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The future of behavioral insights: on the importance of socially situated nudges

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Abstract: Socially minded nudges are the more sociable cousin of regular nudges: they reveal important information about other people's behavior, raise normative expectations about what is desirable, can be shared and transmitted online or offline and leverage social incentives and sanctions that regulate individual and group behavior. In this article, I argue that many of the most successful nudges – that is, nudges that have been well replicated, offer positive spill-over and whose effects last over time – have in fact been social nudges. Moreover, the efficacy of other nudges can be enhanced by considering the social dimension of the problem that they are trying to address. In asking where behavioral science should go next, I argue that although the Behavioural Insights Team has traditionally shied away from addressing more complex and sticky societal issues, socially situated nudges are particularly well suited to address many of the important challenges raised by Sanders *et al.* (2018).

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Introduction

It was in the spring of 2017 that David Halpern and I were on a panel together here in Cambridge talking about behavioral insights. He asked me what was keeping me busy these days and I had an immediate answer: fake news. I asked what the Behavioural Insights Team is currently doing about the spread of fake news, especially in light of the fact that the UK parliament recently opened up an investigation into the various ways in which fake news is undermining democracy (Harriss & Raymer, 2017). Halpern asked me what I suggest they do – what was *my* big idea? I told him that my co-authors and I have been working on developing a fake news 'vaccine'

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(van der Linden *et al.*, 2017a). My memory is a bit foggy, but when asked to elaborate, I recall rambling on about what a complex social issue fake news is and I think we both agreed that I failed to deliver a succinct and actionable policy pitch! I am writing about this event because it was during my talk that I recalled another conversation, some years ago, with Maya Shankar (then head of the US Social and Behavioral Sciences Team) about what it is exactly that they are doing about climate change, another clear complex global issue. To her own dismay, the short answer was, "Not much."

These are just two examples, but in much of my experience, 'nudge' is often seen as almost purposefully steering clear of trying to solve some of the world's biggest and most complex social dilemmas. I was therefore pleased to see clear acknowledgment of this in Sanders, Snijders and Hallsworth's (2018) article about where we are in behavioral science and where we are going next. In fact, Sanders and Halpern readily admit that they have been advocating for the 'low-hanging' fruit, at least in the early life of the Behavioural Insights Team, and perhaps that made good sense in order to establish the viability of using behavioral science effectively in policy. I was also pleased to see a collective desire to tackle bigger problems. Indeed, as the authors state, "it would be disappointing if tax compliance were the only application of behavioral science active in policy ten years from now." As a social psychologist, I spend much of my time thinking about complex societal affairs, so I completely agree with the observation that although these issues often seem daunting at first, that is not a good reason to avoid tackling them. Of course, when it comes to thorny problems, we need to lower our expectations, as success is often less immediate and more difficult to achieve. However, it is exactly for that reason that insights from behavioral science are desperately needed in this area. While Sanders *et al.* claim to have made dedicated attempts to start tackling bigger problems, such as poverty and recidivism, their section on thorny problems reads more like a side note rather than an agenda-defining item.

I understand the difficulties. When we published a policy memo distilling key insights from psychological science to help improve behavioral decision-making about climate change (van der Linden *et al.*, 2015), Cass Sunstein (2015) wondered how much we can achieve in policy with better communications. This remark is ironic, of course, given that some of the most successful nudges have relied on exactly such insights: a simple tweak in wording can be a powerful lever for behavior change, from mobilizing people to vote to saving household energy consumption (Cialdini *et al.*, 2015; Panagopolous & van der Linden, 2016). Nonetheless, I can understand the pessimism, and Sunstein is correct, of course, in that some of these problems are going to need much more than a simple nudge. Moving from encouraging people to use double-sided printing to countering violent extremism is quite the

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behavioral stretch. In fact, polarized issues like climate change are not low-hanging fruit; they often require so-called 'heavy lifting' (i.e., the type of controversial policies whose adoption is likely to face serious obstacles) (Sunstein, 2015). So where does that leave us? Although Sanders *et al.*'s (2018) review covers an impressive range of issues, from the replication crisis and small effects to spillover and thorny problems, its breadth necessarily restricts its depth. Little advice is offered on how behavioral science can tackle some of the world's most pressing social issues, including fake news, extremism, inequality and climate change. When I was first invited to write a response, I wondered what else I could say about nudge that Sanders *et al.* had not already addressed in their article. Yet, the more I thought about how to effectively address thorny problems using insights from behavioral science, the more it dawned on me that (1) the theory of nudge is *socially impoverished* in some ways, which is important, because (2) many of the most 'successful' behavioral insights have in fact been *socially minded* nudges. They have been successful in the sense that they satisfy many of the problems discussed and reviewed by Sanders *et al.* (i.e., nudges that are replicable, scalable, have positive spillover and have shown some promise of long-term effects, especially in the context of major societal issues). Accordingly, in the remainder of my response, I will argue that in order to tackle thorny, complex and deeply embedded social problems, we need more socially minded nudges.

The power of socially situated nudges

Not all nudges are social. In fact, let me summarize the spirit of social nudges: they inform us about the behavior of relevant others, raise normative behavioral expectations in some way, leverage social incentives and sanctions or are socially networked and transmissible from one individual to another. The social nature of the nudge could be implicit or explicit, online or offline. Interestingly, when you think about the definition of the 'NUDGE' acronym (Thaler & Sunstein, 2009), it becomes clear that there are few explicit social elements present ('iNcentives', 'Understand mappings', 'Defaults', 'Give feedback', 'Expect error' and 'Structure complex choices'). To illustrate, the idea of altering the order in which healthy food options appear in school cafeterias involves nothing inherently 'social'. The choice environment here seems to mean 'physical' environment. Clearly, the environment is also social (people queuing), but the nudge itself is not socially situated in that it is does not inform people about the behavior of others, there are no pronounced social expectations, the nudge is not designed to be socially shared or transmitted and there are no social incentives or sanctions regulating an individual's behavior. This is not to say that regular nudges are not successful (on the contrary).

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It is just evident that in much nudge thinking, the focus seems to be geared toward reducing cognitive load and effort, rather than thinking about the social dimensions of the nudge. Perhaps the greatest testament of this is one of Thaler's personal favorites: the urinal fly nudge. Clearly, aiming at a photo-realistic image of a fly is more of a private matter than a socially shared activity. It also illustrates the banality of nudge that many people seem to associate with it: reducing urinal spillage solves one kind of problem, but it is not tackling some of society's greatest challenges. However, in general, 'standard' nudges may benefit a great deal from upping their social IQ. For example, in light of hyperbolic discounting, the 'Save More Tomorrow' plan focuses on having people commit in advance to allocating a portion of their salary to retirement savings (Thaler & Benartzi, 2004). Although effective, there is nothing particularly social about this nudge. Yet, 'Save More Tomorrow' commitments could be increased further by informing people how many referent others are participating (making it a social, group-based initiative) – similar social norm strategies have proven highly effective in other areas (Cialdini *et al.*, 2015). There are many more examples. Take the case in point of trying to reduce cognitive load when it comes to filling out complicated forms to receive free school meals. Such forms are problematic, as low-income individuals often already have limited cognitive bandwidth (Mullainathan & Shafir, 2013). Automatic enrollment has greatly benefitted underprivileged communities in this regard, but the nudge fails to account for the fact that free school lunches are heavily stigmatized (Oostindjer *et al.*, 2016) – further stigmatization of poverty can be an unintended *social* consequence (one of the key issues raised by Sanders *et al.*, 2018). For example, in the UK, 29% of eligible children do not participate in the UK's Free School Meals program. So why not design an appropriate socially situated nudge instead? Indeed, reframing free school lunches as a program that is available to *all* children may be effective. For example, a rise in wider peer group participation reduced non-participation among low-income children by between 29% and 35% (Holford, 2015). Because much of human behavior is inherently social, it seems difficult to argue against the need for more socially minded nudges. We can ask, however, whether social nudges have indeed delivered on their potential. I will review some key examples of complex societal issues below where social nudges have been shown to be replicable and scalable, with good potential for long-term effects and positive spillovers.

Limiting global climate change

The importance of insights from behavioral science has been increasingly highlighted in climate change policy-making (van der Linden *et al.*, 2015). In fact,

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one of the largest real-world behavioral science experiments has become a posterchild for the success of 'behavioral insights' (Cialdini *et al.*, 2015). The company OPOWER supplied millions of customers with tailored energy bills revealing social information about the consumption of their neighbors (Schultz *et al.*, 2007; Allcott, 2011). On average, the intervention led to a reduction in household energy consumption of about 2%.

Although this sounds small, when scaled across millions of households, this is a classic example of the argument that 'small effects can add up to large-scale policy consequences' (Cialdini *et al.*, 2015) – being the equivalent of an 11–20% short-run price increase (Allcott, 2011). This finding has been replicated in many policy-relevant domains, from tax compliance (Hallsworth *et al.*, 2016) and antibiotic prescriptions (Hallsworth *et al.*, 2016) to water conservation (Ferraro & Price, 2013), including meta-analytic evidence (van der Linden & Chryst, 2017). Moreover, although social norm interventions decay substantially over time (van der Linden, 2015, 2017a), they have been among the few initiatives that do reveal some long-term effects on behavior even when the interventions are discontinued (Schultz *et al.*, 2007; Ferraro & Price, 2013; Allcott & Roberts, 2014). In addition, descriptive norms have been shown to result in positive spillover. For example, in the context of charitable donations, observing generous donating behavior not only increases donations, but also inspires other, unrelated types of prosocial behavior (Nook *et al.*, 2016).

These nudges are inherently social because they inform (a) people about the behavior of referent others and (b) set normative expectations about what type of behavior is 'typical' and 'desired' – reinforcing conformity with the desired norm. Importantly, many social processes are *recursive*, allowing nudges to initiate virtuous feedback cycles. For example, when more people conform to the desired norm, the social signal becomes stronger and more persuasive, encouraging further compliance. Social nudges are important in these types of complex social dilemmas because people's sense of self-efficacy is often contingent on their perception of how many others are contributing (Kerr & Kaufman-Gilliland, 1997).

Another relevant example is the use of so-called 'green defaults'. Defaults are a classic nudge, and their effectiveness has been demonstrated in a variety of contexts, from encouraging retirements savings (Thaler & Benartzi, 2004) to organ donor registration (Johnson & Goldstein, 2003) to green energy (Pichert & Katsikopoulos, 2008), with some evidence to suggest that defaults can increase green energy uptake by tenfold (Ebeling & Lotz, 2015). The classic explanation for the success of defaults is not social: people stick with them because it takes more cognitive effort to adjust away from the default (Tversky & Kahneman, 1974). However, a number of recent studies have advanced another, social explanation to account for the default effect. Defaults communicate implicit

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norms (Davidai *et al.*, 2012); that is, defaults signal what the normatively desired course of action is (McKenzie *et al.*, 2006). By setting defaults, institutions implicitly engage in norm signaling (Tankard & Paluck, 2016); for example, universities that adopt sustainable defaults implicitly signal what the desired prototypical behavioral choice for the group is, which can not only increase behavioral uptake, but also promote public acceptability of related policies (Santos & van der Linden, 2016).

Voting: leave or remain?

Mobilizing citizens to vote is a classic example of a difficult social dilemma. Yet, simple implicit social cues, such as mere images of human eyes, have been shown to increase voter turnout in local elections (Panagopolous, 2014; Panagopolous & van der Linden, 2016). Human gaze detection is an evolved cognitive mechanism that largely draws on areas of the brain that are not under voluntary control, so images or shapes that resemble human eyes can be sufficient to trigger the involuntary detection of another's gaze. Panagopoulos (2014) reports an average effect size of 2%. Although modest, raising turnout by a few percentage points can have large practical consequences in districts with hundreds of thousands of voters. Critical societal issues such as the EU Brexit referendum (with results being 51.9% leave vs. 48.1% remain) can depend on relatively small differences in voter turnout. More generally, there is some evidence that eye cues can elicit cooperation across domains, from reducing theft to increasing charitable donations (Bateson *et al.*, 2006; Ernest-Jones *et al.*, 2011; Nettle *et al.*, 2012).

Larger effects have been observed with more explicit social norm interventions, such as revealing the average voting history in a household or the voting behavior of neighbors, raising voter turnout by as much as 8% (Gerber *et al.*, 2008), which is cost effective at a rate of $2–3 per vote. Social networks further illustrate the power of socially situated nudges. Messages delivered to over 60 million Facebook users during a 2010 US election not only influenced information-seeking and voting behavior, but also the behavior of a user's friends and friends of friends. Importantly, the effect of social transmission was *greater* than the direct effect of the messages themselves (Bond *et al.*, 2012). These effects are not short-lived, either. Davenport *et al.* (2010) tracked over a million voters and found that the effects of social norm communications can last up to two years after the initial treatment.

The fake news nudge

The rise of fake news and misinformation poses a serious threat to people's ability to form evidence-based judgments (Lewandowsky *et al.*, 2017;

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Schwartz *et al.*, 2016; van der Linden, 2017b). A large majority of Americans find that fake news leaves them confused over basic facts (Barthel *et al.*, 2016). Although the root causes of increasing societal conflict and political polarization are clearly complex, this in itself does not preclude the implementation of behavioral insights to help protect people from being misled by false information. For example, in a recent *Science* editorial, we highlight that it is possible to pre-emptively warn and inoculate people against fake news across the political spectrum (van der Linden *et al.*, 2017b). Inoculation theory draws on a biological analogy: just as injections with a weakened dose of a virus can offer resistance to future infection by triggering antibodies in the immune system, the same can reasonably be achieved with information, cultivating 'mental' antibodies. Research in different domains, from public health to politics to climate change, has shown that through warnings and 'cognitive rehearsal' (i.e., pre-emptively debunking a falsehood), attitudinal resistance can be conferred (Banas & Rains, 2010; Niederdeppe *et al.*, 2015) and politicization can be counteracted (Bolsen & Druckman, 2015; Cook *et al.*, 2017; van der Linden *et al.*, 2017a).

Warnings about disputed content can help nudge people from relying predominantly on a 'system 1' (heuristic) to more of a 'system 2' (deliberate) type of information processing. Controlled laboratory evaluations of Facebook's disputed warning label system (tagging articles that have been disputed by independent fact-checkers) have shown some promise in reducing the credibility of disputed articles (Pennycook *et al.*, 2017). On the Behavioral Public Policy Blog, Baggio and Motterlini (2017) suggest other real-world social applications of inoculation, such as in the context of vaccine hesitancy, as after childbirth parents are typically overwhelmed and may be more susceptible to misinformation. Other potential societal applications include building cognitive resistance to extremism and radicalization in conflict areas. Inoculation can also offer crossover protection to related but experimentally untreated beliefs (Parker *et al.*, 2016), and although the effect decays, there is some evidence to suggest that resistance can persist over time (Niederdeppe *et al.*, 2015).

Thus far, the fake news nudge itself appears to have no social element, as inoculation is mostly about achieving cognitive resistance to misinformation. However, the most powerful application of inoculation lies in its ability to spread (van der Linden *et al.*, 2017b), both online through social networks, as well as interpersonally (Compton & Pfau, 2009; Ivanov *et al.*, 2012). In this sense, the vaccine metaphor can be extended so that potential herd immunity and societal resistance can be achieved against misinformation. This could occur when a sufficient number of people have been inoculated in a network or when the rate of transmission of the 'vaccine' outpaces the

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rate at which misinformation replicates. In short, the most important consequence of inoculation is its ability to be scaled at population level through social transmission. For example, we have developed a 'fake news' inoculation game that can be played and shared online.[1] These are all areas where behavioral insights obtained from large-scale randomized controlled trials would be of great value.

Conclusion

In sum, many of the most successful nudges have been socially oriented. Importantly, these nudges are well replicated, have positive spillover effects and last over time. Conversely, the efficacy of traditional nudges may be enhanced – and unintended negative consequences can be averted – by considering the social dimension of the problem the nudge is trying to solve. In asking where behavioral science is going next, I hope to have illustrated that thorny problems often concern recursive social processes that can be more effectively addressed with socially minded nudges. For many of my psychologist colleagues, I have probably not gone far enough (e.g., see Mols *et al.*, 2015), as many of society's most urgent challenges reflect deep commitments to social groups and identities and are going to need more than a simple nudge. But upping the social IQ of every existing and new nudge is a step in the right direction: does this nudge signal what behavior is desired? Is the nudge socially inclusive? Does it inspire more people to comply? Can the nudge be shared and transmitted? Social nudges may be simple, but they have the distinct advantage of making friends and they can turn a drop into a wave and transform an individual into a crowd, and crowds can change the world.

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