

RUNNING HEAD: FAST FOOD AND IMPATIENCE

You Are How You Eat: Fast Food and Impatience

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Abstract

Based on recent advancements in the behavioral priming literature, this paper explores how incidental exposure to fast food can induce impatient behaviors and choices outside of the eating domain. We found in three experiments that even an unconscious exposure to fast food symbols can automatically increase reading speed when under no time pressure and that thinking about fast food increases preferences for time-saving products while there are potentially many other product dimensions to consider. More strikingly, we found that the mere exposure to fast food symbols reduced people's willingness to save and led them to prefer immediate gain over greater future return, ultimately harming their economic interest. Thus, the way we eat has far reaching influences (often unconscious) on behaviors and choices unrelated to eating.

Eating habits have shifted dramatically over the last few decades. Fast food, first introduced with hotdog and hamburger food stands, is now a multibillion dollar industry that has widespread influence on what and how we eat. The golden arch of McDonald's is ranked as one of the most globally recognized cultural symbols (Schlosser, 2001). The expansion of the fast food industry is accompanied by growing concerns over associated health hazards. Cross-sectional studies show a positive association between the density of fast food restaurants with state-level obesity (Maddock, 2004). A longitudinal study finds that frequent fast food consumption is associated with weight gain and risk of insulin resistance over 15 years (Pereira et al., 2005). Despite increased awareness, much less is known about the consequences of fast food outside of the eating domain. Although burgers and fries are prototypical fast foods, the essence of fast food is not what you eat but *how* you eat. From the selection of ingredients to preparation of food to consuming the end products, the goal of fast food is to save time (Schlosser, 2001). Fast food allows people to fill their stomach as quickly as possible and move on to other things. It represents a culture that emphasizes time efficiency and immediate gratification.

Based on recent advancements in the behavioral priming literature, we suggest that exposure to fast food concepts can automatically induce time-saving behaviors. Previous studies have found that social behaviors can be primed by environmental cues. For example, exposure to a picture of an exclusive restaurant led people to behave with better manners in a subsequent eating task (Aarts & Dijksterhuis, 2005). Likewise, people who cast their vote within a school are more likely to endorse school funding initiatives on the ballot (Berger, Meredith, & Wheeler, 2008). These results are interpreted as the activation of goals associated with the environment cues, which then solicits corresponding behaviors. Moreover, the activation of these goals and

their execution requires no conscious awareness or regulation (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Troetschel, 2001). Thus a subliminal prime of the logo of Apple can activate a creative goal that leads participants to perform more creatively than a prime of the IBM logo (Fitzsimons, Chartrand, & Fitzsimons, 2008). Given that fast food embodies the goal of saving time, these findings suggest that exposure to fast food related concepts may automatically increase speed and time preference.

It is important to note that the social implications of this automatic effect of exposure to fast food are likely to be mixed. On the one hand, speed or time preference can no doubt be time efficient in contexts where time matters. On the other hand, the automatic priming effect means that the goal of saving time will be activated upon exposure to fast food regardless of whether time is a relevant factor in the context. For example, walking faster is time efficient when one is trying to make a meeting; it is a sign of impatience when one is going for a stroll in the park. Thus, although fast food has certainly contributed to a culture of time efficiency, the exposure to fast food might have also promoted haste and impatience.

This paper focuses on revealing the link between fast food and impatience. Experiment 1 examined whether a subliminal prime of fast food logos can increase reading speed while under no time constraint. Experiment 2 manipulated exposure to fast food related concepts and examined impatience in consumer choices. Finally, Experiment 3 examined whether priming fast food logos induced impatience in financial decisions as reflected by people's unwillingness to postpone immediate gains for greater future returns. Together these experiments suggest that the unconscious goal of saving time embedded in fast food may have the unexpected consequence of inducing haste and impatience.

Experiment 1

Experiment 1 tests whether exposure to symbols of fast food, even at an unconscious level, can automatically induce impatience as manifest in reading speed. General action speed has been one of the core components of measures of impatience and time urgency. The “speed and impatience” scale used to measure Type A behavior (Jenkins, Zyzanski, & Rosenman, 1979), for example, asks people to report how quickly they eat, walk, and process things in general. In this experiment, we gave participants a short paragraph to read after the exposure to fast food or control prime and measured the time it took them to finish reading.

Fifty-seven undergraduates were randomly assigned to either a fast food or a control condition. Participants were first asked to “pretest” some experimental materials for future studies; they read a short paragraph that was unrelated to fast food and typed it into a textbox. The time it took for them to finish was recorded and later used as a covariate to control for individual differences in reading speed. Participants then engaged in a bogus lexical decision task in which they needed to focus attention on the center of the screen while ignoring flashes of objects in the corners of the screen. In the fast food condition, the flashing objects included the subliminal prime of fast food. Six logo images (matched for size) taken from major fast food chains including McDonald’s, KFC, Subway, Taco Bell, Burger King, and Wendy’s were each flashed twice in random order at one of the corners of the computer screen. Each flash consisted of a pattern mask presented for 80 milliseconds, the logo images for 12 milliseconds, and the pattern mask again for 80 milliseconds. The control condition was the same as the fast food condition except that the logo images were replaced by blank squares of the same size. It is important to note that images flashed at this rate were too fast for the conscious mind to recognize. When asked after the experiment what they had seen in the flashes, all of the participants reported that they saw color blocks flashed without any meaningful pattern.

Nevertheless, prior research has shown that such brief exposure can be processed at an unconscious level and influence behavior (e.g., Bargh, Chen, & Burrows, 1996; Fitzsimons et al, 2008).

Immediately after the lexical task, participants saw a computer screen containing a 29-word instruction and a 320-word description of the Toronto city. Participants were asked to read the descriptions and move on to the next screen as they finish. The time taken for participants to finish reading this page was recorded and used as the dependent variable.

To test whether the unconscious exposure to fast food affected reading speed, we conducted a one-way ANCOVA on reading time by condition, controlling for individual differences in initial reading speed. Even though none of the participants reported seeing any of the logos flashed, those who were unconsciously exposed to fast food logos read significantly faster ($M_{adj}=69.54$ seconds, $SE=4.32$) than those in the control condition ($M_{adj}=84.01$ seconds, $SE=4.40$), $F(1,54)=5.44$, $p=.023$, $\eta_p^2=.091$. At the unconscious level, exposure to fast food increased speed when there was no time pressure in the situation.

Experiment 2

Experiment 2 examines another form of impatience: preferences for time-saving products. Consumers may evaluate multiple aspects of a product (e.g., environmental friendliness, aesthetics, quality, or time efficiency) and the extent to which a product saves time is just one of many such aspects. When individuals are exposed to fast food related concepts, however, the activated goal of saving time may make time efficiency the most prominent and trump other considerations. Indeed, Ferguson and Bargh (2004) showed that the activation of goals (e.g., thirsty) increases desirability of goal-relevant objects (e.g., water). Thus, we predict that exposure to the concept of fast food will increase the desirability of time-saving products.

Even though we used the term “time-saving products”, the extent to which a product is time efficient is likely to be relative. Therefore, we pretested 5 pairs of similar products with different levels of time efficiency. We asked an independent sample of 54 participants to indicate the extent to which each product was time efficient on a five-point scale (1–not at all time efficient, 3–moderately time efficient, 5–very time efficient). We then conducted paired sample t-tests for each pair. Except for toothpaste and lip balm, all of these within pair comparisons were consistent with our initial expectations (see Table 1). Thus, we dropped toothpaste and lip balm from subsequent analyses and divided the remaining 8 products into two categories: time-saving vs. control products. Further analysis showed that these two categories were significantly different from each other on the dimension of time efficiency at an aggregate level ($M=3.47$, $SD=.66$ vs. $M=2.40$, $SD=.73$), $F(1,53)=120.08$, $p<.001$, $\eta_p^2=.694$.

To test the prediction that individuals primed with fast food were more likely to prefer time-saving products over control products than those in the control condition, 91 undergraduate students were randomly assigned either to recall a time they had a meal at a fast food establishment or the last time they went grocery shopping (control condition). Participants then completed an ostensibly unrelated marketing survey in which they rated the desirability of the 10 products on a 1 (*not at all*) to 7 (*very desirable*) scale.

As expected, participants primed with fast food desired time-saving products more ($M=3.70$, $SD=1.12$) than those in the control condition ($M=3.07$, $SD=1.07$), $F(1,89)=7.54$, $p=.007$, $\eta_p^2=.078$; their preference for control products did not differ ($M=3.47$, $SD=1.14$ vs. $M=3.40$, $SD=1.00$), $F(1,89)=.089$, $p=.766$, $\eta_p^2=.001$. The interaction between the prime and product type was also significant, $F(1,89)=4.33$, $p=.04$, $\eta_p^2=.046$. These findings suggest that

thinking about fast food might have made individuals impatient and strengthened their desire to get the tasks done as quickly as possible.

Experiment 3

Thus far we have shown that fast food, originally designed to save time, can have the unexpected consequence of inducing haste and impatience, as reflected in faster reading speed when under no time pressure and preference for time-saving products when there are potentially other important aspects upon which to choose a product. Experiment 3 extends the effect of fast food to one of the most studied temporal decisions—saving. We test whether the impatience induced by exposure to the concept of fast food can actually work against one’s economic interest. Saving involves the delay of immediate gratification from spending for greater future gain (i.e., interest). To save means that one needs to wait patiently for greater future return. This counters the ethos of getting things as quickly as possible and immediate gratification that fast food embodies. Thus, although few would associate the mere exposure to fast food with saving preferences, we predict that individuals exposed to symbols of fast food would be less likely to save compared to those without such exposure.

Fifty-eight undergraduate students were randomly assigned to rate the esthetics of 4 different logos. In the fast food condition, two of the logos were from well-known fast food franchises (McDonalds and KFC), whereas, the control condition included logos of two inexpensive diners—to control for the inexpensiveness dimension of fast food that may be relevant to preferences of savings¹. After the prime, participants indicated their saving

¹ An independent pretest sample of 32 students were randomly assigned to rate the two fast food establishments or diners on expensiveness and service speed using a 7-point scale (1–*not at all* to 7–*very much*). The average ratings of the fast food pictures were equally inexpensive ($M=3.00$, $SD=1.25$) as diners ($M=3.16$, $SD=1.12$), $F(1,30)=.14$, $p=.71$, $\eta_p^2=.005$; but fast food was rated as speedier ($M=5.38$, $SD=.94$) than diners ($M=4.40$, $SD=.82$), $F(1,30)=9.64$, $p=.004$, $\eta_p^2=.243$.

preference, measured by a standard task where participants make a series of binary choices between money received at different times (Benjamin, Choi, & Strickland, in press; Frederick, Loewenstein, & O'Donoghue, 2002). Participants were asked to circle either “\$3 today or X in 1 week,” where X =\$3.05, \$3.10, \$3.25, \$3.50, \$3.75, \$4.00, \$4.50, \$5.00, \$5.50, \$6.00, or \$7.00. Our dependent variable was the minimum continuously compounded weekly interest rate that the subject requires to choose the later payment over the earlier payment. If the participant would choose the later payment over an earlier \$3 payment if and only if later payment is at least \$3.50, then the reservation interest rate is $r = \log(3.50/3) = 0.154$ (15.4%). The higher the interest rate, the greater value participants assign to having an immediate gains over a larger delayed return.

Three participants who expressed inconsistent preferences by bouncing back and forth between having money today versus in 1 week were excluded from the analysis. As expected, participants who were merely exposed to the fast food logos required much higher minimum compounded weekly interest rate ($M=17\%$, $SD=10\%$) to delay payment than those in the control condition ($M=11\%$, $SD=9\%$), $F(1,53)=6.65$, $p=.013$, $\eta_p^2=.112$. This means that participants primed with fast food were much more likely to accept a smaller payment now rather than waiting for a larger payment in a week compared to those in the control condition. Fast food seemed to have made people impatient in a manner that could put their economic interest at risk.

General Discussion

Fast food has become the ultimate icon for a modern culture that emphasizes time efficiency and instant gratification (Ritzer, 1992). The consequences of fast food's ubiquity, however, have not been adequately understood. Based on the recent behavioral priming literature, we suggest that the time saving principle embodied by fast food can automatically induce haste and impatience. In three experiments, we found that even an unconscious exposure

to fast food symbols increased reading speed while under no time constraint and that thinking about eating fast food increased preferences for time-saving products. If there is any question regarding whether these findings capture impatience and what are its social implications, Experiment 3 should alleviate these concerns by showing that the mere exposure to fast food reduced people's willingness to save, leading them to choose the impatient and financially inferior option.

These findings suggest some ironic implications of the priming effect. Although time-saving goals can certainly produce time efficient outcomes, the activation and pursuit of these goals upon exposure of fast food are automatic and are not contingent on the temporal dimension of the context. Thus, exposure to fast food may increase reading speed whether one is at work where time efficiency matters or when one is relaxing at home. Scholars from different disciplines have made a similar observation that as people have more time efficient technologies and products they feel more rather than less impatience (e.g., Levine, 1997). It is possible that a fast food culture that extols saving time may not only change the way people eat but also fundamentally alter the way they experience events: activities that used to be orthogonal to time concerns (e.g., leisure) are now experienced through the colored glasses of impatience. It is an open question as to whether fast food in part caused this culture or is merely a consequence of it. What we can infer from our studies, however, is that exposure to fast food and related symbols reinforce an emphasis on impatience and instant gratification and that fast food can have a far broader impact on individuals' behaviors and choices than previously thought.

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Perennial

Tables

Table 1. *Pretest of product time efficiency in Experiment 2.*

	Time Efficient Products (M/SD)		Control Products (M/SD)		<i>t</i>
1	2-in-1 Shampoo	3.35 (1.03)	Regular Shampoo	2.11 (.98)	7.62*
2	Four-Slice Toaster	4.04 (1.04)	Single-Slice Toaster	2.23 (1.19)	8.03*
3	High Efficiency Detergent	3.02 (1.04)	Regular Detergent	2.74 (1.12)	2.27*
4	3-in-1 Skin Care	3.51 (1.20)	Skin Care Solution	2.51 (1.01)	6.10*
5	Lasting Protection Toothpaste	2.94 (1.28)	Lip Balm	2.94 (1.28)	.00

Note: Products were rated on a 5-point scale (*1–not at all time efficient, 3–moderately time efficient, 5–very time efficient*). Within product category comparisons were made using a paired sample t-tests.

* $p < .05$.