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Nudges that hurt those already hurting – distributional and unintended effects of salience nudges*

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ABSTRACT

Nudges are becoming increasingly popular policy tools. Yet, distributional effects of nudges are largely unknown. We first design an economic laboratory experiment to examine the incidence of an opportunity cost reminder nudge (a salience nudge) designed to curb spending, while accounting for heterogeneity in emotional responses – specifically the pain of paying. Pain of paying is optimal for ‘unconflicted’ consumers, but too low for ‘spendthrifts’ and too high for ‘tightwads’, causing sub-optimal spending. Our empirical results imply the nudge increases pain of paying for tightwads, thereby reducing spending by tightwads, who already spend too little, while it entirely fails to reduce the spending of those who would have benefited from a spending reduction (spendthrifts). Overall, the nudge therefore might reduce consumer welfare. We next examine if the adverse impact of the opportunity cost reminder nudge is explained by a general tendency for all nudges to exacerbate peoples’ underlying spending preferences. We specifically test whether a salience nudge designed to boost spending correspondingly adversely affects spendthrifts? We unexpectedly find that subjects perceive the spending booster nudge as a “spending reminder”, which again, reduces spending by tightwads only, while not affecting spending by the other consumer types. Our results highlight two important aspects of salience nudges – given the complexity of consumer emotions and information processing, salience nudges can have undesired welfare effects, and the direction of their impact may be the opposite of what was intended.

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1. Introduction

Although many emotions impact decision-making (e.g. Loewenstein, 2000; Schwarz, 2000; Bosman and Van Winden, 2002; Fehr and Gächter, 2002; Sanfey et al., 2003; Knutson et al., 2007; Pfister and Böhm, 2008; Coricelli et al., 2010; Cubitt et al., 2011; Jordan et al., 2015), the pain felt when spending money may be particularly important to consumer behavior (Loewenstein and O’ Donoghue, 2006). Pain of paying may help in making responsible economic decisions, in that it acts as a proxy for opportunity costs (Prelec and Loewenstein, 1998; Loewenstein and O’ Donoghue, 2006; Rick, 2013).¹

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¹ The original pain of paying theory proposed by Prelec and Loewenstein (1998) was derived from mental accounting theory, which posits direct or immediate utility from transactions, in addition to the indirect utility of the transaction that is derived from consumption itself (Thaler, 1985, 1999). Hoelzl et al. (2009) and Kamleitner et al. (2010) find that consumer attitudes toward loan repayment are consistent with the pain of paying model.

However, for some people, the pain of paying is suboptimal. Rick et al. (2008) develop a scale that identifies subgroups of people who experience either too little pain, leading to too much spending for the individual's own liking ('spendthrifts'), or too much pain, leading to too little spending ('tightwads'). People with helpful levels of pain of paying are referred to as 'unconflicted'.² Rick et al. (2011) tested, and found, that spendthrifts and tightwads are indeed more unsatisfied with their own spending behavior, than are unconflicted consumers.

Suboptimal spending has shaped public policy. For instance, spendthriftiness has been explicitly targeted by 'spendthrift trusts', institutionalized to protect a beneficiary from spending too much. Some states even allow self-settled trusts, where a beneficiary protects herself from overspending (Hirsch, 1995). In addition, both tax deductions on future spending and default nudges for retirement savings are policies designed to reduce spending today. Of particular interest to this study, though, are policies of the 'one-size-fits-all' -type: specifically nudges that increase the salience of costs to spending today, i.e., opportunity cost reminder nudges. Nudges are becoming increasingly popular as part of public policy and opportunity cost reminder nudges in particular have been adopted and studied, for example, in the context of paying delinquent taxes and fines (Hallsworth et al., 2014; Haynes et al., 2013), repaying loans (Cadena and Schoar, 2011), meeting savings goals or commitments (Karlán et al., 2016), and taking prescription medicines (Pop-Eleches et al., 2011).³ Such nudges are typically justified by the assumption that consumers focus too little of their limited attention on opportunity costs, causing them to over spend. All of these policies focus on increasing welfare by reducing over consumption, with the goal of increasing the welfare of people who overspend. If such policies target the whole population, they may decrease welfare for those who already underspend.

Sunstein (2016) states undesired distributional effects might weaken the argument for a nudge (p.179). Roberts (2018) goes further and argues it is the government's ethical responsibility to consider distributional effects of nudges. Despite their importance, distributional effects of salience nudges are largely unknown. This might be partly due to the standard assumption in social sciences that the impact on consumers of information is non-negative – more information is typically thought to benefit consumers by allowing them to better align decisions with preferences. However, theoretical and empirical studies show how people may benefit from less information if the information causes negative emotions (e.g. Köszegi, 2003; Dana et al., 2007; Oster et al., 2013; Grossman, 2014; Onwezen and van der Weele, 2016; Thunström et al., 2016; Gigerenzer and Garcia-Retamero, 2017; Grossman and van der Weele, 2017). Also, informational nudges have been referred to as "emotional taxes", due to the negative emotions (e.g. pain, anxiety, fear, guilt) they may evoke (e.g. Glaeser, 2006; Loewenstein and O'Donoghue, 2006). Allcott and Kessler (2015) examined welfare effects of home energy conservation reports, suggesting such reports may impose moral costs on consumers. They found considerable heterogeneity in consumer welfare impact from the reports, ranging from positive to negative. Like any tax, emotions may be helpful in steering consumption to optimal levels. However, if emotions evoked by nudges are suboptimal, consumers will fail to maximize utility.⁴

In this study, our primary objective is to examine the impact on spending of an opportunity cost reminder nudge. The intent of the opportunity cost reminder nudge is to focus consumers' attention on the opportunity cost of their spending. If the nudge focuses consumer attention on their true opportunity cost, it benefits tightwads and spendthrifts alike. However, if the nudge instead focuses consumer attention on their pain of paying (the imperfect proxy for their true opportunity cost), it may instead decrease their welfare by further distorting spending.

It is an open question how opportunity cost reminder nudges impact consumer spending in an incentivized context, where consumers make actual spending decisions. Based on hypothetical consumer choices, Frederick et al. (2009) find that an opportunity cost reminder nudge reduces spending intentions by spendthrifts, suggesting the nudge focuses consumer attention on the true opportunity cost of their spending, rather than exacerbate emotions from payments. In an incentivized setting, Thomas et al. (2011) find that cash payments are more painful than credit card payments, and find cash payments exacerbate pain of paying for tightwads, but not for others.⁵ These studies imply that certain instruments (nudges or modes of payment) may exacerbate intrinsic pain of paying, thereby distorting spending, while others might be helpful. Another implication is that responses to instruments that impact spending might be context dependent. Context dependency is well documented along the dimension of hypothetical versus real choices (see Ajzen et al., 2004). This dimension might be

² Note that tightwaddism/spendthriftiness is distinctly different from self-control. As discussed in Rick et al. (2008), tightwads and spendthrifts may have similar levels of self-control, since both groups have problems with self-regulation. Both tightwads and spendthrifts believe they would benefit from revising their spending, but lack sufficient self-regulation to overcome their suboptimal spending.

³ See Ericson (2014) for a detailed model, and Gilbert and Zivin (2014), Grubb and Osborne (2014) and Grubb (2015) for an empirical and theoretical examination in the context of household electricity and mobile phone usage. The lack of attention to one's opportunity costs is also a critical feature of the tax salience literature which often argues that obscuring opportunity costs can increase consumer spending, and by extension, tax revenue (Chetty et al., 2009). Further, opportunity cost reminders (often also referred to as a 'budget reminders') were recommended for contingent valuation studies by the NOAA Panel on Contingent Valuation (Arrow et al., 1993), and has since become common practice in contingent valuation studies.

⁴ Previous studies have examined heterogeneity in responses to other informational nudges designed to redirect consumer behavior. Allcott (2011) finds the response to information on positional energy usage, relative to that of one's neighbors, depends on a consumer's original position. Beshears et al. (2015) find heterogeneity in responses to peer information on retirement savings, over nonunionized and unionized recipients. Ho et al. (2016) find that informational nudges on green electricity have a stronger effect on intrinsically pro-social consumers. Our study differs from this literature by focusing on heterogeneity in the impact of a nudge over consumer groups who might be adversely affected.

⁵ Fusaro (2013) and Khan et al. (2015) provide further evidence that usage of, and attitudes toward different modes of payment are consistent with the predictions with regards to pain of paying (for further details, see also Prelec and Loewenstein, 1998; Soman, 2001; and Raghuram and Srivastava, 2008).

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