Promoting Sustainable Consumption: The Risks of Using Financial Incentives

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Abstract

Financial incentives are a highly popular tool to steer sustainable consumer behavior, but they are not always effective, and can sometimes do more harm than good. In this chapter, we aim to offer insights into the conditions under which financial incentives are more or a less effective. Our central point is that the persuasive power of incentives does not only depend on their instrumental value, but also on how these financial incentives affect people’s underlying cognitions - *money does something to people* (Section 2). Importantly, these cognitive responses may limit the persuasive power of incentives. Specifically, their installment may lead consumers to adopt a business frame (section 3.1) disrupt the process of self-persuasion (section 3.2) or taint the self-signal ensuing from the decision to act sustainably (section 3.3). This means that financial incentives can sometimes paradoxically discourage the very behavior they are meant to encourage (section 4.1). Even when incentives are effective in promoting the target behavior, they can still do more harm than good when they only affect behavior temporarily (4.3), or simultaneously demotivate consumers to engage in other, more pertinent forms of sustainable actions that are not financially attractive (4.2). The chapters ends with discussing potential remedies against these risks, as well as directions for future research. As such, this chapter may aid social marketers, policy makers and scholars in their attempts to shape more sustainable consumer behaviors.
1. Introduction

Scientists agree that many of today’s most pressing environmental issues (e.g. resource depletion, water pollution, climate change) can ultimately be attributed to specific behavior of consumers. Whether we decide to live in poor or well-insulated houses, travel by plane or train, put beef or locally-grown vegetables on our plate, on an aggregate level, substantially influences the amount energy, water, and land that is involved in housing, moving and feeding humanity (Hammond, 2006; Hoekstra, 2013). Consequently, a key component to mitigating environmental problems lies with changing the behavior of individual consumers (Dietz, Gardner, Gilligan, Stern, & Vandenbergh, 2009). But how should consumers be motivated to act pro-environmentally?

Sustainable consumption often involves some degree of physical or financial discomfort on behalf of the consumer. For example, locally-grown vegetables are typically less readily available than mass-produced, greenhouse grown alternatives which are typically offered in supermarket settings. Sustainable consumption is sometimes also financially expensive; home weatherization for instance requires a steep initial financial investment. Thus, many sustainable consumption patterns are not inherently rewarding. Consequently, it is argued that some kind of external incentive is needed as to make sustainable consumption attractive from an individual consumer perspective.

A widespread notion is that consumers are primarily motivated by (economic) self-interest (Miller, 1999), and are not motivated to act pro-environmentally unless some personal benefit is implicated (Penn, 2003). Hence, it is not surprising that policy aimed at ‘greening’ consumer behavior – e.g. environmental taxes, subsidies for energy-efficient vehicles - often appeals to consumers’ economic sense. Indeed, money is one of the most powerful and universal
sources of motivation, and can trigger (people are likely to try behaviors they believe are financially rewarding) and reinforce behaviors (people tend to repeat actions that have resulted in financial gain; Lea & Webley, 2006). Consequently, it is assumed that people would be motivated to engage more often in sustainable consumption by positioning such behavior as financially attractive (e.g., rebates, subsidies, tax credits) and positioning unsustainable behavior as costly (e.g., levies, taxes, tolls). Simply change the price structure, and consumers will change accordingly.

Financial incentives (we use the term incentive\(^1\) in this chapter to denote any situation in which specific consumer behavior is purposefully linked to a financial consequence in an attempt to increase motivation, including monetary feedback) have often been used to promoting sustainable consumer behavior. However, effects were mixed. Although financial incentives have been effective in improving some targeted behaviors, such as recycling (Levitt & Leventhal, 1986), composting (Thøgersen, 2003), and fuel-efficient driving (Bolderdijk, Knockaert, Steg & Verhoef, 2011), research also documented instances in which the introduction of financial incentives did not improve (e.g., in the case of a tax on air travel) or even reduced desired behavior (e.g., in the case of financial reimbursement for residents living close to a nuclear waste depository; Frey & Oberholzer-Gee, 1997).

Nevertheless, incentives remain a highly popular tool to steer consumer behavior. Importantly, however, financial incentives constitute just one of several policy options. Consequently - just like a carpenter who relies on more than just his hammer to get the job done - incentives should not be the only tool to steer consumer behavior. Unfortunately, however,

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\(^1\) We use this definition for simplicity sake. Note that the word “incentive” may signify different concepts depending on context or discipline, see e.g. Bolderdijk, Lehman & Geller (2012).
incentives are often applied under the implicit assumption they would be effective in any circumstance, without taking the specific situation (such as type of target behavior, motivation present with the consumer) into regard, with null, or potentially counterproductive effects as a consequence.

In this chapter, we aim to offer insights into the conditions under which financial incentives are more or less suitable tool to promote sustainable consumer behavior. We do so by reviewing the literature for potential limitations and risks of financial incentives. Moreover, we identify literature gaps that may spur future research. As such, this chapter may aid social marketers, policy makers and scholars in their attempts to shape more sustainable consumer behaviors.

2. **What money does for people versus what money does to people**

In order to better understand when financial incentives may be more or less suitable to promoting sustainable consumption, we first address the question of how incentives affect behaviour. We review two perspectives on the effects of financial incentives: what money does *for* people (the instrumental value of money) versus what money does *to* people (the cognitive impact of money).

Money, according to the traditional perspectives that one may find in economics textbooks and in the public domain, has several functions. First, it is a unit of account: money can be used to express the market value of goods or services. Second, it is a store of value: money is a means to save, store and retrieve value. Third, and most importantly, it is a medium of exchange: money facilitates the trading of goods and services. According to this reasoning, money itself has no intrinsic value, and people only desire to obtain money for the sake of what
it allows them to purchase. Thus, money derives its persuasive power from its instrumental value (Lea & Webley, 2006) – *money does something for people*.

This instrumental analysis of money offers some straightforward predictions about the effects of money as a tool for behavior change. Financial incentives (e.g., discounts, deposits, rebates, subsidies) make desired consumer behavior (e.g., the purchase of organic food, recycling cans) financially attractive. They are considered to be persuasive in as far as they allow consumers to save money, which can be used to purchase more of the goods and services they desire. Similarly, financial disincentives (e.g., surcharges, fines, fees, taxes) make undesired consumer behavior (e.g., buying excessive packaging) financially unattractive because they limit the amount of desirable goods and services people can purchase.

In sum, because incentives impact the amount of money available to spend on other products and services, larger incentives should result in more behavior change. This prediction is in line with some formal predictions and assumptions that are prevalent in the economic literature. Within the neo-classical economic framework, people are modeled as rational agents, who make optimal decisions and are mainly focused on pursuing self-interest and personal wealth ('homo economicus', Thaler, 2000). Accordingly, they are presumed to react ‘rationally’ to money as a tool of persuasion. Incentives (e.g., subsidies, energy taxes) make specific behaviors financially more or less attractive, and should consequently increase or reduce demand for those behaviors. Thus, this basic economic framework predicts a monotonic relation between anticipated financial consequences and behavior (Gneezy & Rustichini, 2000) – the larger the monetary incentive, the more likely consumers will change their behavior.

A host of studies indeed suggest that the implementation of financial incentives - both small and large ones - can be effective in promoting specific types of sustainable behaviors (e.g.
Levitt & Leventhal, 1986; Poortinga, Whitmarsh & Suffolk, 2013). This however does not mean that making sustainable consumption financially attractive is always required or even conducive to promoting certain kinds of behavior. The sales of the Toyota Prius in the US, for instance, did not plummet after the tax credit for hybrid cars ended in 2006. On the contrary, sales increased by 68.9%, suggesting that tax credits seemed no longer crucial once a sufficiently large critical mass was reached (Griskevicius, Tybur, & Van den Bergh, 2010). In fact, there are cases in which financial incentives could do more harm than good. Recent studies for instance suggest that reminding consumers of the financial benefits associated with energy-saving actions may in fact demotivate consumers to take appropriate actions (Bolderdijk, Steg, Geller, Lehman, & Postmes, 2012; Handgraaf, Van Lidth de Jeude, & Appelt, 2013). Additionally, both basic (Ariely, Gneezy, Loewenstein & Mazar, 2009) and applied studies (Heberlein & Warriner, 1983) suggest that higher incentives do not necessarily translate stronger changes in behavior. Evidently, the effects of money on behavior cannot be fully captured by referring to money’s instrumental function (cf., Thøgersen, 2003). Perhaps there is more to money a tool for persuasion than initially meets the eye.

The instrumental perspective of money implies that people desire to obtain money for the sake of what it allows them to buy. However, money appears to be more than a neutral medium of exchange. In fact, psychological and sociological studies suggest that money has consistent and predictable cognitive effects: ‘Money is found to have value and an emotional charge that is not predicted by its economic use’ (Lea & Webley, 2006). The mere activation of the concept of money, for instance, may already affect people’s decisions; screenshot pictures of a dollar bill were found to elicit a self-sufficient orientation among observers, making them less susceptible to the needs of others (Vohs, Mead, & Goode, 2006). This example illustrates that, as we will
argue throughout this chapter, money’s persuasive power does not only depend on its instrumental value, but also on how money affects people’s underlying cognitions - *money does something to people*. Importantly, these cognitive responses may limit the persuasive power of incentives. It is therefore important to bear such cognitive responses in mind when trying to understand and predict the effectiveness of financial incentives. In remainder of this chapter, we explain this point in more detail.

3. The psychological impact of incentives

Incentives can have a host of cognitive effects: they can affect the amount of trust in others (Mulder, van Dijk, De Cremer, & Wilke, 2006; Tenbrunsel & Messick, 1999), make people more self-sufficient (Vohs, et al., 2006), and narrow people’s attention (Ariely, et al. 2009). Here, we review the most pertinent effects to persuasion. We start by discussing how incentives affect consumers’ decision frame (3.1). Next, we discuss how incentives affect and interact with people’s self-concept, which has implications for self-persuasion (3.2), as well as the type of signal that ensues from acting sustainably (3.3). In doing so, we identify some important risks associated with the application of incentives as a tool for persuasion.

3.1 Incentives change the decision frame

Many consumers engage in environmentally-sustainable actions when there is no explicit financial gain in doing so (Pelletier, Tuson, Green-Demers, Noels, & Beaton, 1998; Thøgersen, 2006). Consider for instance consumers who buy organic products or recycle batteries and glass. Such actions are often spurred by normative considerations – not engaging in such sustainable actions would be inappropriate (e.g. not in line one’s standards) and may result in internal
sanctions (e.g. experiencing guilt). For these consumers, the decision whether or not to act sustainably is not a matter of cost-benefit analysis, but one regarding morality and ethics (Lindenberg & Steg, 2007).

Different studies have suggested that financial incentives may interact with such normative considerations (Gneezy, Meier, & Rey-Biel, 2011). Consider for instance a field experiment conducted at an Israeli daycare center (Gneezy & Rustichini, 2000). In an attempt to stimulate parents to collect their children before closing time, daycare employees installed a financial fine for latecomers. The goal of the penalty was to reinforce the punctuality norm: parents are expected to be on time to prevent daycare center employees from working overtime. But rather than supporting this norm, the penalty seemed to stimulate norm violations: parents were late more often after the penalty was installed - by paying the penalty, parents did no longer have to face the personal and social repercussions that are associated with violating a norm; they had purchased the ‘right’ to be late (Gneezy & Rustichini, 2000).

In other words, incentives can undermine the influence of normative considerations. This risk seems also relevant when incentives are used to promote sustainable consumption, given that many of such behaviors are spurred by normative considerations. For instance, financial rewards actually reduced employees’ discretionary energy conservation practices (e.g. turning of their computer screens during lunchtime; Handgraaf et al., 2013). A related study established direct empirical support for the underlying role of normative considerations (Schwartz, Bruine de Bruin, Fischhoff & Lave, forthcoming). Households were exposed to three different advertisements for energy-saving programs, emphasizing either financial benefits (“reduce your electricity bill”), environmental benefits (“reduce your environmental impact”) or both (“reduce your electricity bill and your environmental impact”). Afterwards, respondents from the three
groups indicated their willingness to enroll for the said energy-saving program. Emphasizing the monetary benefits, either as the single argument used, or as an addition to environmental arguments, turned out to reduce respondents’ willingness to enroll relative to the advertisement where only environmental benefits were stressed. Follow-up mediation analyses confirmed the crucial role of normative considerations in this process: by highlighting monetary benefits, the financial and combined advertisements shifted respondents’ attention away from the environmental benefits of enrolling for the energy-saving program, which seemed to be the central argument for respondents to enroll in the first place. In sum, incentives can shift people’s attention away from the normative reasons for behavior, and paradoxically discourage the very behavior they were meant to stimulate.

Arguably, the examples above all included relatively small monetary stakes, which may explain their ineffectiveness. One could argue that such a shift in underlying motivations is not relevant as long as a sufficiently large incentive is used that is effective in changing the target behavior. There are however some problems with this reasoning. First, given that the installment of incentives are often a consequence of political debate and economic tides, their presence cannot be guaranteed over time. Second, more importantly, the shift away from normative considerations may not only affect the onset of the target behavior, but may also reduce the likelihood that consumers spontaneously engage in other, related types of sustainable consumption. When respondents for instance read about the financial (viz., less fuel costs) instead of environmental benefits (viz., less emissions) that were associated with carpooling, they were less likely to engage in an ostensibly unrelated behavior: disposing their used paper sheets in the recycling bin (Evans, Maio, Corner, Hodgetts, Ahmed, & Hahn, 2012). Hence, by appealing to selfish motives, incentives could inhibit positive spillover effects: although they
may be effective in promoting specific kinds of sustainable consumption practices, they are
unlikely to simultaneously lead to increases in other types of sustainable consumption. The
explanation here is that by drawing people’s attention to people’s self-enhancing (selfish)
reasons for sustainable consumption, financial appeals fail to elicit a more general self-
transcendent (pro-environmental) orientation, which is required for positive spillover to occur
(Thøgersen, 2013). More generally, by exclusively appealing to self-interest, financial incentives
may reinforce the undesirable societal norm that acting sustainably should only be considered
worthwhile or appropriate when there is sufficient financial gain in doing so (Thøgersen &
Crompton, 2009).

We explained how financial incentives, by undermining shifting people’s attention, may
demotivate sustainable behaviors that result from normative motivations. More broadly, by
changing the type of information people attend to and base their decision on, incentives may turn
an otherwise ethical decision (‘is it appropriate for me to do so’) into business decision (‘what’s
in it for me?’). In other words, incentives can change the decision frame (Tenbrunsel & Messick,
1999). This process has two, closely related, implications. First, as explained above, incentives
may undermine or crowd out normative considerations. There is however a second, closely
related effect that warrants mention: the installment of incentives can direct people’s attention to
trade-off between the size of compensation and the effort or inconvenience required (Heyman &
Ariely, 2004). In other words, incentives stimulate people to engage in explicit cost-benefit
analysis before engaging in sustainable actions. As a consequence, consumers will only consider
changing their behavior when the introduced incentive is considered worthwhile (Dogan,
Bolderdijk & Steg, in press). This effect is not problematic as long as a sufficiently large
incentive can be offered in return, for instance in the case of a substantive tax-break on the
purchase of energy-efficient vehicles. But what happens when only a relatively small incentive can be offered in return for a rather effortful type of behavior?

Given that most people prefer some money to no money at all, one could reason that offering a small incentive, at best, would improve motivation, or at worst, fail to affect behavior. As illustrated earlier however, small incentives can in fact demotivate people. The underlying process was illustrated in a classic experiment (Heyman & Ariely, 2004). Respondents were paid either 10 cents (‘small incentive’) or 4$ (‘medium incentive’) or no payment (control) for participating in a highly tedious task: using the computer mouse to drag a grey circle across the computer screen as often as possible in 3 minutes. Not surprisingly, performance was much lower in the small compared to the medium incentive condition. The researchers also included a control condition in which no payment was offered at all. Interestingly, unpaid participants performed significantly better than respondents who received the small incentive. Apparently, the small incentive of 10 cents was not enough to justify the effort that was associated with the mind-numbing task of dragging balls across a computer screen. Relative to offering no payment, offering a small financial incentive thus seemed to demotivate respondents.

In sum, offering financial compensation that is perceived as too small in relation to the costs may potentially do more harm than good. Given that many sustainable consumer behaviors involve seemingly small financial gain (e.g. using public transport instead of one’s own car, cutting the amount of showers per week, switching to vegetarian meals), but may require substantial effort and inconvenience, it is questionable whether appealing to monetary concern is the most effective strategy (Schultz, 2010). This point seems especially relevant for technological advances that reveal the exact financial consequences associated with specific energy-saving actions, such as setting the thermostat lower, or flicking off specific devices (Jain,
Taylor, & Culligan, 2013). Although, in general, instant feedback about the consequences of one’s actions may enhance learning (Kluger & DeNisi, 1996), a potential risk of financial feedback specifically is that previously ignorant consumers become aware of how little financial benefit is actually to be gained by engaging in specific sustainable actions. As a consequence, financial feedback can demotivate, rather than motivate sustainable behaviors, particularly when these behaviors are perceived as rather effortful (Dogan et al., in press).

Thus far, we discussed how incentives can change the decision frame of consumers. However, incentives do not only affect the type of decision (business versus ethical) that consumers are making, but also the implications consumers derive from choosing to act sustainably – they affect and interact with consumers’ self-concept. The relevance of this point will become evident in the next two sections.

3.2 Incentives disrupt the process of self-persuasion

Incentives are meant to provide consumers an external reason to change. This is the core assumption underlying many applications of incentives; the inherent consequences of behavior are not enough to motivate change so external consequences need to be added (Lehman & Geller, 2004). Thus large incentives give people a justification to adopt behaviors they otherwise would not consider. However, precisely because of this reason large incentives may also fail to simultaneously change people’s underlying attitudes, and therefore fail to change behavior in the long run, as will become apparent below.

Let us explain this process by describing another classic experiment (Festinger & Carlsmith, 1959). Students were asked to engage in a highly boring chore, which took about an
hour. Afterwards, they were asked to tell the next respondent (a confederate who was waiting outside) that the boring task was “fun”, and “interesting” – an obvious lie. One group of respondents received a small incentive (1$) for telling this lie, while others received a large incentive (20$). Next, respondents indicated how enjoyable they found the task, and whether they were willing to participate in a similar task again should the opportunity arise. The group who received a large incentive was honest: they did not claim to enjoy the boring task, and would not engage in a similar task if asked to do so. In contrast, the small incentive group claimed they found the task enjoyable, and indicated to be willing to engage in a similar task.

So what explains this group difference? According to cognitive dissonance theory, people strive for consistency between their attitudes and actions, and experience discomfort when they engage in behaviors that are not in line with their attitudes. Dissonance is stronger when behaviors are the result of one’s own choice, and not caused by external influences, such as incentives. In the example above, students who were paid 20$ for lying about how much fun the task was had a clear external justification – they were generously paid for doing so. Consequently, they experienced less dissonance and felt no need to change their opinion on the subject – they just indicated that the task was not enjoyable. Students who received the small incentive, however, did not have a convincing justification for telling others they enjoyed the task. When later asked how much fun the task really was, they dealt with the ensuing dissonance by changing their attitudes: they convinced themselves the task actually was fun.

So what’s the relevance for sustainable consumption? Incentives, by offering an external justification for specific behavior, may be effective in promoting specific types of behavior, but at the same time prevent consumers from ascribing compliance to their own free will – they prevent consumers from engaging in *self-persuasion* (Aronson, 1999). Consequently,
incentives for sustainable consumption (e.g. subsidies for solar panels, taxes on air travel, bottle bills) run the risk of only being effective as long as they are in place. Since the underlying attitudes have not changed, behavior may relapse to its old levels when the incentive is removed.

This effect has been documented on many instances. Consider a field experiment that tested effects of incentives on speeding (Bolderdijk, et al., 2011). Changing speeding behavior requires nothing more than simply being a bit less zealous when pushing the gas pedal – in other words, it involves a relatively straightforward type of behavior, and there are no barriers that prevent motivations from translating to change. Consequently, the circumstances are met where incentives can be expected to enhance performance (Stern, 1999; Ariely et al., 2009). Results showed that a relatively large financial incentive (50 Euros per month) was successful in motivating sustainable consumption: drivers significantly reduced their driving speeds during the months in which they were incentivized. Specifically, drivers in the incentive group tended to decrease their speeds after the incentive was installed, while respondents in the control group did not exhibit a similar drop in speeding levels. Importantly, drivers in the incentive group pushed the gas pedal again after the financial incentive was removed. Apparently, drivers discovered no additional benefit in reduced driving speeds during the incentivized period; the only reason keeping them from speeding was the financial reward. They did not develop different attitudes towards speeding during the 4 month periods, so when the initial justification for driving slower was removed, drivers relapsed into their old levels of speeding.

We explained how incentives may only lead to short term change, as they do not foster self-persuasion and thus not facilitate changes in underlying attitudes. However, a lack of self-persuasion does not only prevent long-term change, but is another impediment preventing spillover to other domains, as we explain next. Self-perception theory (Bem, 1972) suggests that
people derive their self-concept from their actions: people use their past actions as a way to construct their self-concept. Given that the self-concept determines the likelihood that people will engage in specific actions (Benabou & Tirole, 2006), any change in self-concept could also affect a range of related behaviors. Indeed, when people realize they acted pro-environmental in the past, they are more likely to see themselves as a person who acts pro-environmental (as reflected in a strong environmental self-identity), which in turn promotes subsequent pro-environmental actions (Van der Werff, Steg, & Keizer, 2013).

Research suggests that incentives may interact with this process. In an attempt to pinpoint the exact mechanism driving the foot-in-the-door effect, an experiment was conducted that also illustrates one of the risks associated with incentives (Burger & Caldwell, 2003). While waiting in the lab for the experimenter, respondents received an initial request by a confederate to sign a petition to battle homelessness (most respondents did). Some respondents received a financial incentive for signing, while others received no reward. Two days later, the same respondents were asked whether they were willing to spend a few weekend hours to help out a local homelessness shelter. Respondents who were not paid for signing the petition were more likely to comply with the request to help the homeless shelter in the weekend.

Again here, the results can be explained by self-persuasion: respondents who were not paid for signing the petition underwent a change in self-perception: they now saw themselves as being more altruistic. Importantly, the financial incentive for signing the petition disrupted the process of self-persuasion: respondents who were paid for signing did not see themselves as being altruistic, and were consequently less likely to comply with the request to help the homeless shelter during their weekend break.
This study also offers important insights for sustainable consumption. When consumers are exclusively motivated by financial rewards, they are less likely to attribute any ensuing behavior to themselves. Consequently, they are less likely to develop a general ‘green’ self-concept and to take environmental considerations into account in other situations. Indeed, a recent study found that when people’s attention was directed to the environmental benefits of their previous pro-environmental actions, their environmental self-identity was strengthened, making it more likely that they engaged in subsequent pro-environmental actions. Yet, when attention was directed to the financial benefits of their previous pro-environmental actions, no changes in the environmental self-identity were observed, and no positive spillover took place (Van der Werff & Steg, forthcoming). Hence, a lack of self-persuasion may be another process why incentives may fail to bring about the aforementioned positive spillover effects that are considered crucial to the success of environmental campaigning (Thøgersen & Crompton, 2009).

In sum, by reviewing how incentives affect consumers’ self-concept, we identified another cognitive side-effect that is associated with the introduction of financial incentives: incentives may disrupt the process of self-persuasion. So while perhaps being effective in temporarily affecting the target behavior, incentivized action does not simultaneously change consumers’ underlying attitudes and self-concept. As such, incentives only affect behavior as long as the incentive is in place, and may prevent the spontaneous onset of other sustainable consumption behaviors.

### 3.3 Incentives taint the signal ensuing from sustainable actions

As argued before, there are many reasons why consumers may want to act sustainably that go beyond the motive of simply wanting to save money. Incentives may shift people’s
attention away from these motives. However, incentives may also directly negate the influence of such non-economic motives. Specifically, some consumers may be motivated to act or purchase sustainably out of image concerns (Ariely, Bracha, & Meier, 2009). These consumers want to appear green in the eyes of others or to themselves (Griskevicius et al., 2010; Dunning, 2007).

Consumers may thus act sustainably in order to signal their green intentions to themselves or others. However, one’s actions will be particularly diagnostic of true pro-environmental intentions when they come at some expense, e.g. effort or financial costs (Van der Werff, Keizer & Steg, under review). After all, if there is no personal cost involved, the same behavior may as well be perceived to be spurred by selfish concerns. One can for instance hardly claim being a true environmentalist if a government program paid for the solar panels on one’s roof. So while incentives may boost demand for sustainable products by making certain sustainable products cheaper, they may simultaneously demotivate consumers who are interested in demonstrating their green intentions to themselves and others. As a consequence, lowering prices for green products (a common and potentially effective way to stimulate demand) may paradoxically demotivate a subset of consumers who are motivated to purchase green products out of reputational concerns (Griskevicius et al., 2010).

There is another, related risk in the reliance on self-interest as a motive to spur green consumption. As exemplified by the labels ‘miser’, ‘cheapskate’ and ‘scrooge’, being exclusively preoccupied with obtaining money can be considered socially inappropriate. In fact, the relentless pursuit of money can also signal as a disregard for others’ needs, and thereby carrying the risk of social exclusion. People who demanded monetary compensation for pro-social behavior (donating blood plasma), for instance, were perceived as being morally unworthy
Thus, although people desire to obtain money for themselves, they may also want to avoid acting in a way that makes them look a-social, as callous and uncaring for others (Dunn, Ashton-James, Hanson, & Aknin, 2010). These image concerns can have important implications for consumption decisions. The fear of appearing cheap may for instance explain why people sometimes shy away from publicly engaging in actions that lead to very small financial gains, such as redeeming coupons (Ashworth, Darke, & Schaller, 2005). The same fear of appearing greedy may lead consumers to forego desirable products that can be obtained at very low prices (Gneezy, Gneezy, Riener, & Nelson, 2012). Taken to the extreme, positioning sustainable consumption as purely an economical choice carries the risk of shunning consumers who fear being seen as exclusively occupied with monetary gain.

The relevance of image concerns for pro-environmental persuasion was examined in a recent study (Bolderdijk et al., 2012). The researchers designed and posted three different sandwich board signs at a local US gas station, each advocating tire pressure checks by either referring to the economic (reduced fuel costs), environmental (reduced emissions) or safety (or better grip) benefits of proper tire pressure. Additionally, a control appeal was included, which merely reminded people to get a tire check without offering a specific rationale. Compliance was measured by counting the amount of free tire check coupons that were taken per type of appeal.

A pilot study showed that the economic message was deemed most persuasive by respondents. However, economic pleas may not be very motivating to consumers who are driven by image motives; consumers who are motivated to see themselves as green, or those worried about appearing cheap. Indeed, results revealed the economic tire-check message was the least effective of all: while the other three signs (including the control sign) elicited some level compliance, not a single coupon was taken while the economic sandwich board was posted.
Additional studies suggest that respondents preferred the environmental over the economic appeal, as the latter made them feel better about themselves. Importantly, this preference was more pronounced when respondents’ self-concept was activated, thus alluding to the role of image concerns in consumers’ responses to persuasive appeals: their self-concept defines the range of behaviors that people can afford (Mazar, Amir, & Ariely, 2008).

In sum, incentives can affect the self-signal that is associated with the decision to act sustainably. A behavior that otherwise would have been diagnostic for a pro-environmental orientation, may be perceived as a self-interested choice if compliance is explicitly linked to some specific financial benefit. Moreover, by making products cheaper, incentives could unwittingly also undermine another source of motivation for some consumers: image concerns. Additionally, there is the risk that financial incentives can demotivate those consumers who are motivated to appear green, as well as consumers who are worried about appearing cheap.

4. Risks of employing financial incentives and potential remedies

By reviewing the cognitive effects that may ensue from the implementation of incentives, we identified several risks of financial incentives as a tool to promote sustainable consumption: incentives may sometimes be ineffective or even counterproductive, have only a temporary effect, or fail to foster related types of sustainable consumption. So how can each specific risk be remedied? In the remainder of this chapter, we offer some guidelines that may help policymakers in mitigating the specific risks that are lurking when applying financial incentives to promote sustainable consumption. While doing so, we identify avenues for further research.
4.1 Adding incentives may not improve target behavior

We previously discussed the risk of small incentives; incentives may create a business mindset in consumers, in which a cost-benefit analysis precedes compliance. Consequently, small incentives may be ineffective or even counterproductive when used to stimulate behaviors that require some. Additionally, consumers who fear of coming across as cheap may not want to be associated with very small monetary gains. But how do we reconcile this pattern with the fact that small incentives are sometimes effective in promoting sustainable consumption practices? A minor charge for single use carrier bags has for instance recently been found to reduce demand (Poortinga et al., 2013).

One obvious possibility is that some types of behavior (e.g. bringing one’s own shopping bag to the mall rather than use plastic bags) require very little effort, and thus even a small incentive may perceived to outweigh the cost. Indeed, research on mindless decision making suggest that any type of motivation may be sufficient to spur behaviors that involve no or very little inconvenience (Langer, Blank, & Chanowitz, 1978). The idea here is that as long as the stakes are very low, people tend to economize on conscious thinking and rely on automatic processes instead. Consequently, any kind of argument, no matter how trivial, can be sufficient to automatically trigger behavior change. Indeed, when sustainable behavior is relatively convenient and requires little effort (e.g. turning an idle car engine off while waiting), even very small amounts of money may boost behavior change (Dogan et al., in press).

One implication of this reasoning therefore is that incentives, particularly when they are relatively small, should be introduced in concert with other measures that reduce the costs of compliance. This conclusion resonates with earlier studies, in which researchers concluded that offering an incentive for energy efficiency by itself is not sufficient to motivate people. Rather,
financial incentives are particularly effective when they are combined with marketing efforts (to draw attention to the presence of the incentive) and facilitation efforts (as to help people translating their intentions to save energy to relevant actions; Stern, 1999). So while incentives (provided that they are large enough to justify the effort required) may trigger motivation, motivation in itself is not always enough to trigger change. Rather, in this situation it is important to consider other factors, such as others barriers that may prevent people’s motivation translating to behavior (Geller, 2002). Consequently, incentives should be installed conjointly with other factors, such as facilitation and knowledge (Stern, 1999).

So even small incentives may be effective if the costs of the promoted behavior are low enough. However, this explanation cannot account for the fact that small incentives can also spur more difficult types of behavior, such as the relatively burdensome behavior of recycling. Recycling requires collecting and returning empty plastic bottles to the supermarket, rather than the much more convenient option of throwing it in the bin (Leventhal & Levitt, 1984). A business frame would thus lead consumers to conclude that the benefit does not reciprocate the effort. Still many consumers do recycle bottles. Why? One option (see Thøgersen, 2003, for a discussion of additional accounts) is that these consumers are acutely aware of, and personally subscribe to, the underlying goal of the incentive – reducing waste. Indeed, many consumers are personally convinced that plastic waste should be minimized. For these consumers, the introduction of an incentive may not induce a business frame; the decision whether or not to recycle remains an ethical decision. If true, one could wonder, what is the added benefit of adding an incentive in the first place? Would these consumers not recycle anyway? Although speculative, one could reason that such incentives operate as a reminder for consumers to act on
their pre-existing attitudes. Future research is however needed to the study whether, and under which conditions, this process can be empirically validated.

4.2 Incentives may only affect behavior temporarily

The possibility that consumers may adopt a business frame, and fail to engage in self-persuasion may prevent them from keeping their changed behavior after the incentive is removed. So does this mean that the benign effects of incentives always cease after they are removed? Not necessarily so. First, while some behaviors require repeated action (e.g. reducing showering time, also known as ‘curtailment’ behaviors), other behaviors require only a single action (e.g. insulating one’s home; ‘efficiency’ behaviors; Gardner & Stern, 2002). So if a financial incentive can bring consumers to adopt one single action with lasting impact (e.g. purchasing an electric vehicle), the incentive will have had a lasting sustainable effect (any time the car is used, less fuel emissions result). Second, incentives may have an impact after they have been removed if they succeeded in changing underlying attitudes, for example, if the relevant behaviors turns out having benefits that were not recognized beforehand. Car drivers for instance kept using public transport after being forced to use it temporarily due to road work ended (Fujii & Garling, 2005) or after being lured to try public transport during a free trial period (Thøgersen, 2009); consumers discovered that riding the bus was more pleasant than they had anticipated (their attitudes shifted), and kept doing so after the initial reason had for doing so had disappeared.
Incentives may not affect broader types of sustainable consumption

Incentives can be effective in promoting some specific sustainable action, but may not result in positive spillover if consumers are not personally convinced that acting sustainably is the right thing to do. We discussed the relevant study by Berger and Caldwell (2003) earlier: when respondents were paid for signing the petition, they were unlikely to ascribe their support to themselves (they did not engage in self-persuasion), and were therefore unlikely to agree to a related, bigger request: helping the homelessness center during the weekend break.

So incentives may disrupt the process of self-persuasion. This is however not the only relevant insight from this study. In an attempt to undermine the disrupting effect of incentives, some paid respondents study received praise after signing the petition (they were informed they were ‘helpful’), while others did not receive such praise. Despite having being offered a financial incentive, respondents receiving praise underwent a change in their self-concept (they saw themselves as being more altruistic), and consequently did exhibit a positive spillover effect: these respondents were more likely to say yes to the request to help the homeless shelter in the weekend.

This insight seems relevant for sustainable consumption as well. We know that incentives may disrupt positive spillover in the environmental domain (Evans et al., 2012), but apparently this need not always be the case; it likely depends on how the initial action is perceived by the consumer. Indeed, some studies suggest that relabeling the same neutral action as ‘green’ can affect consumers’ environmental-conscious self-concept, and promote encourage related pro-environmental actions on subsequent occasions (Cornelissen, Pandelaere, Warlop, & Dewitte, 2008). Future research should therefore examine the possibility that incentives can lead to positive spillover, provided that initial compliance is relabeled as a ‘green’ action.
5. Conclusion

According to the instrumental perspective on money, incentives are effective in motivating consumers in as far as they allow consumers to purchase more of the services and products they desire. Consequently, incentives (particularly large ones) can be an effective and required tool to promote sustainable consumer behavior. However, they should not be considered the only tool given the fact that they have some important limitations. Specifically, incentives do something to people - they have some important cognitive side effects that are often not known or considered by policymakers. Specifically, their installment may lead consumers to adopt a business frame, disrupt the process of self-persuasion, or taint the self-signal ensuing from the decision to act sustainably. This means that incentives can sometimes paradoxically discourage the very behavior they are meant to encourage. Even when incentives are effective in promoting the target behavior, they can still do more harm than good when they only affect behavior temporarily, or simultaneously demotivate consumers to engage in other, more pertinent forms of sustainable actions that are not financially attractive.

By alerting policymakers to the risks associated with financial incentives, as well directing them to potential remedies (e.g. considering the size of the incentive, introducing incentives in concert with supporting policies, explicitly linking advertised actions to environmental benefits), we hope this chapter leads to a more efficient deployment of incentives. We also hope this chapter triggers policymakers to more quickly consider alternatives where incentives are less appropriate: in situations where the potential risks associated with implementation of incentives outweigh their intended benefits.
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