Empty Pockets, Full Stomachs: How Desire For Money Affects Caloric Intake

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In this project we hypothesize that people’s desire for money is predictive for their internal need to consume calories. In 5 studies we show that different money manipulations lead people to choose a more caloric dish (Study 1), to choose a larger portion (Study 2, 4), and to underestimate the caloric content of food items they are presented with (Study 3, 4, 5). By showing how to suppress this effect (Study 4), especially for people with a higher tendency to worry about money (Study 5), we illustrate the underlying mechanism. Implications for understanding why especially poor people suffer from obesity are discussed.

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Confused, Frustrated, and Angry: Consumer Responses to Promotional Messages in Online Service Transactions

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Promotional nesting in online services, such as offering music downloads when purchasing concert tickets, is increasingly commonplace. In a goal-driven service transaction, consumers cannot simply avoid unwanted promotional messages as they are unsure of the promotional content’s goal-relevance. An online study shows that nested promotions confuse and frustrate web novices, who are unsure if promotion participation is necessary to continue the central service transaction. Experts find nested promotions frustrating when they are on the same page as service content; promotions on separate (interstitial) pages elicit anger. While immediate compliance with promotions appears high, actual consumer follow-through expectations are very low.

Empty Pockets Full Stomachs: How Money Cues Induce People to Hoard Calories

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Abstract

Building on the security function of both money and food, we show in 5 studies that monetary cues can induce people to hoard calories as a means of securing their resources. In study 1 we test the main effect of money cues on food (caloric) preferences. In study 2 and 3 we illustrate the moderating effects of a resource manipulation (study 2) and individual differences in the security-worry meaning of money (study 3). Study 2 also reveals that calorie underestimation is mediating the effect of monetary stimuli on food preferences. Finally, in study 4, a general reward explanation is ruled out.

According to standard economics, money can be considered a conditioned reinforcer that gains its motivational property only because of its repetitive association with unconditioned reinforcers, such as food (e.g., Camerer, Loewenstein, and Prelec 2005). In psychological terminology, this tool theory about money (Lea and Webley 2006) corresponds to the security meaning of money (Rose and Orr 2007; Yamauchi and Templer 1982); money is considered to be instrumental; money is viewed as a means to obtain biologically relevant incentives. For most of humankind’s history, however, food was the most relevant biological incentive (Diamond 1997), the ultimate form of resource security (Fieldhouse 1995). Building on the security function of both money and food, it seems reasonable then, to suggest that money as a conditioned reinforcer, is in particular ‘conditioned’ to food, and probably more to food than to other ‘unrelated’ rewards.

In behavioral studies there is a growing body of research supporting a close relationship between money and food. Nelson and Morrison (2005) found that men who feel either poor or hungry prefer heavier women than men who feel rich or satiated. This idea is
consistent with the finding that in cultures with scarce resources, heavier women are preferred to slim women (e.g., Pettijohn and Jungeberg 2004; Symons 1979). Most relevant to the current research, however, are the findings of Briers et al. (2006). Briers and colleagues showed that cues signaling scarcity in one domain (e.g., food) motivated people to acquire or maintain resources in the other domain (e.g., money). In a similar vein, we propose that exposure to money cues motivates people to eat more, that is, to hoard caloric resources. We will argue that the effect of money cues on food consumption is driven by the need to secure one’s resources.

We present five studies that tested this hypothesis. In study 1a, after inducing fantasies about winning the lottery (see Briers et al. 2006), participants had to rank 6 dishes according to their preference. After exposure to a high monetary cue, the most caloric dish ‘hamburger & fries’ was rated significantly better than after exposure to a low monetary cue. In study 1b, we incorporated caloric estimation as a subtle measure of people’s desire for ‘calories’, since it has been proven that the more you value a good, the lower you estimate its availability (Dai et al. 2008). After inducing fantasies about winning the lottery (Briers et al. 2006), participants exposed to high money cues estimated the caloric content of regular strawberry yoghurt (125 grams) significantly lower than participants exposed to low money cues. In study 2, it is shown that monetary satiation (e.g., Nelson & Morrison 2005) eliminates the effect of money primes on need for calories. In a 2 (money vs. fish screen savers; see Vohs, Mead, and Goode 2006) X 2 (monetary satiation vs. control) between subjects design, participants primed with money on average chose a larger brownie and again underestimated the caloric content, but only when they were not satiated with money. Additionally, study 2 revealed that calorie underestimation is mediating the effect of monetary stimuli on food preferences. In study 3, we showed more directly that people hoard calories (i.e., resources) as a means of protection or security from an uncertain future. For this, we relied on the moderating role of an individual difference in the meaning attached to money (Rose and Orr 2007). For people with a low tendency to worry about money, monetary satiation versus deprivation (e.g., Nelson & Morrison 2005), had no effect on the estimation of the fattening content of a brownie; For people with a high tendency to worry about money, monetary satiation compared to deprivation, significantly increased the estimation of the fattening content of a brownie (and thus decreased its value; Dai et al. 2008). Finally, in study 4, a general reward explanation is ruled out. We show (1) that monetary cues affect food related choices, but have no influence on non-food items, and (2) that participants’ sensitivity for reward is not moderating this effect.

In sum, five studies show how monetary cues can induce an internal need to consume more (caloric) food. The emerging evidence that monetary rewards and food rewards share a brain region (e.g., Breiter et al. 2001; O’Doherty et al. 2002) raises the question of the extent to which this region is involved in the processing of all kinds of rewards (Montague and Berns 2002; Wilson and Daly 2004). In case of the latter, appetite for money should give rise to an even higher caloric need among individuals with a sensitive reward system, compared to people with an insensitive reward system. However, unlike other studies testing this idea of a general reward system (e.g., Van den Bergh, Dewitte, and Warlop 2008; Wadhwa, Shiv, and Nowlis 2008), in our studies no moderation with sensitivity for reward could be proven. Besides the alternative reward explanation, we also rule out an alternative mood explanation.

The demonstrated effect of different money manipulations on an internal need for calories may help explain why poor people are especially vulnerable to overeating and have ill health as a result. The prevalence of obesity has increased substantially since 1970 (Keith et al. 2006). In industrialized countries such as the United States (Drewnowsky and Specter 2004), as well as in developing countries (James 2004), obesity is usually associated with poverty. Although the Big Two (reduced physical activity and specific food marketing practices) might be partly responsible for the difference in obesity rates between the rich and the poor, so far, no attempts have been made to investigate whether poor people actually have a stronger need (at the individual level) to consume more (caloric) food than rich people. Perhaps in our material world, the attraction to money is so powerful that people who, relatively speaking, fail in their quest for (more) money, tend to substitute their lack of money by consuming more calories than is healthy.

References