Belief that food advertised is nutritious, by TV exposure

Assessment	Light viewers	Moderate viewers	Heavy viewers
Yes	88.6	94.2	76.9
No	11.4	5.8	23.1
TOTAL	100.0%	100.0%	100.0%

Interestingly, however, the smallest proportion (76.9%) of those who

believed that the food advertised on TV was nutritious came from the group of heavy TV viewers. This implies that the supposed influence held by television, specifically television advertising, on the health-nutrition attitudes of children may indeed be tempered by how heavily children are exposed to the medium. Initially, an increasing amount of TV exposure corresponds with a positive belief in the nutrition value of foods featured over the medium. After a certain point, however, such a positive belief will not be as clearly manifested even if the amount of TV exposure is increased. A possible explanation for this may lie in the fact that practically all children included in the study had companions while watching TV. Moreover, they cited the home and the school as their primary sources of nutrition information.

Conceptions of food and nutrition

When asked what came to mind upon hearing the term "nutritious food", the respondents gave a varied range of answers that may loosely be classified under food items and concepts/views. The children identified more specific food items under nutritious food (48 categories) as opposed to concepts/ views vis-à-vis nutritious food (17 categories).

The top five food items the respondents related with "nutritious food" were: 1) vegetables as a whole (31.6%); 2) green and leafy vegetables namely cabbage, *kangkong*, *pechay*, and *malunggay* (15.8%); 3) squash (15.3%); 4) fruits as a whole (11.7%); and 5) chicken (11.2%).

Concepts they predominantly associated with "nutritious food" were: 1) "*masarap*"- good to eat (16.3%), 2) "*pampalakas*"- provides strength (11.22%), 3) "*pampalusog*" – promotes health (5.6%), 4) vitamins (4.1%), and 5) "*gustong kainin*"- appealing to eat as well as "*pampatalino*" – promotes intelligence (both 3.6%).

Children were presented with a list of foods for assessment as to whether these were nutritious or otherwise (see Table 10). The top three foods deemed by the respondents as nutritious were fruits (99.0%), milk (97.4%), and vegetables (96.4%). Meanwhile, the top three foods deemed not nutritious were junk food (86.2%), candy (81.6%), and soft drinks (77.0%). The foods that the children professed the most uncertainty in terms of being nutritious included bacon (28.6%), canned meats (17.3%), and pizza (13.3%).

The Cramer's V measures computed for the respondents' amount of TV exposure (high, moderate, low) and each of the 31 specific food items listed in the instrument for evaluation of nutrition yielded statistically significant associations only with candy (V = .143, significance = .090) and sardines (V = .152, significance = .059). In particular, light TV viewers tended to profess more uncertainty over whether candies were nutritious or otherwise (15.4%) compared to moderate TV viewers (9.8%) and heavy TV viewers (5.6%) (see Table 11). Also, the greatest proportion of moderate TV viewers

evaluated candies to be nutritious (12.2%) compared to the light (3.8%) and heavy viewers (2.8%). Overall, more heavy TV viewers considered candies as "not nutritious" (91.7%), when weighed against the light (80.8%) and moderate viewers (78.0%).

Table 10. Assessment of the following foods as nutritious*

Table 11. Assessment of the nutritional value of candy, by TV exposure

Food	Yes	No	Don't know
Bacon	48.0	23.5	28.6
Beef	66.8	26.5	6.6
Bread	84.7	12.2	3.1
Cake/pastry	34.7	55.6	9.7
Candy	7.1	81.6	11.2
Canned meats (corned beef, luncheon meat, etc.)	53.0	29.6	17.3
Chicken	70.9	19.9	9.2
Chocolate	19.9	71.4	8.7
Corn	80.6	11.7	7.6
Dairy products (such as cheese and butter)	88.3	7.7	4.1
Eggs	88.3	8.7	3.1
Fish	90.3	7.7	2.0
Fruit juice	80.6	15.3	4.1
Fruits	99.0	0.5	0.5
Hamburger	45.9	43.4	10.7
Hotdog	55.1	33.7	11.2
Ice cream	23.0	68.4	8.7
Junk food (such as chips)	4.6	86.2	9.2
Milk	97.4	2.0	0.5
Noodles/Pasta	75.0	20.4	4.6
Nuts (such as peanuts, almonds, pili)	55.6	34.7	9.7
Pizza	47.4	39.3	13.3
Pork	63.3	28.1	8.7
Rice	93.9	4.1	2.0
Root crops (potatoes, cassava, etc.)	94.4	5.1	0.5
Sardines	47.4	39.8	12.8
Sea food (such as shellfish and crabs)	80.1	12.8	7.1
Soft drinks	13.8	77.0	9.2
Spaghetti	65.3	28.1	6.6
Vegetables	96.4	2.6	1.0
Water	93.4	4.1	2.6

*N = 196; multiple response

Hence, even while candy as a food item is viewed as not nutritious by

Assessment	Light viewers	Moderate viewers	Heavy viewers
Nutritious	3.8	12.2	2.8
Not nutritious	80.8	78.0	91.7
Don't know	15.4	9.8	5.6
TOTAL	100.0%	1.0	100.0%

most children, there is a cultivation differential evident between light (they are more unsure) and moderate viewers (a notable proportion of them still see candy as nutritious). This finding accordingly appears to negate the original premise held by researchers, such as Yates (1999), that heavy TV watching will necessarily make children predisposed to seeing foods of questionable nutrition value as truly nutritious. A possible explanation may lie in the way candy is generally taught at home and in schools, i.e., a treat that comes with undesirable effects such as the risk of cavities and diabetes.

Further analysis of data trends vis-à-vis sardines reveals that light (55.1%) and moderate viewers (47.6%) were more apt to see this food item as nutritious (Table 12). Among the heavy TV viewers, notably less than a third (30.6%) deemed sardines as nutritious. Baguioro's article (2004) in ***The Straits Times Interactive*** provides a context for understanding this seeming cultivation differential. Sardines comprise the primary food category purchased by 80% of Filipino households due to "poverty and the spiraling costs of basic goods". As such, more children who are light and moderate TV viewers may also be the ones from poorer households who have access to television but are constrained to view it for a limited number of hours[3]. Taken together with the fact that sardines is a staple offering in lower-income households, the children may have been conditioned to consider this food item as nutritious simply because it is what they and their families constantly eat.

Table 12. Assessment of the nutritional value of sardines by TV exposure

The children's unprompted associations with the term "delicious food"

Assessment	Light viewers	Moderate viewers	Heavy viewers
Nutritious	55.1	47.6	30.6
Not nutritious	29.5	41.5	58.3
Don't know	15.4	11	11.1
TOTAL	100.0%	100.0%	100.0%

similarly revealed two categories, i.e., specific food items and general concepts/views. As in the case of "nutritious food" associations, the respondents identified more specific food items (54 categories) as opposed to concepts/views (12

categories) of delicious food.

The top five food items they considered "delicious food" were chicken (35.2%); meat-based stews such as *adobo, kare-kare, menudo, nilaga, paksiw, tinola,* and *sinigang* (12.8%); hotdog (10.7%); vegetables in general (10.2%); and fish (8.2%). Concepts they predominantly associated with "delicious food" included: "*nakakatakam*" – stimulates appetite (13.8%); "*gusto*" – liked (7.1%); "*masustansiya*" – nutritious (3.1%); tasty, or of a certain flavor such as sweet, salty, and/or spicy (2.6%); and "*nakakabusog*" – makes one full (2.0%).

Generally, the patterns in children's free associations with the term "nutritious food" and "delicious food" show that: they viewed a wider variety of foods to be delicious (54 categories) though not necessarily nutritious (48 categories), they were readily able to identify what specific foods are "delicious" but were not as readily able to describe why they deemed these to be so, and that conversely, they were able to identify a lesser number of specific food items as "nutritious" yet drew from more anchor concepts in describing why they deemed such foods to be nutritious.

Children were presented again with a list of foods, this time for assessment as to whether they were delicious or not (see Table 13). Foods considered to be delicious by the greatest number of respondents were fruits (100.0%); milk (97.4%); dairy products, such as cheese and butter (94.4%); and rice (also 94.4%). On the other hand, the foods predominantly deemed as "not delicious" included junk food (56.1%), candy (49.5%), and soft drinks (32.1%). Meanwhile, children were most uncertain about the taste-appeal of bacon (17.9%).

A noteworthy finding is that the top three foods the children deemed to be not nutritious — i.e., junk food, candy, and soft drinks — also comprised the top three considered to be not delicious (see Table 14).

Likewise, the top-ranked items for nutritious and delicious foods were the same, i.e., fruits and milk (see Table 15). The difference was in the next-ranking nutritious and delicious foods. In terms of nutrition, vegetables ranked third. Meanwhile, in terms of taste, dairy products and rice shared third place.

Given that rice and dairy products were ranked lower (i.e., fifth and eighth, respectively) in terms of nutrition but were considered more delicious (i.e., sharing third rank) suggests that, to a certain extent, children will still prefer certain foods (like rice, butter, and cheese) over others on the basis of these foods' taste rather than their nutrition value.

Table 13. Assessment of the following foods as delicious*

Table 14. Foods with lowest rankings as nutritious and delicious*

Food	Yes	No	Don't Know
Bacon	73.5	8.7	17.9
Beef	79.1	17.9	3.1
Bread	92.3	6.1	1.5
Cake/pastry	93.4	6.1	0.5
Candy	45.4	49.5	5.1
Canned meats (corned beef, luncheon meat, etc.)	78.6	18.9	2.6
Chicken	92.3	6.1	1.5
Chocolate	78.1	19.9	2.0
Corn	90.8	8.2	1.0
Dairy products (such as cheese and butter)	94.4	4.1	1.5
Eggs	92.3	6.1	1.5
Fish	92.9	6.1	1.0
Fruit juice	87.8	10.2	2.0
Fruits	100.0	0.0	0.0
Hamburger	87.2	12.2	0.5
Hotdog	91.3	8.7	0.0
Ice cream	84.7	13.8	1.5
Junk food (such as chips)	40.8	56.1	3.1
Milk	97.4	2.0	0.5
Noodles/Pasta	93.4	5.6	1.0
Nuts (such as peanuts, almonds, pili)	75.0	19.9	5.1
Pizza	91.8	8.2	0.0
Pork	73.5	21.4	5.1
Rice	94.4	4.1	1.5
Root crops (potatoes, cassava, etc.)	90.8	6.6	2.6
Sardines	73.0	23.5	3.6
Sea food (such as shellfish and crabs)	82.7	13.8	3.6
Soft drinks	62.8	32.1	5.1
Spaghetti	92.9	7.1	0.0
Vegetables	93.9	4.6	1.5
Water	92.9	4.6	2.6

*N = 196; multiple response

Table 15. Foods with highest rankings as nutritious and delicious*

Food	Rank as nutritious	Rank as delicious
Soft drinks	29	29
Candy	30	30
Junk food (such as chips)	31	31

*N = 196; multiple response

Food	Rank as nutritious	Rank as delicious
Fruits	1	1
Milk	2	2
Rice	5	4
Dairy products (such as cheese and butter)	9	4
Vegetables	3	5
Root crops (potatoes, cassava, etc.)	4	17

*N = 196; multiple response

Generally, the data trends arising from the evaluation of specific foods also underscore how children appear to hold firm/clear opinions as regards the taste of foods but correspondingly express little certainty or knowledge about the nutrition value of these same foods. This finding might ultimately have the greatest implication among children who have more freedom to make their own food choices and are allowed to eat what they want, regardless of nutrition value. If "nutrition knowledge" can win over "taste" in such a case, perhaps an intervention may be undertaken to enhance their, as well as other children's, knowledge of food and nutrition.

The Cramer's V measures computed for respondents' exposure to television (high, moderate, low) and each of the 31 specific food items for evaluation as to whether they were "delicious/good to eat" yielded a statistically significant association with junk food alone, V = .147, significance = .077. In particular, the largest proportion of heavy TV viewers (55.6%) found junk food delicious, while among moderate and light TV viewers, majority (61.0% and 56.4%, respectively) considered this food item to be "not delicious" (see Table 16).

Table 16. Assessment of the taste of junk food, by TV exposure

Assessment	Light viewers	Moderate viewers	Heavy viewers
Delicious	37.2	37.8	55.6
Not delicious	56.4	61	44.4
Don't know	6.4	1.2	0.0
TOTAL	100.0%	100.0%	100.0%

At first glance, these data trends on television exposure and evaluation of the appeal of junk food among children support the assertion that heavy television viewing promotes unhealthy food preferences. However, the statistically significant differences among heavy, moderate, and light TV viewers' assessments of junk

food signal the need to investigate further the relationship between TV exposure and food choices. It may be possible that – for children whose TV exposure is moderate or light – TV viewing will not result in a greater likelihood of making unhealthy food choices.

In addition, there are a number of possible explanations unrelated to TV viewing. A plausible one is that junk food, alongside candy, has long been held as an example in schools, not to mention at home, as patently unwholesome (i.e., junk). Thus, a certain level of negative conditioning could be at play and children's aversion to such messages of negative conditioning towards junk food could have translated into their negative assessment of the taste of this food.

On the other hand, perhaps a more precise answer to this question may be gleaned through an extensive study that probes not only into the television use profile of children but also the contextual factors that come into play in their food preferences and nutrition attitudes.

Food preferences and attitudes relating to nutrition

The open-ended question inquiring into the respondents' favorite food yielded "chicken" as the item most favored (34.7%). Vegetables (26.5%) and pork (18.4%) round up the top three favorites[4]. Children generally regarded their favorite foods as nutritious, for the reasons that these have vitamins/nutrients to strengthen the body (32.7%) and they are delicious (21.2%). As evidence of the influence of interpersonal sources on their food and nutrition ideas, other reasons given for saying that their favorite foods are nutritious were: they have long known or recognized the food to be nutritious (11.5%), and a family member said so (3.0%).

There was almost unanimous (97.4%) agreement that nutritious food can be delicious at the same time. Similarly, almost all (98.5%) saw the importance of eating nutritious food in order to be strong (39.4%), healthy (34.7%), and intelligent (12.4%).

The Cramer's V measures computed for the respondents' exposure to television (high, moderate, low) and each of the three variables falling under food preferences/attitudes relating to nutrition yielded only the "perception of respondent's favorite food as nutritious" to have a statistically significant association with television exposure, V = .224, significance = .007 (see Table 17). Considering the differences in how light, moderate, and heavy TV viewers (92.3%, 82.9%, and 69.4%, respectively) perceived their favorite as nutritious, a clear data trend is revealed – suggesting that higher levels of TV exposure correspond to a progressively negative assessment of the nutritional value of one's favorite food (see Table 18).

Table 17. Exposure to television and food preferences/attitudes relating to nutrition

	Cramer's V	Significance
Whether respondent thinks his/her favorite food is nutritious	0.224	0.007*
Whether respondent thinks nutritious food is good to eat	0.143	0.137
Whether respondent thinks it is important to eat nutritious food	0.073	0.594

*significant at $p < .10$

Table 18. Respondents' belief that their favorite food is nutritious, by TV exposure

Assessment	Light viewers	Moderate viewers	Heavy viewers
Yes	92.3	82.9	69.4
No	7.7	17.1	30.6
TOTAL	100.0%	100.0%	100.0%

Bearing in mind that the favorite food items that the respondents reported predominantly included chicken, vegetables, and pork (in that order), one is then faced with the challenge of reconciling how these aforementioned foods may be considered "not nutritious" by a large proportion of heavy TV viewers. A possible explanation to this seeming enigma may lay in the dearth of advertisements that feature these favorite foods and an even greater dearth of promotional messages espousing these foods' nutritional values.

While it may be argued that food advertisements could hardly be considered as primary sources of information on nutrition, data trends revealed by this secondary analysis point to television as "right up there" among the entities identified as children's key information sources on food and nutrition. Hence, if these foods and their nutritional value are not consistently promoted through such advertisements, the children's— i.e., young TV viewers'— avenues for verifying/ascertaining the nutrition value of these foods through the medium are limited. This is not to say that food advertisements are the sole means through which nutritional messages can be conveyed to children over TV. Television programming serves the same informational function, with potentially even greater effect than direct advertisements.

Conclusion and Recommendations

The findings of this study have pointed out certain cultivation differentials in the conceptions, preferences, and attitudes on food and nutrition held by children with varying levels of television exposure. Its findings raise questions regarding earlier assertions about high television exposure predisposing children to prefer non-nutritious food and about children automatically deeming foods advertised over television as delicious. In effect, this study has raised questions on how and why children with varying levels of television exposure know what they know and feel what they feel about food and nutrition.

To answer these questions and to give more light to the cultivation effect of television in a food promotion context, it is necessary for communication and media research to probe into long-term resonance and mainstreaming effects of television exposure on the formation of children's food and nutrition knowledge, preferences, and attitudes. Also, given that this secondary analysis worked only on available data, other variables including psychographics need to be identified, gathered, and analyzed to better understand the television exposure-knowledge-preferences dynamics among children.

It is recommended that advertisers, instead of merely influencing children's food choice, also help enhance their nutrition knowledge. This, of course, could prove to be an onerous undertaking given that the biggest food advertisers are the fast food outlets whose offerings have, as yet, questionable nutrition value. In this regard, TV producers, together with stakeholders, can take on the challenge to develop programs promoting nutrition for children and the parents. Additionally, media and communication schools are in a central position to promote health education.

Also strategically situated are elementary and high schools whose media literacy programs should aim to improve the children's skills in understanding television realities. Moreover, as this study has shown that children's conceptions of food, health and nutrition are far from being simplistic, their knowledge on such may be better honed by the schools' development and utilization of learning materials that could help them process television messages more effectively.

Notes

[1] The original data were gathered for **Children's concepts of food and nutrition: Survey for children**, a study conducted as part of the 2004 summer internship activity of Bicol University students at the Communication Research Department of the UP CMC. Data from this survey were used to develop IEC materials aimed at informing children and their parents about proper nutrition.

[2] The original sample was comprised of 200 respondents; however, four questionnaires were excluded from the analysis.
[3] Reasons for limited television viewing among these children vary, including giving way to others' TV show preferences, the need to save on electrical costs, and the fact that they may be viewing in other peoples' houses.
[4] It should be noted that some children reported as many as three separate food items as their favorites.

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