

Research Report

Kids, cartoons, and cookies: Stereotype priming effects on children's food consumption

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Abstract

In studies with adult participants, exposure to a prime that activates a stereotype can lead to stereotype-consistent behavior. Given significant differences in cognitive development, stereotype formation, and use of stereotypes from early childhood to adulthood, the emergence of such behavioral priming effects in childhood is uncertain. To begin addressing whether children exhibit behavioral priming effects from stereotype exposure, we conduct three experiments in which children are exposed to either a normal weight or overweight cartoon character prime, and subsequently (as an unrelated activity) have access to high energy, low-nutrient food. Our results with children from 6 to 14 years old indicate that overweight cartoon character primes can activate the overweight stereotype, leading to relatively high levels of food intake. This effect persisted when participants were simultaneously exposed to a normal weight and an overweight character together (study 2), and was successfully moderated by the activation of health knowledge (study 3).

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Introduction

Worldwide, obesity rates for children are increasing at an alarming rate (de Onis, Blössner, & Borghi, 2010). In the U.S., childhood obesity has tripled to 17% during the past 30 years (Ogden, Carroll, Kit, & Flegal, 2014). Obese youth are likely to have a variety of health risks (Freedman, Zugno, Srinivasan, Berenson, & Dietz, 2007) and they are more likely to be obese as adults (Daniels, 2006). Thus, understanding influences on children's eating behaviors, particularly choices of high calorie "unhealthy" foods, is important.

A variety of environmental cues influence adults' eating choices (Wansink & Chandon, 2014), and such cues may

similarly affect children's choices. Among adults, the amount of snacks selected by both obese and healthy weight others positively impacts the amount of snacks that individuals choose (McFerran, Dahl, Fitzsimons, & Morales, 2010). Similarly, Campbell and Mohr (2011) found that exposure to individuals who are overweight can activate the overweight stereotype and lead adults to choose and consume more unhealthy food.

While research reveals that the weight of other people influences adults' eating choices, little is known about such influences on children. Could exposure to overweight cartoon characters have similar effects on children? Cartoon characters are increasingly prevalent in children's and teens' lives (e.g., books, graphic novels, TV shows, movies, video games) and are an important influence (Atwal, Millwood-Hargrave, Sancho, Agyeman, & Karet, 2003). Characters have both similarities to (e.g., personalities, human-like social behaviors) and differences from (e.g., imaginary, non-typical abilities) humans. Accordingly,

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the purpose of this research is to gain understanding of whether and when different body weight cartoon characters influence the amount of non-nutritious food children choose and consume.

Behavioral priming and kids

Considerable research has examined the effects of stereotype primes on adults' behavior (Dijksterhuis & Bargh, 2001; Wheeler & Petty, 2001). This research typically shows that exposure to a stereotype leads to increases in stereotype-consistent behavior, even when the stereotype and/or behavior is negative. For example, adults walked more slowly after activation of the elderly stereotype (Bargh, Chen, & Burrows, 1996) and chose and ate more candy and cookies after seeing someone overweight (Campbell & Mohr, 2011). Despite research that suggests that activation of a temptation can automatically activate the related "overriding" goal (Fishbach, Friedman, & Kruglanski, 2003), priming research consistently finds that activation of a stereotype can increase stereotype-consistent behavior, even when that behavior is negatively related to a goal (Dijksterhuis & Bargh, 2001). Yet, when people process the connection between the stereotype and the behavior more deeply, the prime effect can be moderated (e.g., Campbell & Mohr, 2011).

Three articles on stereotype *threat* effects in children provide evidence that children who are members of a stereotyped group assimilate to the negative aspects of that stereotype when it is made salient (Ambady, Shih, Kim, & Pittinsky, 2001; McKown & Weinstein, 2003; Neuville & Croizet, 2007). However, research has yet to examine stereotype priming effects on the behavior of children who are not members of the stereotyped group. Among adults, stereotype priming occurs when activation of a stereotype increases the accessibility of behaviors associated with the stereotype, such that the likelihood of those behaviors increases. This process suggests that two conditions must be met in order for overweight characters to prime children's eating behaviors. First, exposure to the "overweight" character must activate a human overweight stereotype, despite the fact that the character is not human. Second, children must have an overweight stereotype that includes ideas of eating and/or unhealthiness in order for its activation to increase the accessibility of eating unhealthy foods.

Cartoon characters and stereotype activation

Beginning as young as 12-months-old, children attribute traits, goals, and intentionality to cartoon characters (Kuhlmeier, Wynn, & Bloom, 2003). Children attribute human psychology to characters as simplistic as geometric shapes with eyes or faces (Johnson, Slaughter, & Carey, 1998; Wynn, 2008). Cartoon characters frequently act like humans (e.g., Piglet, SpongeBob Squarepants) and children often role-play characters in make-believe or video games. Given these responses to and roles of characters, it is likely that children will often react to characters as human, and thus, apply social stereotypes. Therefore, despite the fact that characters are—to varying degrees—distinct from humans, we predict that they can activate children's stereotypes.

Children and the overweight stereotype

Even if, as we predict, children apply stereotypes to cartoon characters, for a character to cause stereotype priming, children would need to have the relevant stereotype associations. Evidence indicates that several physically-based stereotypes emerge in children during the same developmental period. Children develop sex-role stereotypes (Flerx, Fidler, & Rogers, 1976; Signorella, Bigler, & Liben, 1993), racial stereotypes (Brand, Ruiz, & Padilla, 1974), and body weight stereotypes (Cramer & Steinwert, 1998; White, Maura, & Spindler, 1985) between the ages of three and four. As children age, they develop stereotypes on less concrete, more abstract bases, for example, making inferences based on roles and products people own (Belk, Bahn, & Mayer, 1982; Belk, Mayer, & Driscoll, 1984; Chaplin & Lowrey, 2010; Mayer & Belk, 1982).

Research on the *content* of children's overweight stereotypes has been sparse, with the majority focused on weight stigmatism (Tillman, Kehle, Bray, Chafouleas, & Grigerick, 2007). Negative evaluations of body weight appear in children as young as three (Cramer & Steinwert, 1998). More complex weight stereotypes that are fairly similar to those of adults (e.g., lazier, less healthy) have been found with seven to eight year old children (Brylinsky & Moore, 1994). Middle schoolers have strong beliefs that people who are overweight overeat and under exercise (Rukavina & Li, 2011). These findings are consistent with evidence that children learn about the link between eating the "wrong foods" and being overweight from parents and teachers (Derscheid, Umoren, Kim, Henry, & Zittel, 2010; Dixey, Sahota, & Atwal, 2001). A content analysis found that almost one-fourth of animated cartoons between 1930 and 1995 included at least one overweight character and these characters were presented stereotypically as being more likely to eat "junk" food (Klein & Shiffman, 2005).

The evidence that children apply human concepts to cartoon characters and have a stereotype linking overweight to unhealthiness and increased eating suggests that overweight characters could prime children to consume relatively large amounts of unhealthy foods (e.g., candy, cookies). We hypothesize,

H1. Children who see an overweight cartoon character will choose and consume more indulgent (i.e., energy-dense, low nutrient) foods than children who do not see an overweight character.

Stereotype priming in multiple category contexts

Reviewing research on adults and priming, Bargh (2006) notes a need to consider prime effects in more natural environments, including when multiple possible primes are present. Children often see multiple cartoon characters together. For example, an overweight character is often presented concurrently with a normal weight character (e.g., Mario and Luigi, Po and Crane).

Despite the ecological and theoretical relevance, there is little research—either with adults or children—that examines behavioral priming when two different primes appear at the same

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