

Financial Surrogate Decision Making: Lessons from Applied Experimental Philosophy

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Abstract. An estimated 1 in 4 elderly Americans need a surrogate to make decisions at least once in their lives. With an aging population, that number is almost certainly going to increase. This paper focuses on *financial* surrogate decision making. To illustrate some of the empirical and moral implications associated with financial surrogate decision making, two experiments suggest that default choice settings can predictably influence some surrogate financial decision making. Experiment 1 suggested that when making hypothetical financial decisions, surrogates tended to stay with default settings (OR = 4.37, 95% CI 1.52, 12.48). Experiment 2 replicated and extended this finding suggesting that in a different context (OR = 2.27, 95% CI 1.1, 4.65). Experiment 2 also suggested that those who were more numerate were less likely to be influenced by default settings than the less numerate, but only when the decision is whether to “opt in” ($p = .05$). These data highlight the importance of a recent debate about “nudging.” Defaults are common methods to nudge people to make desirable choices while allowing the liberty to choose otherwise. Some of the ethics of using default settings to nudge surrogate decision makers are discussed.

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Making decisions for a person who is not able to is a pressing problem. About 5.4 million Americans have Alzheimer’s disease. Around 40% of those individuals are in advanced stages of Alzheimer’s. Those with advanced Alzheimer’s are almost certainly not competent to make many decisions for themselves. Indeed, many of those with even mild-Alzheimer’s are unable to balance a checkbook accurately or understand a bank statement. Studies suggest that all people with moderate to severe Alzheimer’s lacked some even more basic financial skills (e.g., basic numerical skills) (Marson et al., 2000). Alzheimer’s patients 65 or older typically live 4–8 years after being diagnosed resulting in the need for prolonged surrogate decision making (Alzheimer’s Association, 2013). In general, nearly 1 in 4 elderly adults will require a surrogate decision maker at some point in their lives (Silveira, Kim, & Langa, 2010). As demographics shift in the oncoming years, those needing surrogate decision makers will only grow (Sooryanarayana, Choo, & Hairi, 2013). Consequently, developing ethically responsible policies, strategies, and recommendations for surrogate decision makers will become even more important.

While there are many important domains for surrogate decision making, this paper focuses on non-professional financial surrogate decision making. In particular,

“nudges” for non-professional financial surrogate decisions are explored. Nudges have recently become popular policy for financial and other decision making (Johnson et al., 2012; Thaler & Sunstein, 2003, 2008). One prominent nudge involves intentionally setting defaults. A large body of research suggests that in many instances, people tend to make default congruent choices (Johnson & Goldstein, 2003). Research on nudges has focused on decisions for one’s self (e.g., whether I should become an organ donor). Emerging evidence suggests defaults can also influence decisions that one makes for *others* (e.g., whether I should decide that *somebody else* should become an organ donor) (Feltz & Samayoa, 2012).

These insights are extended to surrogate financial decision making in two experiments. In both experiments, hypothetical surrogate financial decision makers tended to remain with default settings. However, in instances with a defensible normatively correct answer, those who were more numerate were less influenced by default settings and were more likely to choose the more normatively correct option. These results suggest that defaults and numeracy are important factors in some surrogate financial decisions. Additionally, in some instances defaults can help those who need it the most (the less numerate) while leaving those who do not need the engineered environment (the more numerate) relatively unaffected. Ethical implications for financial techniques, policies, or strategies used to encourage people to make some surrogate financial decisions are discussed.

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Surrogate decision making

Buchanan and Brock (1989) outline four prominent areas of surrogate decision making: medical decisions, decisions to participate in research, decisions about living arrangements, and financial decisions. There are three general guidelines for surrogate decision makers to follow. These guidelines are ranked in order of priority. First, if an advanced directive (e.g., do-not-resuscitate order or living will) exists, those directives should be followed. Second, when there is no advance directive or if the advance directive does not address the decision to be made, surrogates are to use the substituted judgment standard. The substituted judgment standard instructs surrogates to make the decision that the patient would have made if able. Third, when neither the advance directive nor substituted judgment standard can be used, surrogates are instructed to use the best interest standard. The best interest standard states that surrogates should make the decision that is in the best (professional, medical, financial) interest of the patient.

A growing body of empirical work has begun to explore how surrogates actually go about making decisions (Ditto et al., 2001; Fagerlin, Ditto, Hawkins, Schneider, & Smucker, 2002; Feltz & Abt, 2012; Marks & Arkes, 2008; Sulmasy et al., 1998; Teno, Nelson, & Lynn, 1994; Uhlmann, Pearlman, & Cain, 1988). A substantial body of work also suggests that *heuristics* are involved in many decisions (Gigerenzer, Todd, & ABC Research Group, 1999; Kahneman, Slovic, & Tversky, 1982). Heuristics can be defined as “a strategy that ignores part of the information, with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods” (Gigerenzer & Gaissmaier, 2011, p. 454). One powerful heuristic is the *default heuristic* (Gigerenzer, 2008; Todd & Gigerenzer, 2007). The default heuristic refers to the tendency to remain with default options even if choosing a different option is trivially easy (Johnson & Goldstein, 2003). For example, in America, people typically have to take some trivial action (e.g., check a box on a driver’s license application) to become an organ donor. In many European countries, people are defaulted into being organ donors and have to take some trivial step *not to be* an organ donor. This small change in default settings has a drastic effect on organ donation rates. Around 90% of people in those Western European countries are donors whereas only around 28% of Americans are.

Primarily, defaults have been used to influence decisions for one’s self. However, defaults are also likely to influence decisions made for others. For example, Feltz and Samayoa (2012) gave participants a hypothetical situation describing a man who had a heart attack and while in the hospital had another heart attack

rendering him unconscious. Participants were asked to imagine that they were a family member and were responsible for making decisions for the unconscious relative. Participants were asked to decide among ten options for the patient including CPR, being put on a breathing machine if necessary, and inserting a feeding tube if necessary. One group of participants was told that all ten items are standard and the patient would receive all of them unless the surrogate indicates that she does not want that particular item. A separate group of participants was told that the patient would receive none of the options unless the surrogate checks a box next to the item. Just as in the organ donation case, this small change in default settings had an impact on whether some treatments were authorized. In the most pronounced case, 80% of those where the default was set to treat authorized the breathing machine. However, only 42% of those where the default was not to treat authorized the breathing machine.

Finances are a common concern in many people’s end-of-life planning. Not being a financial burden on one’s family or society and putting one’s financial affairs in order are two of the primary overall concerns for end-of-life planning (Steinhauser et al., 2001). This concern about end-of-life financial planning is appropriate. The costs associated with caring for an individual who has been found to be incompetent can be extraordinary in the United States. According to one study, the mean out-of-pocket expenses in the last five years of life in the United States is \$38,688 (Kelly, Rid, & Wendler, 2012). According to this study, 25% of people spent more for end of life care than they had in overall assets and 43% spent more than they had in non-household assets. Among the more expensive diseases is dementia (compared to a disease like cancer)—exactly the kind of disease that often requires surrogate decision-making for prolonged periods of time.

Non-financial experts are often critically involved in financial surrogate decisions. About twenty-five percent of adults in the United States will at some time provide care to a family member. This care includes making financial decisions for that family member (Bond, Cuddy, Dixon, Duncan, & Smith, 2000; Rabow, Hauser, & Adams, 2004; Tilse, Setterlund, Wilson, & Rosenman, 2005). The number of non-financial expert surrogate decision makers is likely to increase not only as populations age but also as outpatient and life-sustaining procedures increase (Siegel, Raveis, Houts, & Mor, 1991). In some instances of financial surrogate decision making, there is institutional oversight. For example, financial surrogates are sometimes supervised if they are appointed by a court. Still, there are far fewer institutional safeguards for financial compared to medical surrogate decisions and many non-experts

make financial surrogate decisions. This has led some experts to comment “We can’t protect someone who picks the wrong agent” (Roddy, 2007).

Financial surrogate decision making has risks that are not normally found in some other (e.g., medical) surrogate decision making. First, there is a greater risk of conflict of interests for surrogate financial decision making compared to surrogate medical decision making (Buchanan & Brock, 1989). Second, compared to medical decisions, there is a relative lack of institutional safeguards in place for lay people’s surrogate financial decisions. Indeed, there are often very few procedural checks or oversight on lay financial surrogate decisions. Moreover, gathering evidence suggests that surrogate financial decision makers often do not decide what the patient would have decided for themselves. For example, similar to some medical surrogate decisions (Fagerlin, Ditto, Danks, & Houts, 2001), sometimes surrogates project their own financial risk preferences onto others (Stone, Yates, & Caruthers, 2002). In some other instances, surrogates make less risky decisions than decisions the patient would make for themselves (Colby, 2010; Roszkowski & Snelbecker, 1990).¹ Perhaps this self-other asymmetry in risk preference is an attempt of some surrogates to deflect negative evaluations if the decision turns out badly (Colby, 2010), an explanation that has been offered for similar biases in surrogate financial decision making (e.g., the overtreatment bias Ditto et al., 2001; Fagerlin et al., 2001; Marks & Arkes, 2008; Sulmasy et al., 1998; Uhlmann et al., 1988).

To illustrate, the elderly in America often have substantial assets that need to be managed (Tilse et al., 2005). Since many elderly Americans have substantial assets, are incompetent to make some financial decisions, and there exist relatively few institutional safeguards, there is the increased risk of financial elder abuse. Financial abuse is commonly held to be one of the most common forms of elderly abuse (Arksey, Corden, Glendinning, & Hirst, 2008; Bond et al., 2000; McCawley, Tilse, Wilson, Setterlund, & Rosenman, 2005; Sooryanarayana et al., 2013; Tilse et al., 2005; Tilse, Wilson, Rosenman, Morrison, & Mccawley, 2011; Wilber & Reynolds, 1997). Financial elder abuse can be characterized as “the taking or misappropriation of an older person’s property, possessions, or financial assets” (Wilber & Reynolds, 1997, p. 64). The majority of elder abuse comes from family members (Tilse et al., 2005). It is still unclear how many of the behaviors are actually abuse or how many of these behaviors are intentionally or knowingly performed (Arksey et al., 2008; Langan & Means, 1996). Nonetheless, purported cases

¹Stone et al. (2002), however, failed to find this asymmetry in risk preferences.

of abuse in conjunction with some documented judgment biases suggest that surrogate lay people’s financial decision making can be improved.

Are there strategies or policies that we could use to help ensure financial surrogate decision makers arrive at more socially desirable, acceptable, or normatively correct decisions? Some have argued that education of both professionals and laypersons is the most important intervention for financial surrogate decision making success (Boldy, Horner, Crouchley, Davey, & Boylen, 2005). But many education programs are resource intensive (time, money, effort) and may have limited effectiveness (Feltz, 2015; Trout, 2005). Are there more efficient ways to go about eliminating some of these cognitive biases and tendencies toward abuse? To start this investigation, one powerful yet efficient influence on decision making is explored—default settings. Given the pervasive impact of defaults, financial surrogate decision makers are likely to make default congruent financial decisions. This hypothesis was tested in two experiments.

Experiment 1

Participants

Participants were recruited from Amazon’s Mechanical Turk ($N = 126$).² Participants were excluded for not completing the survey ($N = 13$), for requesting that their answers not be used ($N = 3$), and for failing the comprehension question ($N = 1$). Forty participants (37%) were male. Ages ranged from 18–68, $M = 32.54$, $SD = 11.58$.

Materials

Participants read a hypothetical scenario about a young man who, as a result of an accident, is incompetent to make financial decisions. Participants were asked to imagine they were responsible for making financial decisions for the man. Defaults for the decision were systematically altered. One group of participants ($N = 64$) was randomly assigned to the *one-time* condition and the other group ($N = 45$) was randomly assigned to the *annual* condition.³ All participants received the following stem:

²Amazon’s Mechanical Turk is a web panel that recruits paid participants in exchange for a small fee, see <https://www.mturk.com/mturk/welcome>. For properties of samples taken from Amazon’s Mechanical Turk, see Buhrmester, Kwang, and Gosling (2011); Crump, McDonnell, and Gureckis (2013); Mason and Suri (2012).

³Because of limitations of the online testing platform, randomization was achieved by having a random number generator produce randomly a 1 or 2 and display the number to participants. Then, participants had to enter the number generated to be assigned to one of the two conditions. This may partially explain the uneven group sizes. If some people ignored the instructions and simply entered 1, that would put them in the one-time group.

Jeff is a 23-year-old coal miner. One day there was an explosion in the mine where Jeff worked. Jeff's life was saved, but the explosion resulted in injuries with lasting effects. Jeff now has trouble concentrating, is often agitated, has trouble doing basic arithmetic, and sometimes makes irrational decisions. It is obvious that Jeff is not capable of managing many of his own affairs, including his finances. Jeff is expected to live as long as his average peer, but his symptoms are not expected to go away and the doctors are almost certain he will never be able to manage his financial affairs again.

After reading the stem, those in the one-time condition read the following paragraph:

Imagine that you have been designated to manage Jeff's financial affairs. Right now as part of the settlement package, Jeff is going to receive a one-time payment of \$500,000. But, you have the option to take \$50,000 annually for 20 years.

Participants were then asked: "Which option do you prefer?" and had to check either "I decide to stay with the lump sum payment" or "I decide to switch to the annual payment." Those in the annual condition received the following second paragraph:

Imagine that you have been designated to manage Jeff's financial affairs. Right now as part of the settlement package, Jeff is going to receive \$50,000 annually for 20 years. But, you have the option to take a one-time payment of \$500,000.

Participants in the annual condition had to then check "I decide to stay with the annual payment" or "I decide to switch to the lump sum payment." After responding to one of these two scenarios, participants completed the Berlin Numeracy Test (BNT) (Cokely, Galesic, Schulz, Ghazal, & Garcia-Retamero, 2012). The BNT measures numeracy. Numeracy refers to the general ability to understand and use probabilistic information. Numeracy has been linked to a number of more normatively correct choices (Banks, O'Dea, & Oldfield, 2010; Cokely & Kelley, 2009; Lipkus & Peters, 2007; Peters & Levin, 2008; Peters et al., 2006; Reyna, Nelson, Han, & Dieckmann, 2009). Numeracy is also associated with, but distinct from, general intelligence (Peters et al., 2006). After completing the BNT, participants completed the Ten Item Personality Inventory (TIPI) (Gosling, Rentfrow, & Swann, 2003). The TIPI is a short measure of the Big Five Personality traits. Finally, basic demographic information was collected.

Results

As predicted, default settings influenced surrogates' financial decisions. When the default was set for the annual payment, 91% ($N = 58$) decided to remain with the annual payment. However, when the default was set for the lump sum, 69% ($N = 31$) decided to switch to

the annual payment, $\chi^2(1) = 8.33$, $p = .004$, $OR = 4.37$, 95% CI 1.52, 12.48.

A logistic regression was conducted to determine the effect of default settings on financial choices. The model used default settings, numeracy, and each of the Big Five personality traits as independent variables and financial choice as dependent variable (see Table 1 for the correlation matrix).

The full model was a significant predictor of choices: $\chi^2(7) = 14.48$, $p = .04$, Cox and Snell $R^2 = .12$, Nagelkerke $R^2 = .2$. Even when entering these other variables, the default setting still uniquely predicted choices (see table 2). None of the individual differences reliably predicted unique variance.

Experiment 2

Experiment 1 showed that default settings influence some hypothetical financial surrogate decisions. Defaults can be presented in a number of different ways. Experiment 1 told participants what the default was and then forced a choice to stay with the default or change. Experiment 2 altered the presentation of defaults where a list of options was presented. In this design, participants did not need to take any action—inaction was interpreted as endorsing the default option. However, participants could opt out of any option by checking a box. It was predicted that defaults would continue to influence surrogate financial decisions in the new experimental design.

Participants

Participants were recruited from Amazon's Mechanical Turk ($N = 237$). Thirty-nine Participants were excluded for not completing the survey ($N = 39$), for requesting that their answers not be used ($N = 7$), and for failing to answer the comprehension question correctly ($N = 4$). Forty-four percent ($N = 82$) were male. The mean age was 32.74, $SD = 12.56$ ranging from 18–72.

Materials

All participants received the first paragraph from Experiment 1. After reading this paragraph, participants were randomly assigned to only one of two groups. One group was assigned to the *Opt Out condition* and read the following additional information:

Jeff receives \$4,000 a month as part of settlement package, and he will receive these payments until he reaches retirement age. Jeff's average monthly expenses are \$3,000. Imagine that you have been designated to manage Jeff's financial affairs. The law office of the coal mine has given you a list of 6 financial decisions about Jeff. Right now, Jeff will receive all of these options. However, you can opt out of any of the items 1–6 below.

Table 1. Spearman's correlations for Experiment 1

	1	2	3	4	5	6	7	8
1.Default	1							
2.Decision	.28**	1						
3.Numeracy	.06	-.02	1					
4.Extraversion	-.01	.17	-.13	1				
5. Agreeableness	.13	.02	.17	0	1			
6.Conscientiousness	-.05	.05	.05	.09	.25**	1		
7.Emotional Stability	-.02	.11	.14	.12	.26**	.34**	1	
8. Openness to Experience	.06	-.06	-.08	.2*	.15	.15	.02	1

Note: * < .05, ** < .01, Default annual payment was coded as 0 and default one-time payment was coded as 1. For Decision, choosing the annual payment was coded as 0 and taking the one-time payment was coded as 1.

Table 2. Logistic regression for Experiment 1

	β	SE of β	Wald's χ^2	df	p	Odds ratio
Default	1.68	0.58	8.54	1	.003	5.38
Numeracy	-0.03	0.18	0.04	1	.85	0.97
Extraversion	0.17	0.1	3.24	1	.08	1.18
Agreeableness	-0.04	0.13	0.1	1	.75	0.96
Conscientiousness	0.08	0.13	0.34	1	.56	1.08
Emotional Stability	0.1	0.11	0.78	1	.38	1.1
Openness of Experience	-0.17	0.13	1.74	1	.19	0.84
Constant	-4.8	2.183	4.84	1	.03	0.01

Note: Default annual payment was coded as 0 and default one-time payment was coded as 1. The predicted decision was the financial choice. Choosing the annual payment was coded as 0 and taking the one-time payment was coded as 1.

The other group was assigned to the *Opt In condition* and read the following additional paragraph:

Imagine that you have been designated to manage Jeff's financial affairs. The law office of the coal mine has given you a list of 6 financial decisions about Jeff. Right now, Jeff will receive none of these options. However, you can opt into any of the items 1–6 below.

Both groups were given the following 6 items. Those in the Opt In condition were told to select all of the options they would like to opt into. Those in the Opt Out condition were told to indicate all the items they wished to opt out of (presented in random order):

1. \$240 per month invested into an index-fund retirement account.
2. Emails concerning news from the coal mine.
3. Identity theft protection for \$60 a year.
4. Direct deposit of funds into a checking or savings account.
5. Free financial advice from the coal mine financial office.
6. Yearly reports indicating cost-of-living adjustments.

The target option was 1 and 2–6 were partially designed to hide the goal of the experiment from

participants. All participants answered the same comprehension question used in Experiment 1. Participants then completed the BNT and the TIPI. Finally, basic demographic information was gathered.

Results

Planned analyses compared the proportion of those who wanted 1–6 (see Table 3).

As predicted, default settings influenced surrogate decisions for nearly all options. A binary logistic regression was conducted to determine the default setting's strength on choices to contribute to the retirement account (Item 1) after controlling for personality and numeracy (for correlations, see Table 4).

The full model was a significant predictor of the choice to invest in an index fund retirement account: $\chi^2(7) = 23.02, p = .002$, Cox and Snell $R^2 = .11$, Nagelkerke $R^2 = .17$. After controlling for personality and numeracy, default settings still predicted unique variance. Numeracy also predicted some unique variance with respect to contributing to an index fund retirement account. No other individual difference was reliably associated with contributing to the retirement account (see Table 5).

Table 3. Default effects in Experiment 2

Question	Optin In (N = 96)	Opt out (N = 91)	χ^2	df	p	ϕ
Money	71% (N = 68)	85% (N = 77)	5.1	1	.02	0.17
Email	22% (N = 21)	37% (N = 34)	5.4	1	.02	0.17
Advice	50% (N = 48)	68% (N = 62)	6.34	1	.01	0.18
Deposit	83% (N = 79)	89% (N = 81)	1.71	1	.19	0.1
Cost of Living	60% (N = 58)	81% (N = 74)	9.83	1	.002	0.23
Identity	30% (N = 28)	57% (N = 52)	14.94	1	< .001	0.28

Note: Percentages indicate how many participants selected to have that option.

Table 4. Spearman's correlations in Experiment 2

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Default	1												
2.Money	.17*	1											
3.Email	.16*	.02	1										
4.Advice	.19**	.24**	.18*	1									
5.Deposit	.1	.18*	-.04	.06	1								
6.Cost of Living	.24**	.26**	.24	.28**	.17*	1							
7.Identity	.29**	.12	.09	.13	0	.22**	1						
8.Extraversion	.04	.05	-.07	.03	.01	-.08	-.11	1					
9.Agreeableness	-.07	.21*	.13	.12	.07	.04	.1	.14*	1				
10.Conscientiousness	.03	.08	-.04	0	.03	-.06	-.08	.23*	.29**	1			
11.Emotional Stability	.11	.05	.11	.09	.03	.1	-.03	.08	.31**	.35**	1		
12.Openness of Experience	-.01	.18*	0	.04	.04	0	.02	.32**	.29**	.06	.12	1	
13.Numeracy	.07	.16*	.12	-.01	.16*	.11	.11	-.23**	.01	-.15*	.08	-.01	1

Note: *p < .05, **p < .01. For default, the opt out condition was coded as 1 and the opt in condition was coded as 0. Choosing an option for money, email, advice, deposit, cost of living, and identity was coded as 1 and not choosing an option was coded as 0.

Table 5. Logistic regression for Experiment 2

	β	SE of β	Wald's χ^2	df	p	Odds ratio
Default	0.78	0.39	4.1	1	.04	2.2
Numeracy	0.28	0.12	6	1	.02	1.33
Extraversion	0.03	0.08	0.2	1	.66	1.03
Agreeableness	0.16	0.09	3.33	1	.07	1.18
Conscientiousness	0.06	0.09	0.44	1	.51	1.06
Emotional Stability	-0.08	0.07	1.16	1	.28	0.93
Openness to Experience	0.15	0.09	2.93	1	.09	1.16
Constant	-3.2	1.32	5.87	1	.02	0.04

Note: For default, the opt out condition was coded as 1 and opt in condition was coded as 0. The predicted decision was whether to contribute to the retirement account. Choosing to contribute was coded as 1 and not choosing to contribute was coded as 0.

To illustrate differences associated with numeracy, approximate numeracy quartiles were created for high numeracy (numeracy score > 4, N = 39) and low numeracy (numeracy score < 2, N = 40). Overall, those who were high in numeracy were more likely to contribute to the account (85%) than those low in numeracy (65%), $\chi^2(1) = 4.02, p = .05, \phi = .23$. Subsequent

analyses indicated that while highly numerate individuals contributed to the retirement account at a stable level (~ 85%), those who were low numerate fluctuated contributing to the retirement account as a function of the opt in (59%) and the Opt Out condition (73%) (see Table 6). The difference between high and low numeracy was significant in the Opt In $\chi^2(1) = 3.76, p = .05$,

Table 6. Percentage of high and low numeracy who contributed in Opt in and Opt out

		Low Numeracy	High Numeracy
Opt In (N = 43)	Not Contribute	41%, N = 9	14%, N = 3
	Contribute	59%, N = 13	86%, N = 18
Opt Out (N = 36)	Not Contribute	27%, N = 5	17%, N = 3
	Contribute	73%, N = 13	83%, N = 15

Note: Low and High Numeracy refer to rough numeracy quartiles. Opt in refers to the default settings for contributing to the retirement account, and contribute and not contribute refer to whether participants decided to contribute to the retirement account.

$\phi = .3$, but not Opt Out condition $\chi^2(1) = 0.64, p = .42$, $\phi = .13$.⁴ These data suggest that defaults do not influence the most numerate, whereas they increase contributions to the retirement account for the least numerate.

General discussion

Experiments 1 and 2 provided some of the first evidence that default settings can influence some surrogate financial decisions. Experiment 1 suggested defaults could influence some forced choices. Experiment 2 replicated and extended this effect for choices that were not forced. In both experiments, the effects of defaults persisted after controlling for some individual differences such as personality and numeracy. Interestingly, in Experiment 2, numeracy was related to a greater willingness to contribute to the index fund retirement account regardless of default settings. The relation of numeracy to choices was not reliable in Experiment 1.

Given that it looks like we can influence some surrogate financial decisions with default settings, should we? Setting defaults to intentionally influence people to some more desirable choices is an instance of a group of strategies sometimes referred to as 'nudging' or Libertarian Paternalism (Thaler & Sunstein, 2008). The ethics of Libertarian Paternalism is hotly debated. In general, the most compelling instances where nudging is morally permissible is when there is a well-established, well-accepted, normatively correct choice. For example, it is relatively morally uncontroversial that, on average, having more organs available for transplant or having people invest more in retirement is morally good or desirable (Johnson & Goldstein, 2003). However, in other instances there is no well-accepted normative choice. Many instances of surrogate decisions lack a well-accepted normatively correct choice (e.g., should one terminate life-support?). There are simply too many

morally and procedurally acceptable choices that a surrogate (or patient) could make. In those instances, it is morally controversial what choices nudging should encourage.

One might think that we should nudge people to satisfy the three criteria for surrogate decision making rather than encouraging any particular choice. But still, it is not always clear how to do that. Values are important inputs for correct choices, and there is a plurality of legitimate values. To illustrate, take each of the three criteria for surrogate decision makers. For the advance directive standard, the previously expressed and documented wish of the person should be respected. Nudging surrogates to conform to the advance directive standard would be difficult because it is not clear how nudging would allow surrogates to make decisions that are more congruent with the advance directive. Much of this limitation has to do with the shortcomings of advance directives. Advance directives are notorious for being unclear, difficult to find when needed, and lacking guidance for unanticipated decisions (Fagerlin & Schneider, 2004). Moreover, wishes expressed in advance directives can be diverse making systematic default settings difficult to justify or execute. Perhaps there could be ways to custom tailor default settings for each surrogate using so called *predictive defaults* (Johnson et al., 2012). However, the costs associated with this custom tailoring option may outweigh the benefits (see below).

Using defaults to help satisfy the substituted judgment standard may seem more promising. Some research has documented a relatively small set of common end of life values. These values involve maintaining dignity, being free of pain, lacking anxiety, and having one's financial affairs in order (Steinhauser et al., 2001). If these themes are pervasive enough, perhaps systematic defaults could increase choices in accord with those widespread values (Frey, Hertwig, & Herzog, 2014; Johnson et al., 2012). Take the value that people do not want to be a financial burden on their families. Perhaps defaults can be set so that in some situations, the way the money is invested maximizes the chances that the money will last for the expected lifetime of the patient

⁴An interaction term was calculated (numeracy * default). Numeracy and default setting did not reliably interact with judgments about Money: $\beta = .01$, $S.E. = .19$, Wald's $\chi^2 = .003$, $p = .95$, odds ratio = 1.01 suggesting that the difference between those more and less numerate did not vary as a function of condition.

or that there will be sufficient return on the investment for sustainability (e.g., investing in an index-based fund). There are some normatively correct choices about what choices are likely to maximize financial security for many individuals. Of course, some people will have different values or circumstances that dictate a different correct choice. In those instances, the surrogate would be perfectly free to choose different options thereby maintaining liberty and helping preserve autonomy for patients.

Finally, take the best interest standard. Typically, this standard requires making the best professional choice for the patient. For medicine, that normally involves making the professionally determined best medical choice for that patient regardless of the patients' values (because those values are absent or not known to a sufficient degree). For financial decisions, the decision should be in the best professionally determined financial interest of the person. Many of these decisions are more normatively correct than others. For example, in medicine, having an appendectomy when required is an uncontroversially correct choice in almost all circumstances compared to not having the appendectomy (i.e., the costs are very low and the risk of harm very high). It is also commonly accepted that when one has money that is not required for payments (e.g., mortgage, student loans, etc...), then normally at least some of that money should be invested (Belsky & Gilovich, 1999). Just as nudging can be used to increase the number of organ donors, nudging could be used to increase the chances that surrogates would contribute to investments when funds are available (Thaler & Benartzi, 2004). As such, nudging with defaults could help financial surrogates make decisions in an ethically responsible way.

The relation of numeracy to more normatively correct choices in Experiment 2 also may support the use of nudges. Numeracy is related to normatively better decisions in a host of different domains (Cokely et al., 2012; Peters, 2012). For example, those who are more numerate are more likely to make more normatively correct choices for risky gambles (i.e., choosing the option with the higher expected value, Cokely & Kelley, 2008). In Experiment 1, there is not enough information to determine what the "right" choice is. One could reasonably think that the person in the scenario needs the money annually or that the lump sum would be better. However, in Experiment 2, there is enough information to make a decision that is more correct—investing some of the money in the index fund. As the scenario is described, Jeff's income exceeds his expenses and he is likely to live for a long time. Standard recommendations are to invest some of the excess money in retirement accounts like an IRA. The more numerate may have understood this information and were thereby less influenced by the defaults than

those who were less numerate. Defaults could thereby be used to help the people who need it the most—the less numerate. For the more numerate, the paternalistic influence of defaults would be the weakest and the least necessary (Johnson et al., 2012).

However, Libertarian Paternalism poses non-trivial risks of moral harm associated with violations of people's autonomy (Blumenthal-Barby & Burroughs, 2012; Hausman & Welch, 2010; Welch, 2013). Autonomy preserving alternatives to nudging should also be explored. One popular way to encourage desirable choices without nudging is by using decision aides. Decision aides could help facilitate autonomy and good decision making by presenting information transparently. If we could achieve the same desirable outcome without engaging in any form of paternalism, then there would be no justification for the paternalistic intervention. Indeed, we would have some obligation to engage in these alternatives in an effort to help secure informed decision making. In some related domains, there is evidence that these decision aides can help people make more normatively correct choices. For example, simple visual displays (e.g., bar graphs) have helped people make more normatively correct choices about sexually transmitted disease detection *and* prevention regardless of framing (Garcia-Retamero & Cokely, 2011). Something similar could be proposed for surrogate financial decisions. If surrogates make the normatively correct choice with visual aids, then there would be no need to nudge them.

One possible limitation with the current series of studies is their hypothetical nature. In particular, it is unclear whether the effects found in the hypothetical scenarios generalize to real surrogate financial decisions (Hertwig & Ortmann, 2001). While the only way to know for sure is to test these effects on real surrogate financial decision makers, there is some reason to think that these effects will generalize to actual surrogate financial decisions. First, defaults have been found to influence a number of other real-world decisions (Johnson et al., 2012; Thaler & Sunstein, 2008). This suggests that the effects found in the current series of hypothetical studies will likely be found in actual financial surrogate decisions. Second, in experiments exploring financial decisions for others, common framing effects were found in both hypothetical scenarios among laypeople (Stone et al., 2002) and hypothetical decisions of professional financial advisers (Roszkowski & Snelbecker, 1990). Third, there are often no differences between framing effects for real and hypothetical decisions (Kuhberger, Schulte-Mecklenbeck, & Perner, 2002).

These considerations offer a number of possible avenues for future research. These possibilities are presented in order of increasing degrees of speculation.

First, the research would be profitably extended if real financial surrogate decisions were examined. That would mitigate some of the worries associated with the hypothetical nature of the current studies. Second, possible interventions for those who need them the most should be investigated, preferably in autonomy promoting ways such as providing visual aides. Crucially, the costs and benefits of these possible interventions should be weighed against the non-autonomy promoting ways such as nudging. Third, surrogate decision making encompasses a host of different kinds of decisions (e.g., financial, medical, living arrangements, consent to experimentation), often by same surrogated. Given that the surrogate decision making locus is often located in a single individual, there may be some ways to combine interventions in efficient ways so that informing surrogates in one domain (e.g., financial decisions) can help decisions in a different domain (e.g., medical treatment). In this way, the efficiency of interventions could be greatly increased and offset possible.

In sum, the current series of studies suggest that defaults influence at least some surrogate financial decisions and suggests possible ways of helping surrogate financial decision makers. Of course, offering decision support that engages the rational capacities of agents is not free of problems. Decision support can be expensive in terms of time, money, and other resources and may not be as effective as nudging techniques in many instances (see Feltz (2015) and Trout (2005)). Balancing these costs and benefits is difficult. There is not likely to be any panacea for all kinds of surrogate decision making or standards. Rather, achieving a satisfactory method to help improve surrogate decisions will require ethics and science working hand-in-hand to help people make better, more informed, and more ethical decisions.

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