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What is sludge? Comparing Sunstein's definition to others'

Philip W. S. Newall

School of Psychological Science, University of Bristol, 12a Priory Road, Bristol, BS8 1TU,
United Kingdom

Thaler and Sunstein's book *Nudge* revolutionised how behavioural science is applied to public policy, with a simple and yet broad recommendation to build decision environments in ways that made people better off, as judged by themselves (Thaler & Sunstein, 2008). This idea has been attractive to many policymakers and academics, as nudges only encourage certain choices, rather than mandate them (Sanders, Snijders, & Hallsworth, 2018). The Behavioural Insights Team, originally setup by the UK Prime Minister David Cameron, did much of the early work implementing nudging in practice. Their "EAST framework", emphasizes how nudges could work by making preferred choices easy, attractive, social, or timely (Behavioural Insights Team, 2014). This early work by the Behavioural Insights Team gives pension auto-enrolment is an example of a nudge that makes things easy, and the provision of information about neighbours' energy consumption is an example of a social nudge. Both of these nudges can help improve household financial health, and so should help to make many people better off. In recent years both Thaler and Sunstein have turned to a logical extension of their original idea, by looking at ways that decision environments can be built to make people worse off. This problem of 'sludge' was covered by Thaler (2018) first, has been subject to multiple papers by Sunstein (Sunstein, 2018; Sunstein, 2020; Sunstein & Gosset, 2020), and formed a chapter of the latest edition of *Nudge* (Thaler & Sunstein, 2021). Here I review Sunstein's new book, *Sludge: What stops us from getting things done and what to do about it*, the longest work from either of these two authors on sludge.

Sunstein's definition of sludge

The definition of any new term is important for future work. Clear and agreed-upon terms enable broad dissemination of new ideas, and terms that are simple and yet wide-ranging can have the broadest impact. The original conceptualization of 'nudge' is a good example, as the term is simpler than alternatives such as "asymmetric paternalism" which were proposed around a similar time (Camerer, Issacharoff, Loewenstein, O'Donoghue, & Rabin, 2003).

Nudges can also be applied in many different ways, as shown by the EAST framework, despite this conceptual simplicity.

Sunstein's definition of sludge mirrors the first part of the Behavioural Insights Team's (2014) framework: nudges that make things easy. For Sunstein, sludge is anything that contrastingly makes an action harder to do:

'If sludge is understood to consist of frictions that separate people from what they want to get, the concept is not entirely mysterious. Much sludge involves waiting time (in person, on the phone, even online). Much of it involves reporting burdens (as when people are required to fill out weekly reports, explaining what they have been doing with their lives). Much of it consists of dreary or duplicative application requirements, including time spent online, which might be required if people are seeking to obtain money, medical care, a job, a visa, a permit, or some kind of life-saving help. Much of it involves travel (as when people need to show up somewhere for an in-person interview).' (Sunstein, 2021), pp.4-5.

Sunstein's book is filled with examples of sludge involving excessive frictions, which needlessly prevent people from doing what they want to do. This sludge is something that comes at people from many directions. Sunstein gives many examples of sludge from government, such as difficulties around voter registration and requirements to wait in long lines during mandated in-person voting. Other examples of government sludge involve complicated forms for student and medical aid programs, and sludge reducing access to abortion. US States are meant to not impose 'undue burdens' on abortion availability, a vague term which can be used to include a large number of medical and mental health checks. Sunstein also gives many examples of sludge produced from the private sector. Here Sunstein gives examples of as excessively long waiting times on customer service lines, and requirements for refunds to be mailed-in only. More broadly, this sludge could be any

asymmetry between the ease of signing-up to a repeat purchase product, and the difficulty of cancelling that product (e.g., being able to sign-up online, but only cancel in person, on the phone, or via letter). These are all frictions which get in the way of things that people may want to do. These examples are conceptually like nudges in that they do not force people to act a certain way, and only act by encouraging a certain action, by making it relatively easier to do nothing and accept the status quo. Furthermore, if these examples get in the way of people doing what they want to do, then they can be seen as being distinct from nudges, which are designed to make people better off (Thaler & Sunstein, 2008). These examples share many of the attractive properties of nudge, and also have a clear policy implication: that sludge should be reduced.

However, there are also two features of Sunstein's definition of sludge which differ from the widely-accepted properties of nudge. First, Sunstein's sludge is all alike, as it all focuses on frictions and burdens. Second, Sunstein's sludge is usually bad for people, but can also be good for people. Chapter 5 of *Sludge* focuses on cases where sludge makes people better off, for example by inhibiting an impulsive action that would make a person worse-off, and Sunstein has also authored a paper on this topic of "optimal sludge" (Sunstein & Gosset, 2020). In my view, this definition loses two of the pleasing properties of nudge. First, Sunstein's sludge is not as broad as nudge. Yes, nudges oftentimes make things easy, but nudging uses a lot of other tools as well, such as social influence (Behavioural Insights Team, 2014; Dolan et al., 2012). Surely, social influence can be misused as easily as excessive frictions are? Second, the policy implication of Sunstein's definition is not as clear as with nudge. Sunstein (2021) states that 'I am here mostly to bury sludge, not to praise it' (p.8). But if sludge is usually bad for people but sometimes good, then this mission of sludge reduction becomes complicated. However, as a new term sludge has been subject to other definitions, which will next be compared along these same two dimensions as Sunstein's definition.

Other definitions of sludge

Shahab and Lades (2021) follow Sunstein in focusing on excessive frictions, but discuss only frictions that inhibit *beneficial* actions. This focus on beneficial actions sidesteps the conceptual issue around whether sludge can ever be optimal, as by definition people will want to perform beneficial actions (Shahab & Lades, 2021). However, like Sunstein's definition, this conceptualisation focuses only on one type of costly behaviour change, namely excessive frictions. Soman et al. (2019) give an essentially identical definition, by focusing only on cases where excessive burdens inhibit beneficial actions.

Mills (2020) proposes a fundamental symmetry between nudge and sludge, with the difference between the two also arising from frictions. Where a nudge decreases frictions, a sludge will increase frictions. Therefore, a nudge to increase the prominence and hence uptake of healthy food in a supermarket simultaneously creates sludge towards all non-healthy foods. This definition is deliberately broad, as unlike Sunstein the author specifically says that many other influences of behaviour work by either reducing or increasing frictions. The author gives examples such as social influences or even graphic health warnings on cigarettes (Mills, 2020). A graphic health warning can create negative emotions around smoking, which act effectively as a friction against smoking. However, this conceptualisation loses Thaler and Sunstein's (2008) original proposal that nudges make people better off. The sludge of a cigarette health warning should help to make a smoker struggling to quit better off, while the symmetrical nudge of removing the health warning would make the smoker worse off. To resolve this dilemma, Mills (2020) uses the additional term "Pareto" for a nudge or sludge which increase the welfare of the person nudged, and the term "rent-seeking" for a nudge or sludge which decrease that person's welfare. For those looking to implement effective behavioural policy, these two new terms of Pareto and rent-seeking may be more

important than nudge and sludge, which effectively become very similar under this definition, since both can be either beneficial or unwanted.

Thaler's (2018) short Editorial in *Science* provides another definition. Thaler also uses similar examples of sludge involving frictions, such as mail-in refunds and tax forms.

However, Thaler explicitly goes beyond frictions by using the Bernie Madoff Ponzi scheme as an example of sludge (Thaler, 2018). Although the format of this article did not provide space for elaboration of further examples, it appears likely that Thaler would see beneficial frictions as nudges, and not as optimal sludge. An example is his earlier work on Christmas clubs, which provide zero-interest saving accounts which cannot be accessed before Christmas, and which enable present-biased people to better save for Christmas (Thaler & Shefrin, 1981). Thaler's (2018) position that nudge is good and sludge is bad can be inferred from his call to action that 'less sludge will make the world a better place', p.431.

Related ideas in behavioural policy

As stated earlier, nudge has been so successful because of its simplicity and breadth of application. In contrast, assume that sludge is defined as narrowly as focusing on only excessive frictions, which should presumably be countered by attempting to make things easier again. In this case, the term adds little to the pre-existing nudge framework, as nudges that make things easier have always been a central element to the nudge toolkit (Behavioural Insights Team, 2014). This section looks at related findings from behavioural policy, which all explore ways that decision environments can encourage people toward worse decisions, and discusses the extent to which they could fit within the alternative definitions of sludge provided by Sunstein and Thaler.

Page (2019) explores various misuses of disclosure requirements. Limitations of time and attention mean that only so much information can be attended to at any time. These

limitations can be exploited by firms that place conditions favourable to themselves amongst disclosures or terms and conditions that are either long or confusing (Page, 2019). And although governments may attempt to limit this activity, any vague requirements can still be interpreted by firms in self-serving ways, similar to Sunstein's example of 'undue burdens' in abortion law. Long or confusing disclosures are clearly relevant to all definitions of sludge. 'Seduction by contract' is a related but slightly broader idea, which can encompass confusing disclosures but also firms' ability to market themselves based on an increasing number of complex product features (Bar-Gill, 2012). One mobile phone company can promote its free roaming charges, and another company its insurance policy. This can be a way for firms in a market to get away from charging excessive prices, given the difficult for people to process the value of these different product attributes (Gabaix & Laibson, 2006; Heidhues, Köszegi, & Murooka, 2016). These broader examples appear consistent with Thaler's definition and not Sunstein's.

'Dark patterns' are deceptive aspects of website design which lure people toward unattractive options. Pre-filled checkboxes when signing-up for a new online account are one example; while one check-box indicating acceptance with the website's terms and conditions will need to be ticked in order to create the new account, another pre-filled checkbox might agree for the user to join the website's mailing list (Gray, Kou, Battles, Hoggatt, & Toombs, 2018). This is very similar to the use of default options in many nudges (Johnson & Goldstein, 2003), with the only difference that presumably many users will not want their email accounts to be filled-up with more emails. Dark patterns can be essentially as broad in scope as nudges. One example would be how travel booking websites might indicate that a given flight or hotel is being frequently booked. This is similar to how a social nudge works (Behavioural Insights Team, 2014), except that the information is given to drive additional bookings and revenue for the website. Dark patterns are covered in Sunstein's (2021) book,

as a related concept but which also ‘goes well beyond [his definition of] sludge’ p.43.

However, given that dark patterns can use many of the same techniques as nudges, they all appear relevant to Thaler’s definition.

Gambling is a decision involving risk which many people engage in, and which biases from the behavioural science literature may be relevant to (Tversky & Kahneman, 1974). Whether people gamble just for fun or a way to try and make money, they will be better off if they manage not to lose all of their gambling money too fast. Gambling businesses, contrastingly, benefit when gamblers lose. The Behavioural Insights Team (2021) has begun recently exploring the design of online gambling platforms. Deposit limit setting tools are a key feature of these platforms, and allow gamblers to set a pre-binding maximum deposit amount over some given time interval, such as a day or a month. This research found that deposit limit tools have dropdown boxes with high pre-suggested deposit limits of up to £100,000 a month. The anchoring literature from behavioural science would suggest that these high pre-suggested amounts may encourage gamblers to set high deposit limits (Tversky & Kahneman, 1974). The Behavioural Insights Team (2021) indeed found that replacing the dropdown box with a blank text entry box, without any pre-suggested amounts, led to a 40% reduction in gamblers’ average deposit limits. Interestingly, no gambling website that I am aware of has changed its deposit limit setting tool to a blank entry box since this finding has become public. This example involves a well-established behavioural bias, which helps an online gambling platform to make more money, but at vulnerable people’s expense, given the range of negative consequences associated with excessive gambling (Langham et al., 2016; Muggleton et al., 2021). This use of a behavioural bias was found by one of the organisations most responsible for applying nudge theory in the world. This example fits only within Thaler’s and not Sunstein’s definition of sludge. And yet, in my view the inclusion of

observations like this into the framework of nudge and sludge would attract more behavioural researchers to topics such as this, and also further cement the framework's importance.

Conclusion: What is sludge?

What is sludge, and what does the choice of definition mean for the field of behavioural public policy? This is a question which seems relevant to leading behavioural policy experts, who have emphasised the importance of ethical use of the field's knowledge (Lades & Delaney, 2022). Sunstein's definition focuses only on aspects of a decision environment which introduce frictions, but that can make people either worse- or better-off. This definition departs from nudges, which can use a number of techniques, and which are intended to make people better off (Thaler & Sunstein, 2008). The narrowness of this definition requires the usage of additional terms for other harmful aspects of decision environments which do not involve frictions, such as many dark patterns (Gray et al., 2018) or deposit limit setting tools in gambling (Behavioural Insights Team, 2021).

Sunstein in passing uses the term "harmful nudges" for this category. "Bad nudges" (Mrkva, Posner, Reeck, & Johnson, 2021) and "nudges for bad" (Soman, Cowen, Kannan, & Feng, 2019) are corresponding terms that I have also seen. "Dark nudges" is a term which I first applied in reference to other harmful aspects of gambling environments (Newall, 2019), and which has since then also been used in the video gaming and alcohol fields (Hadi Mogavi et al., 2022; Macey & Hamari, 2022; Pennay et al., 2020; Petticrew, Maani, Pettigrew, Rutter, & Van Schalkwyk, 2020; Xiao, Henderson, Yang, & Newall, 2021). However, sludge is clearly the more recognised term, which I now use myself in gambling research to refer both to instances of deliberately ineffective disclosures fitting within Sunstein's definition (Newall, Walasek, Ludvig, & Rockloff, 2022), and to broader features of online gambling

platform design (Newall & Rockloff, 2021), which are more similar to The Behavioural Insight Team's (2021) anchoring finding.

My view is that the most useful definition for sludge would be one that mirrors nudge, by encompassing many different techniques, and by influencing people in ways that make them worse off, as judged by themselves.

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