

## NUDGING TO DEMOCRATIZE OUTCOMES

Since the first edition of *Inside Nudging*, I've had the opportunity to work on some interesting projects and research which aligns with my personal goals to do more good for the world. I wanted to share a few of those experiences with you in hope that it might give you some ideas about how to nudge for good and democratize outcomes.

### **Individual Behavioral Differences**

In Chapter 1, I intimated that a significant proportion of the implementations of choice architecture in the real world uses a mass, one-size-fits-all approach. That is, such approaches try to maximize outcomes through implementing a single, “best” environment for the entire target audience. There's little to no variation in the choice environment based on particular needs of the individual. While such an approach may have strengths in terms of simplicity, it may fall short in terms of addressing certain people based on their individual behavioral differences.

What are individual behavioral differences? While many companies use demographic differences to analyze and target populations, such as by gender, age, household income, and educational level, individual behavioral differences relate to

various psychological, judgment, and belief-driven differences in how people make decisions.

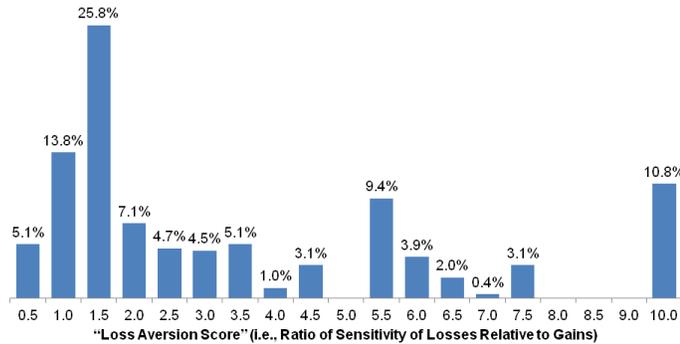
As an example of individual behavioral differences, consider the following chart (Figure 7.1), which is based on a survey I worked on with Kendra Seaman, Mikella Green, and Gregory Samanez-Larkin and covers 508 healthy people between the ages of 20 and 81 (Seaman, Green, et al. 2018). The chart illustrates the distribution of survey participants' loss aversion scores<sup>31</sup>, which are essentially their sensitivity to losses relative to gains. In this sample, the median loss aversion score was about 1.75 (i.e., such people experience losses 1.75 times as intensely as gains). Yet on the right hand side of the chart, 10.8% of people had loss aversion scores greater than 9.0 and less than or equal to 10.0. That is pretty extreme sensitivity to losses. At the other end of the spectrum on the left hand side of the chart, 18.9% of people (i.e., 13.8% plus 5.1%) were either 1) just as sensitive to losses as gains or 2) somewhat gain seeking. People may make very different decisions according to their loss aversion sensitivities, and these differences extend to many other behavioral areas beyond those covered here.

Why do individual differences matter? Whereas demographic information may factually represent *what* you are, individual behavioral differences speak more to *who* you are and how you perceive the world and behave. Think about the case of loss aversion for a moment. If someone is extremely loss averse, how should they think about financial decisions? Should they invest significant amounts of money in risky stocks if they need that money? Should they take on adjustable rate mortgages? How should they look at insurance? While the answers are not necessarily clear cut, by looking at people through the lenses of individual behavioral differences, we can better understand how choice environments might differentially affect people or be tailored to help meet their needs.

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<sup>31</sup> You can measure your own loss aversion score for free by visiting the Digitai website: <http://www.digitai.org/#lab>

## Example of Individual Behavioral Differences: Percent of People and Their Loss Aversion



Source: Based on data from Seaman, Kendra and Green, Mikella and Shu, Stephen and Samanez-Larkin, Gregory. (2016). Individual Differences in Loss Aversion and Preferences for Skewed Risks Across Adulthood. *Psychology and Aging*, 33(4), 854.  
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Figure 7.1: Example Distribution of Loss Aversion Scores, an Individual Behavioral Difference

Let's examine another individual behavioral difference, specifically around subjective numeracy. Consider the following questions, where answers to each question are supposed to be an integer between 1 and 6 (McNaughton, Cavanaugh, et al. 2015):

- 1) How good are you at working with fractions? (1 = not good at all and 6 = extremely good)
- 2) How good are you at figuring out how much a shirt will cost if it is 25% off? (1 = not good at all and 6 = extremely good)
- 3) How often do you find numerical information to be useful? (1 = never and 6 = very often).

The answers to these questions (called "items"), when summed together, result in a number between 3 and 18 called a scale.<sup>32</sup> In this case, the sum of the three numbers results in a

<sup>32</sup> In the interest of brevity, I do not define how scales are

measure of subjective numeracy, which represents a combination of 1) a person's self-reported skills relative to handling numbers and math related to percentages, etc. and 2) their information preferences. For example, a person who has a subjective numeracy score of 3 could be considered much less numerate than a person with a score of 18. People with a score of 3 might be intimidated by using percentages either because they do not feel they have the skill to compute the answers or because they fail to find numerical information useful. Now suppose these same people are asked whether they wish to save 3% of their salary. Might they have difficulty? Might they be discriminated against because they are less numerate? Evidence suggests that they might be.

In 2018 I started to run a series of lab studies<sup>33</sup> which framed retirement savings decisions in terms of “pennies per dollar of salary” instead of “percent of salary”.<sup>34</sup> I analyzed the psychology going on in people's minds and their choices. Furthermore, I used both a mixture of subjective numeracy and financial literacy scales to assess the differential impacts of the information architecture on people's judgments and decisions. To make a long story short, the study results indicate that pennies reframing could result in the average person making choices which would lead to on the order of 20% more savings in retirement (in comparison to the current practice of using percent of salary framing). But more importantly, pennies reframing could result in 60% more savings for lower income people (say earning \$25,000 per year) who are the least financially literate. While it has yet to be seen to what extent these results will extend from the lab to the real world (I am in the process of seeking a field host at the time of this writing),

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constructed and tested. Suffice it to say, scales should be valid (i.e., actually measure what we intend to measure) and reliable (i.e., measure things consistently).

<sup>33</sup> Shu, Stephen. “Pennies Reframing and Savings.” Working paper, 2019.

<sup>34</sup> The origins of the “pennies” concept comes from a very seasoned financial advisor and friend of mine, George Fraser. George owns a Pennies on the Dollar trademark as part of GKCPV Investments.

even if they do so only to a small extent, it will be an important step toward democratizing retirement savings outcomes.

### **The Digital World**

The digital world offers a number of opportunities to democratize outcomes. Companies that have put modern technology infrastructure and operational processes in place can better capitalize on agility and scale than those companies that have not. Most importantly, agile companies can in theory deploy value more quickly as supported by A/B testing platform capabilities (such as mentioned in Chapter 6).

At the same time, the digital world brings great responsibility. On the one hand, we have evidence that people behave differently using digital devices, in domains such as comprehension, visual biases (e.g., edge aversion), and a number of other areas (Benartzi and Lehrer 2017). On the other hand, technology has become increasingly complicated with large teams required to develop, test, and maintain technology infrastructure. Have these companies put the right processes in place to address behavioral science considerations, including new findings in the digital age? And if they have put processes in place, are they of the right scale? My anecdotal experience indicates that these two conditions may not be satisfied in many companies. For example, I often see critical aspects of choice architecture inadvertently left to technology developers who may neither have behavioral science nor design on their list of concerns for a variety of reasons.

The digital world brings scale in terms of reaching end users, and if we are smart, we can use this scale to improve outcomes and reduce discrimination. Hal Hershfield, Shlomo Benartzi, and I ran a study with the FinTech company Acorns, a business which made its name early on through the concept of investing “spare change” (Hershfield, Shu & Benartzi 2019). For example, suppose a user of the Acorns app bought a cup of coffee for \$4.25. The app would allow the user to round up the purchase to \$5.00 with \$0.75 being moved into an account that allowed micro-amounts to be invested in portfolios with various risk/return profiles.

In the study we ran, our goal was to go beyond purchase-associated savings and instead increase the percentage of savers

saving regularly through participation in a recurring deposit program. For a subset of new users to the app, we presented them with an opportunity to join this recurring savings program with 1) some of the people being offered the option to save \$150 per month, 2) some of the people being offered the option to save \$35 per week, and 3) some of the people being offered the option to save \$5 per day. So people in each of these three groups were offered choices that were roughly equivalent in terms of economic consequences, but the choices were presented in a different way for each group.

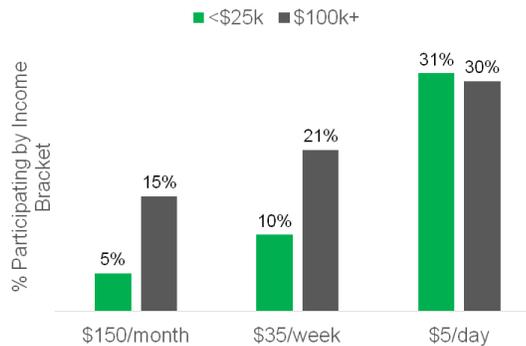
How did people behave, and what were their choices? Whereas 7.1% of people joined the recurring deposit program when it was framed as \$150 per month, 10.3% of people joined when it was framed as \$35 per week. And a whopping 29.9% of people joined when it was framed as \$5 per day. Whether more people joined because they experienced less psychological pain, thought of opportunity costs differently through the framing, or some other reason, the end result was that four times as many users joined the program when it was framed as \$5 per day instead of \$150 per month.

When examining the results of the study more closely, we also find interesting results relative to the impact on different income levels. While on average 7.1% of people had signed up for the recurring deposit program when it was framed as \$150 per month, that average sign-up rate actually reflects 15% of people signing up who earn more than \$100,000 per year and only 5% of people signing up who earn less than \$25,000 per year (See the left side of Figure 7.2). In other words, there is a sign-up impact of three times the amount for higher versus lower income levels. However, when the recurring deposit program was framed as \$5 per day, discrimination between the income brackets was eliminated with about 30% of people signing up whether they were earning less than \$25,000 per year or over \$100,000 per year (see how the gap between the bars is eliminated on the right side of Figure 7.2).

The possibilities to help people through addressing individual behavioral differences and leveraging the digital world are vast. Whether it is trying to help workers in the Gig Economy (who may work in more precarious environments without safety nets), helping older generations work through

complex problems associated with living in retirement, preventing the elderly from being preyed upon, or assisting people in making complex choices relative to healthcare and wellness, we can try to do more. It will take a mixture of setting the right goals, performing valuable research, getting the right mix of innovation, and performing testing. Goals. Research. Innovation. Testing. We can think of Behavioral GRIT™ to democratize outcomes.

### Information Reframing Can Reduce Discrimination Between Income Brackets



Source: Based on Hershey, Hal and Shu, Stephen and Benartzi, Shlomo. Temporal Reframing and Participation in a Savings Program: A Field Experiment (February 2, 2019). Available at SSRN: <https://ssrn.com/abstract=3097468>

Figure 7.2: Example of Democratizing Outcomes Through Nudging and Reducing Income Discrimination

#### Key Takeaways

Throughout this book, I've tried to address democratizing nudging in terms of how companies might try to implement behavioral science initiatives and how they might implement nudge units. However, in this chapter I've tried to explore a slightly different problem, which is about democratizing outcomes for end users. Here are some thoughts on how to think about this problem:

- **Try to define what it means to democratize outcomes** – This process might be messy and a tad philosophical, but it's important to think about goals (i.e., the “G” in GRIT) with an eye toward

defining what it means to democratize outcomes. In some of the examples I've presented in this chapter, democratization is context-specific and includes things like helping those with lower numeracy, lower financial literacy, less income, and more occupational risk.

- **Consider individual behavioral differences in addition to traditional demographics** – Again, who we are can be just as important as what we are. Individual behavioral differences can include numerous things like loss aversion, myopia, positivity bias, self continuity, narrow framing, impatience, propensity to plan, risk aversion, ambiguity aversion, numeracy, financial literacy, need for control, etc. Prioritize potential scales or measures, perhaps in light of your definition of what it means to democratize outcomes. Consider subsampling some pertinent individual behavioral differences for subjects as part of your company's A/B tests. Analyze to what extent these factors influence people's decisions. Then consider whether there are possibilities to design choice environments to help people according to individual behavioral differences or to at least guard against undesirable discrimination.
- **Encourage behavioral science practices within your digital project teams** – There are many possibilities for achieving this. For example, you could establish a consulting office that works in conjunction with the digital teams. You could try to hire experts and try to locate them more closely within the product team. You could hire outsiders, such as consultants or academics who are well-versed in behavioral science and its applications. Other options include sending key employees to behavioral science training at a business school (e.g., executive or continuing education) or contracting for an in-house training workshop.