Healthy Choice?: Exploring How Children Evaluate the Healthfulness of Packaged Foods

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ABSTRACT

Objectives: Today's supermarket contains hundreds of packaged foods specifically targeted at children. Yet research has shown that children are confused by the various visual messages found on packaged food products. This study explores children's nutrition knowledge with regard to packaged food products, to uncover strengths and difficulties they have in evaluating the healthfulness of these foods.

Methods: Focus groups were conducted with children (grades 1-6). Particular attention was paid to the ways children made use of what they know about nutrition when faced with the visual elements and appeals presented on food packaging.

Results: Children relied heavily on packages' written and visual aspects – including colour, images, spokes-characters, front-of-package claims – to assess the healthfulness of a food product. These elements interfere with children's ability to make healthy choices when it comes to packaged foods.

Conclusions: Choosing healthy packaged foods is challenging for children due to competing sets of knowledge: one pertains to their understanding of visual, associational cues; the other, to translating their understanding of nutrition to packaged foods. Canada's Food Guide, along with the curriculum taught to Canadian children at schools, does not appear to provide children with the tools necessary to navigate a food environment dominated by packaged foods.

Key words: Child; nutrition; food labeling; food preferences; nutrition labeling; product labeling, food

La traduction du résumé se trouve à la fin de l'article.

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Supermarket food products designed to appeal to children frequently feature cartoon images (including characters from popular television shows/movies for children) and/or they promote food by using appeals to fun or play. Such packaging is designed to capture attention, not to help children make informed, healthy choices.¹ While previous research has explored the effects of advertising on children,²⁻⁴ children's understanding of advertising's intent,⁵⁻⁸ branding's influence on children's tastes⁹⁻¹² and spokes-characters' influence on children's choices,¹³ this study probes how children assess the healthfulness of packaged foods. Specifically, it examines children's views on why they selected particular packaged foods as "healthy" choices over similarly packaged edibles in the same product category.

Studies focusing on how children interpret food products show that the children have difficulty evaluating the healthfulness of packaged edibles.¹⁴ Visual aspects of packages – such as colour, design and image – strongly influence children's evaluations (often incorrect) of the healthfulness of foods, and also impact the overall desirability of the food.¹⁵ By examining children's selection of a "healthy" packaged product (out of various choices), and their subsequent discussion of what made that product the "healthy" choice, this study highlights how various symbolic appeals on packaging affect children's understanding of a product's nutritional qualities. The article concludes with recommendations on how to bolster children's interpretive strategies when it comes to evaluating packaged foods for healthfulness – and with a comment on why such bolstering (in light of marketing strategies employed by the food industry) may not be enough.

METHODS

This study draws from data collected from a broader, federally funded research project focused on children's interpretations of packaged food products. Focus-group methodology is increasingly viewed as a productive method for discovering children's attitudes, perspectives and ideas.¹⁶ This approach, moreover, is particularly appropriate for the question of children's interpretations of packaged foods since it allows for open-ended responses from the participants, which can be probed and clarified.

In 2009, 52 focus groups were conducted with a total of 225 children in three cities in Canada (Calgary, Alberta; Ottawa, Ontario; and Fredericton, New Brunswick). Children were divided according to grade with separate focus groups held for grades 1-2 (G1/2), 3-4 (G3/4), and 5-6 (G5/6), so as to reveal potential differences in opinion according to age. (Separate focus groups were held for boys and for girls, although differences according to gender were not the focus of this particular analysis.) Each focus group was an hour in length and had four to six children participants. Creating a small group setting was strategic, since it creates a space that encourages participation from shyer children.¹⁶

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A moderator, following a semi-structured moderator’s guide, asked questions pertaining to packaged foods targeted at children. Pertinent to this analysis, children were shown a variety of packaged food products from the same product category to examine and evaluate. Children were asked to identify the foods that they considered the most healthy, and to explain why they chose those packaged product(s) over the other options available.

Institutional ethics certification was granted for the study; written child and parental consent was obtained prior to the focus groups. Children were informed that they did not have to participate (or answer) questions should they choose not to, and that they could stop (or leave) at any time. Although some children said they did not know the answer to certain questions, all chose to participate. The small number of participants in the focus groups ensured that every child could respond to each question posed. The moderator addressed the children in a round-table format, varying the order in which children were asked questions, but giving each child the opportunity to explain their choice. This allowed the analysis not only to draw out themes, but to provide some (albeit general-istic) level of detail in terms of the frequency of reliance on certain themes over others according to age. The moderator probed for elaboration on answers where appropriate, and allowed for open discussion between participants. Children’s responses were transcribed verbatim. Themes were identified and insights crystallized; iterative comparison and inductive coding techniques were used, following a grounded theory approach. Qualitative research software (NVivo) was used to facilitate the process.

RESULTS

Children of all grades (1-6) revealed a general inability to evaluate the healthfulness of a packaged food. They used package colours, spokes-characters, pictures, and front-of-package (FOP) claims, to support their choices of healthy foods. While some children used information from nutrition facts tables and ingredient lists in their assessments, these were often used ineffectively. Figure 1 presents the breakdown of children in each grade who discussed colour, spokes-characters, FOP claims, (etc.) in their evaluation. Table 1 provides relevant quotations from the children that support the themes discussed.

Colour

Children across all grades used package colours to determine what comprised a “healthy choice”: 22% of children from the G1/2 focus groups specifically relied on this, as did 14% of children from G3/4 and 19% from G5/6. Indeed, colour might function as the sole criterion for judging a product as healthy or unhealthy. For G1/2 children, a packaged food was labeled healthy “maybe cause it’s green” or unhealthy because (for example) the “rainbow” of colours on a box of Lucky Charms® cereal meant it was “like a rainbow of sugar.” Some children in G3/4 provided more elaborate reasoning: products were deemed healthy because “they don’t add like sugars and coloured stuff.” The G5/6 children consistently identified colour – particularly artificial colour – as an object of critique. As one child remarked about a packaged product she deemed unhealthy: “They’re not natural colours as in fruits.”

Foods with muted colours, in contrast, were deemed more healthy. Children identified cereal boxes with “not a lot of colour” as the healthy choice. One child picked a box of Cheerios® as the

Figure 1. Breakdown of children (according to grade) who discussed colour, spokes-characters and branding, front-of package claims – and/or provided literal “readings” of text and images – in choosing healthy packaged foods

healthiest option out of seven choices, in part because “Cheerios® have no colours” (G1/2); another (older) child similarly observed that Cheerios® were healthiest because “they don’t add like sugars and coloured stuff” (G3/4). Identical reasoning was provided by G5/6 children.

Colours on packages also represented other things children understood as being healthy, such as associating green with vegetables: “the colour green represents organic or healthy because a lot of healthy vegetables are green and organic is healthy and sometimes it’s more healthy than other foods” (G5/6). These comparisons also paralleled issues of literalism (discussed below) in packaged food interpretation.

Literalism in text and image

Literalism – taking the strict interpretation of a word or image (without accounting for metaphor or exaggeration) – was present in the children’s responses. Literal interpretations became less common as children got older, although all of the explanations held interesting insights. For example, when asked to explain why he chose Life® cereal as the healthiest of seven cereal options, a child in G1/2 explained, “Usually if they’re talking, Life® is good for you because they’re actually worried about your health.” Another G3/4 child said “And it gives you life!” In G5/6, a child mused: “I don’t know why but something struck me with the title ‘Life’ that it has something to do with healthy things in life...”

Other interesting instances of textual literalism emerged in G1/2 students’ interpretation of “Fat Free” as meaning to get the ingredient of fat for free. Two representative examples include: “because if they put more fat, that means they put fat free” (G1/2); and “yeah, fat free, and, and it’s free.”

Table 1. Children Describe How They Choose Healthy Packaged Foods; Sample Quotations

Findings	Details	Moderator: Which one of these foods do you think looks the most healthy or good for you? Why? Is there something on the other boxes that makes them look less healthy? What is it?
Colour	Colour can act as a sole criterion for judging a product as healthy or unhealthy	"When there is green on the box, it means it's healthy" (Grades 1-2) (G1/2) "The colour is green and green is ...good ...[it means the] environment and green which is good" (G1/2) "Green stands for good!" (G5/6)
	Colour can be unhealthy	"Um well some of the stuff just looks really fake and like colourful and even though that looks fun it can be really unhealthy" (G3/4) "...it's like different colours and that means that they put in food colouring or like something to change the colour... when it's healthy cereals...it's more white" (G5/6)
	Lack of colour indicates "healthy"	"the one that is healthy is... the white box" (G1/2) "the Organics® because there's not a lot of colour and made up characters on the box, it's just actually showing you what's inside" (G1/2) "because lots of healthy brands have the black writing at the top. Also, because all this stuff is usually in the white box" (G5/6)
Literalism in text and image	Children's literal interpretation of packaged foods complicates their decision-making processes	"...that one (Life® cereal) says ...um...a check on it. If it was an "x" it would mean not healthy like sugar and a check mark means no sugar" (G1/2) "The Life® [cereal] because it has a peach on the box" (G1/2) "Crunchy Corn® because it has like strawberries in it and it's got corn" (G3/4) "I know it's healthy because there's green and that is the colour of life and plants" (G1/2) "Honey Combs [cereal]...um cause they have honey in them" (G5/6)
Spokes-characters branding	A spokes-character (or licensed character's) presence could be interpreted as unhealthy	"Dora's not healthy at all...cause it's Dora!" (G5/6) "Elmo isn't healthy... he's all scruffy" (G5/6) "I just laughed because Dora is not healthy and everybody laughed because we're thinking of the cartoon person on the candy. It's gummy worms or gummy bears, or gummy gummy gummy Dora" (G5/6) Moderator: "Why do you choose this as the healthiest of the three?" "... because it's not from a movie? (G1/2)
	A spokes-character or brand's presence could be interpreted as healthy	Moderator: "Why do you choose this as the healthiest of the three?" "Cause it's Quaker®... and I have a bag of Quaker® flour and it says that it's really healthy on the back" (G3/4) "The Life® looks healthy, they pour the milk a certain way, and it's Quaker® – it's a popular company that lots of people like to buy" (G3/4) "... it has the organic thing on it, and it's the President's Choice company" (G3/4) "...it has that [Quaker®] dude and I am pretty sure that he's a lot of healthy food" (G5/6) "I usually look for a company that I know doesn't make treats and makes more meals. I think President's Choice" (G5/6)
Children use front-of-package claims to make healthy choices, yet have little understanding of their meaning	Front-of-package claims were typically understood as presenting positive characteristics of healthy food	"Um, the check mark on the Fun Bites®...on the corner. Helps people see that it's healthy!" (G5/6) "Fruit bars because on the box it says contains vitamin C...hmm...I'm not... not really...and it says no sugar added" (G3/4) "... um see that little check mark at the bottom of that Life® box...uh, I think it's sort of like checking off like a health list of something" (G5/6) "I think the Life® one ... it has the little check mark thingies here – low in saturated fat, zero trans fats, source of fibre" (G3/4)
Children need help applying their knowledge to nutrition facts and ingredients lists	Children could not thoroughly interpret nutrition facts and ingredients lists due to incomplete knowledge	"sometimes on the back, it shows you what it is has in it – some people have allergies, and they need to look what they have...on the side or on the back" (G1/2) "the nutrient facts – how much calories it has, if they have added bad things like chemicals, preservatives, artificial things" (G3/4) "the Life® one cause I was just reading, I was looking at this...I thought it's sort of like a percentage and it's made with 100 whole grain oats and I was looking down here where it says no trans fat in it and source of fibre" (G5/6)

The most common mistake children made, however, was thinking that packages contained particular ingredients (that were not actually present) due to the pictures featured *on* the package. In the focus groups, children consistently identified cereal boxes featuring an image of a bowl of cereal with sliced fruit in it as the healthiest option – even though the box(es) in question did not contain any fruit. Pictures of milk on a package also prompted some children to classify the cereal itself as healthy (although this occurred less frequently).

Moderator: Which box of cereal is the healthiest?

- Life® cereal "because it has fruit" [points to picture of sliced peaches on the front of the cereal box] (G5/6)
- "Crunchy Corn® because it has like strawberries" [points to picture of strawberries in bowl featured on the front of the cereal box] (G3/4)

Simply put, these items *not* in the package made children of all grades claim a product was "the healthiest" out of numerous similar options.

Spokes-characters and branding

Certain spokes-characters, such as Toucan Sam® and Lucky the Leprechaun®, were interpreted as signifying an unhealthy product, whereas other spokes-characters *explicitly associated with brand lines* were cited as indicators of healthy food. These associations, of certain spokes-characters with "unhealthy" and certain brands with "healthy" (regardless of the product), increased dramatically as children got older (i.e., G1/2, 7%; G3/4, 20%; and G5/6, 40%).

Older children recognized how spokes-characters might attract younger children to less nutritious products. When spokes-characters were mentioned in terms of health, it was either in combination with a brand or, notably, the *absence* of a spokes-character that indicated health for children. In the first case (brand spokes-characters and health), several children in G3/4 explained that a packaged food was healthy *because* "it has the Quaker® dude" on it. Some children associated the brand across individual product lines: [It's healthy] "cause it's Quaker®... and I have a bag of Quaker® flour

and it says that it's really healthy on the back" (G3/4). In the second case (the *absence* of a spokes-character), some children used this "lack" as an indicator of health, as per the child who identified Organics Crunchy Corn® cereal as the healthy choice because "there's not a lot of colour and made-up characters on the box" (G3/4).

Front-of-package claims

When analyzed according to grade, it was evident that children in the focus groups increasingly relied on and trusted front-of-package (FOP) claims to help them to make healthy choices, yet continued to have little understanding of their meaning. The percentage of children who spontaneously referenced a FOP claim to justify *why* a product was healthy rose from 27% of children in G1/2 to 53% in G3/4 and up to 69% in G5/6.

Claims such as *Organic*, *Fat Free* or *Goodness Corner* were typically understood as positive characteristics, even though the product might be nutritionally lacking in other ways (i.e., low in fat but high in sugar; organic but high in sugar, etc.). Children frequently interpreted these claims literally:

- "It says fat free, so you won't get fat" (G1/2)
- "It's from the Heart and Stroke Foundation – that means that like it's good for you and it won't give you a heart attack" (G3/4)
- "Behind the O for Organics there's a leaf which is natural, so it's made from something natural" (G5/6).

One striking aspect of such claims was their influence on children's interpretations of healthy foods. FOP claims and/or nutrition "corners" found on boxes of cereals such as Honeycomb®, Alpha Bits®, Lucky Charms® and Froot Loops® successfully convinced six children in G1/2 that the cereals were a healthy choice. During group discussion (led by the moderator) about the nutrition claims, eight children in G3/4 changed their minds, subsequently labelling Honeycomb® cereal, PC Organics Crunchy Corn® cereal and Lucky Charms® cereal as a "healthy food". Four children in G5/6 similarly changed their minds to declare Life® cereal and PC Organics Crunchy Corn® cereal as the healthy choice.

Nutrition facts and ingredients lists

In all grades, fewer children relied on nutrition facts and ingredients lists than FOP claims in making healthy food choices. Not surprisingly, when they did use nutrition facts and ingredients lists, their knowledge base was shown to be incomplete. The few G1/2 children who discussed the nutrition facts table were vague on how one might actually use it: "I would look at the label on the box....Um, if you look what I did is when I looked at these and I saw the ingredients and noticed a little bit of sugar in it." These children often resorted to using FOP claims to justify their initial explanations: "that's good because there's no fat...no bad fat. See, it says fat free, so there is no bad fat in there" (G1/2).

The G3/4 age group offered no consistent "reading" or treatment of the nutrition facts table, nor was there clarity on what children felt they should be looking for: "I'm always looking for tons of different things on that side" [referring to where the nutrition facts table appears] "and it helps and it comes in handy lots, and it can tell you what kinds of things are in it" (G3/4).

Most children in G5/6 were equally vague about how they used the nutrition facts table and ingredients list; some children, however, were able to express its complexities:

"I look at the side where it says, um, calories, and, um, sodium and everything. But, um, you have to be careful because sometimes, it says like, you look on a chip bag sometimes and it says like, say the chip bag is sixty grams, it'll say like sixty calories or something per 30 grams. But you have to add... because if you eat the whole chip bag it's twice that right? You can't be too careful. Well, sometimes, they say sensible solution, but that's only if you add something. They're very tricky about that."

DISCUSSION

Children's worlds are filled with packaged food products – yet children have not been provided the tools to evaluate packaged foods for their healthfulness. This study draws attention to some common stumbling blocks encountered by children when asked to identify and explain why a packaged food is a healthy or unhealthy choice. Children provided savvy – if incorrect – explanations of why a packaged food was healthy (or not), relying heavily on visual and associational cues. Drawing from knowledge gained (presumably from the school nutrition curricula and home) about healthy eating, children applied this knowledge to evaluate packaged edibles. While their logic was impressive, the assessment was often flawed, as per declarations that the colour green or a picture of fruit or the absence of a spokes-character on a box signaled a healthy food. Such literal interpretations trumped children's use of the nutrition facts table and ingredients list. The study revealed, quite clearly, that children need help navigating the complexity of the visual packaged food environment. In short, *nutrition literacy* (the skills of evaluating, processing and understanding basic nutrition information) needs to be accompanied by *media literacy* (the ability to access, analyze and evaluate messages across a variety of contexts) when discussing packaged food.

Certainly, extensive data exist on how children understand food advertising,^{3,6,7,17} and previous research has shown that cartoon characters can influence children's taste and snack preferences,^{18,19} or increase a child's interest in fruit.²⁰ However, studies on how children interpret *packaged* foods are rare.¹⁴ Previous research has shown, however, that children identify "serious" looking packages with healthy food,¹⁴ and also classify "kids" food as "fun" compared to "boring" adult fare.¹⁵

When it comes to children's views on food and nutrition, focus group research has probed the "major barriers" children identified with regard to healthy eating (such as taste, appearance of food, rebellion),²¹ as well as the relationship between television viewing and children's nutritional knowledge and reasoning.²² More importantly, research has shown that children's preference for healthy foods (particularly fruits and vegetables) increases along with their cognitive abilities as they age and come to understand the importance of health.²³ Research has also found that on-package nutritional claim information sometimes had "a backlash effect" on children, "causing them to make unhealthier choices when on-package claims are present"²⁴ – a finding supported by the children in this study who "flip-flopped" on their choice of a healthy product after observing a FOP claim.

One of the core calls in policy initiatives to promote the health of Canadian children is to make the healthy choice "an available and easily recognizable option".²⁵ This study suggests a new, and remarkably significant, point for consideration – namely, that the school-aged children interviewed did not have the knowledge base

to “easily recognize” a healthy choice when it comes to packaged foods. Their interpretive strategies were intelligent, but often contradictory or wrong-headed. At this point, it remains important to underscore that this study did not seek to document whether the children could identify some *predetermined* “healthier” packaged product from a range of packaged products. This type of approach transforms the line of questioning on *why* the children made the choices they did into more of a documentation of correct or incorrect answers. (Indeed, the determination of a healthiest packaged option confounds many adults, since in many instances, the difference between regular packaged goods and “better-for-you” is simply a difference of degree and not of kind. Health claims/appeals to health are sometimes more about marketing than nutrition,²⁶ and the argument can be fairly made that a “less-bad-for-you” processed product is still a heavily processed product.) Rather than trying to figure out whether the children could identify a predetermined “healthier” packaged product, the point of the study was to consider *how* children choose “healthy” – that is, what frames of reference they use, what semiotic, associational or linguistic cues, and what counts as relevant (or irrelevant) when asked *what they look for to know whether a packaged food product is healthy*. Although one might question whether it is reasonable to assume that children should be able to understand health claims or the nutrition facts table – Nutrition Facts is designed for adults, not children – it is important to underscore that children *are* interpreting these packaging appeals, regardless. They have clear opinions about packaging and health, and it is therefore productive to understand what interpretations they have. Moreover, the school curriculum suggests that children *should* have a complex level of reasoning when it comes to nutrition. The Government of Alberta Curriculum, for example, states that (as a learning outcome), by the end of Grade 2, children will be able to classify foods according to *Canada's Food Guide to Healthy Eating*, and “apply knowledge of food groups to plan for appropriate snacks and meals.”²⁷ Grade 3 children are asked to deal with nutritional labels.²⁷ And by the completion of Grade 4, children are expected to understand the “role of protein, fats, carbohydrates, minerals, water, vitamins” in the diet.²⁷ This grappling with food classification, labels, and the function of key nutrients in the body demands a complex level of reasoning – reasoning that is complicated by the fact that the Canada Food Guide (on which children are supposed to base their decisions) does not deal with packaged foods in the first place. The children’s answers suggest that the school curriculum, based on Canada’s Food Guide and the merits of whole, unprocessed foods, does not provide children with the tools they need to navigate our contemporary foodscape, which is filled with packaged edibles.

CONCLUSION

This study demonstrated that children lack the media literacy necessary to make effective nutrition choices with regard to packaged foods. Package colours, images, spokes-characters, brands and FOP claims influenced children’s ability to evaluate the products based on the nutrition facts table and ingredients list. Clear opportunities exist to move beyond merely telling children *what* foods are healthy (e.g., fruits, vegetables) to teaching them to critically evaluate packages. This means providing children with the type of information that allows them to sidestep common errors of interpretation (e.g., green or fruit on the box = healthy food) so that

they may truly make the healthy choice in an environment dominated by packaged goods. Though policy changes are needed to ensure that the packaged foods promoted to consumers as healthful are indeed healthful, in the interim it would be wise to arm our youngest consumers with a tool kit that allows them to avoid the common stumbling blocks (described above) when it comes to evaluating packaged foods.

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RÉSUMÉ

Objectifs : Les supermarchés d'aujourd'hui proposent des centaines d'aliments emballés qui ciblent particulièrement les enfants. Or, des études ont montré que les enfants sont déconcertés par la grande variété des messages visuels que l'on trouve sur les emballages d'aliments. Nous explorons ici les connaissances nutritionnelles des enfants en ce qui a trait aux aliments emballés pour découvrir les forces et les difficultés des enfants lorsqu'il s'agit d'évaluer si des aliments sont bons pour la santé.

Méthode : Nous avons mené des groupes de discussion avec des écoliers (de la 1^e à la 6^e année) en portant une attention particulière aux façons dont ces enfants utilisent leurs connaissances sur la nutrition quand ils sont confrontés aux éléments visuels et aux incitations des emballages d'aliments.

Résultats : Les enfants font beaucoup appel aux aspects écrits et visuels de l'emballage (couleurs, images, personnages porte-parole, allégations sur le devant de l'emballage) pour évaluer si un produit alimentaire est bon ou non pour la santé. Ces éléments nuisent à leur capacité de faire des choix sains lorsqu'il est question d'aliments emballés.

Conclusion : Il est difficile pour les enfants de choisir des aliments emballés bons pour la santé, car deux jeux de connaissances s'opposent chez eux : l'un a trait à leur compréhension des repères visuels et associatifs, et l'autre, à l'application de leurs connaissances nutritionnelles aux aliments emballés. Ni le Guide alimentaire canadien, ni les programmes enseignés aux enfants canadiens à l'école ne semblent leur donner les outils nécessaires pour s'y retrouver dans un environnement alimentaire dominé par les produits emballés.

Mots clés : enfant; nutrition; étiquetage aliments; préférences alimentaires; étiquetage nutritionnel; étiquetage produits (aliments)