



Sludge: A Very Short Introduction

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An Introduction to Sludge

Several months ago, I fell into what is now well-known as a subscription trap (Rajamäki, 2018). I had given my credit card and contact information somewhere while purchasing a book, and apparently I had unwittingly signed on to receiving an annual subscription to a newspaper that I didn't really want to read. Something like this has probably happened to many of you; after all you and I are humans. We have limited attention, among many other human traits like being emotional, impulsive, cognitively lazy and using simple heuristics rather than all the necessary information (Thaler, 2018; Soman, 2015). Sellers often make it easy for people to buy things, or, as in my case, to accidentally slip in items into your shopping bag that you didn't intend to purchase. It is not a nice thing to do, but it does happen a lot.

The interesting part of my story relates to what happened afterwards, when I realized that I was receiving newspapers that I did not want. I decided to cancel my subscription. That is a short way to describe several website visits, unanswered emails, and phone calls where I repeatedly got transferred to other departments. Several days later, many would have given up, but I pressed on. I finally learnt that I needed to mail in a letter by surface mail and with a "wet signature" asking for my subscription to be cancelled. After a six-week processing period, I would receive a form that I would need to fax in, after which they would process a refund adjusting for unknown amounts of processing fees and adjustments for newspapers already received. I read their website carefully again, it told me that I could cancel anytime. In theory, I could cancel anytime. In practice, there were so many hurdles in the way that the intention to cancel might never really translate to actual cancellation. I call this sludge (See Sunstein, 2019; Soman et al., 2019; and Lamberton & Soman, 2020).

This also reminded me of a mail-in rebate promotion that I came across in 1994 when I was working on my PhD at the University of Chicago (*Northshore Appliances*, 1994). It offered patrons of an appliance store a promotion that seemed too good to be true. This is what you needed to do to get the 50% cash back.

Buy it, use it, then receive 50% of your cash back in 10 years. At the end of 10 years, you will receive a refund of 50% off your original purchase price. There is no catch. Simply send in the official registration form you will receive at the time of sale, a legible copy of the original receipt and proof of identification within 30 days.

The advertisement then detailed that they will mail you a refund claim form, which you need to hold on to and mail within 45 days of the 9th anniversary of the purchase of your appliance. They will then mail you the refund at the end of 10 years of your purchase, even if you did not own the appliance at that stage!

I am sure many of you will not hesitate to also call this sludge. Sludge can be defined as frictions in any process that impedes end users, and ultimately reduces welfare.

While my two stories illustrate the basic idea, the result of sludge can be far more devastating in some cases, for example recipients of welfare payments or healthcare services where the consequences are much higher. The goal of welfare or healthcare is to reach as many of the intended recipients as possible (Wong, 2015; Wong et al., 2020). Let me illustrate that with a metaphor.

A Metaphorical Illustration

Imagine that you run the water system for a metaphorical city, and your job is to get water to as many houses in this city as you can. Water flows from the processing plant through a grid of pipelines connecting houses. Some houses get no water because they are off the grid - they have no plumbing that runs to the house. The solution here is to simply complete the plumbing and get these houses on the grid.

But I also worry about other houses that are on the grid, but that still do not get water. The plumbing might look old and corroded like this, and the pipes might be full of sludge. Think of sludge as obstruction to water flows in a pipeline. This is a new form of the reach problem - a more insidious version where we have the illusion of supplying water but nothing really makes it through the choked and leaky pipeline.

Over a century ago, American psychologist and philosopher William James always said that human behaviour is a function of the organism and its environment or context (James, 1918). In rather a dramatic fashion, he likened human behaviour to taking a walk in a garden or a field that has psychological fences and gates. The presence of gates makes things easy for people. Many of you might have heard the term Nudge that behavioural economist Richard Thaler and legal scholar Cass Sunstein coined over a decade ago (Thaler & Sunstein, 2008). The concept of a gate is similar in principle to a nudge, it facilitates decisions and actions because people follow the path of least physical and psychological resistance. Changing defaults, simplifying information, or presenting options differently can influence the final choice people make simply by steering people towards certain outcomes and facilitating those choices.

Sludge could be the evil cousin of nudge. Sludge impedes our ability to get things done by creating psychological fences. Mind you, not all fences are bad. Sometimes we want to deliberately slow people down from making rash decisions (See for example the concept of a decision point; Soman, Xu, and Cheema, 2010). A divorce – both in marriages or in business partnerships - is an example of a process that could do with some sludge. If divorce were as easy as amazon's one-click-shopping button, our world would look different. Likewise, many of our contract negotiation processes call for a cooling off period so that both parties can proverbially sleep on their decisions and make sure they did not rashly make any

bad promises in the heat of the moment (See for example Atwell, 2015; and Rekaiti & Van den Bergh, 2000). And many of you who are on Twitter read recently about their new initiative asking people to confirm that they have read news articles that they were about to share – a good friction to combat fake news and start more meaningful conversations (Kelly, 2020).

This matrix, originally drawn from a paper with several of my collaborators (Dilip et al., 2019), captures the basis essence of my argument. In zone 1, Nudge, as Thaler and Sunstein viewed it, makes things easy to improve welfare of the end user. However, as we see in Zone 2, not all instances of making-things-easy improve welfare; for instance my newspaper subscription. These are also called dark-patterns in the web-design world (Brignull, 2018). Likewise, in zone 3, some friction can often be good. Sludge falls in zone 4 – it creates impedece and it reduces welfare.

The Nudge and Sludge Framework

	Facilitate Decision Making	Impede Decision Making
Helps Consumers	<i>Nudge</i> : making things easy for end users 1	<i>Decision Points</i> or <i>Cooling-off Periods</i> : that prompt vigilance and thoughtfulness 3
Harms Consumers	<i>Nudge-for-Bad</i> or <i>Dark Patterns</i> : making it easy to choose welfare – reducing options (subscription traps, default add-on purchases) 2	<i>Sludge</i> : making it difficult to cancel subscriptions, to return products, to change privacy settings, etc. 4

Getting welfare and healthcare to people that need it the most can definitely benefit from a one-click button. We require the poorest people to fill complex forms to access welfare. These are precisely people who have the smallest bandwidth to fill complex forms. We say we have a healthcare system in Canada that is free and inclusive, but we require our patients to take time out from a workday or to travel long distances to get the next appointment. The poorest are the ones less likely to have the bandwidth to afford the time or the money to get the “free” care they need.



Sludge and Inequity

The Canada Learning Bond offered low income Canadians a free \$2000 to educate their children. Yet, only 16% of eligible low-income Canadians claimed the money in the first few years (See Soman 2015, Chapter 1). Maybe there was an awareness problem? But it turned out, that was a smaller part of the problem. The words “free money” were splattered all over the promotional material for the program. But it wasn’t really free. To get the money, recipients needed a RESP account – a specific type of a registered investment account - to get that needed a visit to a government service centre. That needed a birth certificate – which was another process in itself – but also time and patience, a resource that was scarcest for the people who needed the money the most. Others were recent immigrants who did not comprehend either of the two Canadian national languages. Yet other immigrants came from proud cultures that felt embarrassed opening a welfare account at a fancy bank where people dressed in suits and ties would possibly look down upon them. Even through all the potential recipients had been technically reached, sludge had created a new form of impedence.

Now I often hear people say that a welfare program that had a low take-up rate was probably not needed. Another important byline from this example is this – the take-up of any welfare program is NOT a good indicator of its needs because it is mediated by sludge. As one of our BI-Org (www.biorgpartnership.com) researcher Jennifer Robson said in a personal communication, “implementation matters **at least** as much as clever ideas.”

There are three sources of sludge – clunky processes, poor communications and processes that create negative emotions like embarrassment and shame.

The Canada Learning Bond is just one example, and there are many others to be found all around us. An innovative operations researcher at a hypothetical fast food restaurant created an ingenious algorithm that could assign front line workers to tasks and shifts the night before, in other words just-in-time. This saved a lot of money for the restaurant chain. This also created sludge for single parents who could not find or afford last minute childcare, and hence got excluded from jobs. A housing subsidy program found that potential aid recipients lied and said their homes were in better shape than they actually were, thereby foregoing subsidy dollars. Why did they do that? Because the design of the form highlighted the poor state of their homes, creating embarrassment. With the merger of two bureaus in a government a few years ago, people needed a form to get a form they needed to fill out to report employment status. I could go on and on, but I trust you get the point.

Sludge is insidious because it is difficult to see. Mind you, not all sludge is deliberate. It just builds up in our process pipelines unless we monitor and maintain them. It is a bit like weeds – no one intentionally

plants them, but if we ignore them over time, they will eventually take over the garden. Furthermore, one person's sludge might not even seem like a significant inconvenience to another. As practitioners, it is difficult for us to empathize with the context, as well as the cognitive and emotional baggage that our end users bring to any interaction with us. Therefore, we must apply systematic approaches and scorecards to detect and measure sludge. A recent BEAR report provides some examples on how this can be done (Soman et al., 2019).

Sludge is a psychological problem, not a logistical one. Without a deliberate attempt to identify, clean and prevent sludge in our systems, I worry that we might create an illusion of reach without actually reaching everyone we think we are reaching.

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