Behavioral Economics, Psychology, and Public Policy

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Abstract: Economics has been for a longtime the social science of choice when it comes to informing policy and policymakers. In the current paper we contemplate what role can behavioral sciences play in enlightening policymakers. In particular we focus on the following three questions 1) What kind of behavioral science is important for policy? 2) What are some possible directions for behavioral policy research? And 3) What are some possible approaches to get policy-makers to listen to behavioral scientists. The final picture we draw is one where policymakers are unlikely to invest the time translating behavioral research into its policy implications. Thus, to truly influence policy, researchers will have to invest substantial effort, and moreover that this effort will have to be directed differently from standard research practices. .

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Imagine waking up one morning, turning on the radio and hearing on the NPR news that the president of the US has issued the following statement:

> *"After consulting my chief psychologist, I am confident our new well-being policy will make us 34% happier as a society at almost no cost – all based on simple reframing"*

While the statement above is unlikely to be uttered by any publicly elected official during our lifetime, this type of statement represents our hope that one day psychologists and behavioral economists could become more central and substantive contributors to public policy. Our hope is motivated by two observations: The first is that over the past two centuries the study of human behavior has yielded many important and counterintuitive insights. The second is that, despite this knowledge of human nature and behavior, these findings rarely find their way to the most important potential applications of this knowledge – public policy.

The failure of psychology and behavioral economics to influence public policy is particularly painful and frustrating in light of the success of its sibling, economics, as the basis for policy recommendations. It is not that economics has nothing to offer policy – economics indeed provides policy-makers with vital tools. Rather, the success of economics clearly demonstrates that policy-makers are looking to academic fields for

guidance in setting their policies, and given this general willingness to accept advice, it is unfortunate that behavioral scientists are not providing their own perspectives. One daunting example of the disconnect of policy from behavioral findings is the design of military prisons in recent US operations. Had the thirty year old results of Zimbardo's famous Stanford prison experiment (1971) been included in their design, military confinement facilities may have been better equipped to perform well.

In this paper we review some of the recent behavioral improvements to traditional economics. While such enhancements may question the accuracy and even validity of several commonly used models, they have by and large been ignored in policy making. We then describe some of the very few cases in which such behavioral understandings actually improved policies. Finally, we consider the possible ways to increase the impact of behavioral research on public policy by outlining the hurdles and possible avenues of such influence.

Why Should Behavioral Research be Included in Policy?

The main reason behavioral science should be part of the policy debate is that it provides in some cases a perspective that is vastly different from economics. The most notable difference has to do with assumptions about rationality. Whereas economics assumes that individuals and organizations are rational agents, behavioral science does not. In fact, much of the work in the fields of behavioral decision making has been aimed at empirically demonstrating deviations from rationality due to cognitive and perceptual aspects of human architecture. Similarly, much work in behavioral economics has been aimed at relaxing these assumptions within the standard economic tools.

A major shortcoming of traditional economic models is that they assume too much about the capabilities of people making decisions. For example, economic research emphasizes the importance of retirement savings programs to the future welfare of workers (Ando & Modigliani, 1963). And indeed, many offerings have been created to enable people to act upon their best interests and save money for their retirement period. The common finding, though, is that too many employees without pre-defined pension plans do not save nearly enough for their future (Benartzi & Thaler, 2004). This is despite the obvious economic benefit of doing so. Behavioral researchers have demonstrated many possible reasons for this phenomenon, among them the sheer number of investment options causing inaction (Huberman, Iyengar, & Jiang, 2003), the huge impact of the default decision (Samuelson & Zeckhauser, 1988), the greater impact of losses then gains (Kahneman & Tversky, 1979), and the intertemporal asymmetry between the costs and benefits of the decision (Thaler & Shefrin, 1981). Understanding some of these behavioral antecedents to individuals' poor decision making, led to the creation of an innovative savings policy called "Save More Tomorrow". In this policy, individuals are not asked to invest a portion of their salary immediately, but to commit to a future saving that would be taken out of a portion of their raise (Benartzi & Thaler, 2004). In this way, many of the behavioral (irrational) difficulties of committing a part of one's salary towards some future benefit are mitigated, and a greater proportion of employees save for their future.

Another example of the importance of behavioral understandings in overcoming individual shortcomings is… fertilizers …. ##########

Finally, some policies exist and are enforced merely because we know no better ones. The case of police lineups is one such example. Police lineups in most places constitute of a witness attempting to recognize one person out of a group of potential suspects standing next to each other in a line (hence the name). While these lineups are popular, they suffer from the disturbing possibility of a false recognition – mistakenly identifying an innocent person as the perpetrator. Using insights about the manner in which individuals form judgments, Gary Wells and colleagues recently suggested an improvement to the lineup system whereby suspects would be evaluated sequentially instead of simultaneously (Turtle, Lindsay, & Wells, 2003; Wells, Malpass, Lindsay, Fisher, Turtle, & Fulero, 2000). In one telling example, Lindsay and Wells (1985) convincingly demonstrated that the probability of a false recognition of an innocent suspect is reduced dramatically when the mechanisms of presentation changes. Instead of the common practice of presenting multiple individuals simultaneously (which creates a tendency to identify one of the people as the suspect), a better approach is to present the individuals one at a time, making sequential judgments regarding their guilt. This improved methodology is already being used in Ontario and New Jersey.

While there are a few other cases in which behavioral knowledge was effectively used to improve public policy, they are not many. The factors contributing to such success stories may lie in the domain of behavior, in the manner in which the behavioral knowledge was attained, in the manner in which the policy change was attempted, or in a combination of these factors. We thus attempt to highlight the factors that may contribute to a successful enhancement of public policy through behavioral science.

What kind of behavioral science is important for policy?

In principle, behavioral science could be an important starting point for policymaking. What is less clear is what *kind* of behavioral science is best suited to inform policy-making. If the kind of behavioral science that is ideal for policy-making were different from the behavioral science currently practiced, how would it need to be changed in order to better fit this role? Some aspects that might be important differentiators between commonplace behavioral science and a policy-oriented behavioral science are: 1) whether the goal of the research is to study general principles or narrowly defined behaviors, 2) whether the goal of the research is to study human nature or to solve a particular problem, and finally, 3) as a consequence of the goal of the research, does the technology used in the research (e.g., the type of stimuli) lend itself to theory construction or to application.

The distinction between a theoretical science and an applied discipline is particularly important as it becomes clearer that the accurate answer to many of the questions concerning how people behave in certain situations is "it depends." In fact, as more knowledge about human behavior accumulates, it becomes evident that the particular circumstances that define the choice environment have tremendous impact on the action of the individual, even small ones. The characteristics of the decision environment that have been shown to influence behavior include the framing of the task (Tversky & Kahneman, 1981), the particular options that are in the choice set (Huber, Payne, & Puto, 1982; Simonson, 1989), the type of response that is asked for (Tversky, Sattath, & Slovic, 1988), the number of alternatives that are given (Iyengar & Lepper,

2000) or may potentially be reached (Amir & Ariely**,** 2004), the temporal nature of the decision (Laibson, 1997), the emotional aspects of the decision (Loewenstein, Hsee, Weber, & Welsh, 2001; Slovic, Finucane, Peters, & MacGregor, 2002; Slovic, Griffin, & Tversky, 2002), the order in which the alternatives are presented (Russo, Medvec, & Meloy, 1996), etc. Under this "it depends" kind of world, it is hard for any scientist to give a single answer about how individuals are expected to behave; yet this is exactly the input that policy-makers need most in order to better craft optimal policy.

A related question is whether the best role behavioral scientists could play in the policy arena is to search for general principles or to concoct exact recipes for how to address any specific policy issue. Despite Kurt Lewin's claim that "There is nothing so useful as a good theory," and James Maxwell's claim that "There is nothing more practical than a good theory," there is still a large gap between finding general principles and using those principles to prescribe particular policies. While theories and general principles are clearly useful, it is also clear that policymakers themselves are not going to conduct the research needed to translate these general constructs into specific policies, and that if behavioral scientists want their knowledge to be translated, they have to take the initiative and conduct the research that would bridge theory and the applied setting. Taking these extra steps means not only doing more applied work, but also becoming an expert in the particular policy domain one wants the research to apply to (savings, healthcare, taxes, education, police lineups, etc.). Without such expertise, the researcher might not be able to understand the nuances of the situation and may therefore conduct research that would miss some of the central aspects of the application domain. Finally,

it is naïve to expect policymakers to read academic journals, and the applied research should be disseminated in channels that are easily accessed by policymakers – including the popular press and personal communications.

A final related aspect has to do with the technology of research. From a scientific perspective it is almost always better to pick stimuli that would allow the researcher to directly and unambiguously attribute the effects to the theoretical construct. To achieve this goal, the selection of stimuli often includes artificial stimuli that are not common in the marketplace. For example, the use of simple gambles of the form win $x with probability y, has been instrumental in exploring decision making under uncertainty, but is clearly more abstract than any of the stimuli individuals encounter in their daily lives. Decisions regarding investment portfolios, insurance policies, and lottery tickets are carried out in somewhat different environments than simple gambles. As a consequence, decisions about these classes of stimuli have the potential to play out very differently. To make research in behavioral science more applicable, the stimuli used should reflect the richness of the environment they are meant to represent. Such selection of stimuli will increase the ability to generalize results to the setting of the policy, while at the same time to also increase the face validity of the study, which will help "sell" the work to policymakers. One downside of more realistic stimuli is that they simultaneously manipulate multiple factors, thus mudding the theoretical interpretation of the causes for the effects. A second downside is that the use of realistic stimuli can cause individuals to evaluate the stimuli based on existing schemas they already have from their past experience – altering their effects from one instantiation to the next.

Some possible directions for behavioral policy research

In this section we would like to point out a few possible directions for policy-oriented behavioral research. Before discussing such possible directions it is important to make a few comments about paternalism. To the extent that behavioral research on policy is successful, policy-makers will be equipped with tools to increase the effectiveness of policies. For example, behavioral research might help create policies that would increase savings, decrease drunk driving, increase the number of kids that upper middle class families have, or increase the expected duration of marriages. While behavioral research is likely to make such policies more effective, it is still not clear that the government should implement them. The question of paternalism, control, and manipulation of the citizens is a complex and delicate one that is beyond the scope of the current discussion – yet at the same time, the question of paternalism is central to the issue of research into policy, because any successful research could potentially increase paternalism. Individuals who have strong anti-paternalistic views may decide at this point that they do not want to increase the potential for paternalism and hence do not want to take part in any research related to policy. While this is a valid perspective, it is worth pointing out that policies made without research are not necessarily less paternalistic; it is only that they involve less understanding of the effectiveness of the policies. For example, the use of framing may make policies more effective, but also more paternalistic. However, current policies already employ framing, with or without understanding its exact effects.

Returning to the question of possible directions for policy-oriented behavioral research, we start with research directions that we predict will create the lowest levels of resistance and opposition from policymakers, as well as from their advisers – such as economists). We term these research directions "small interventions," and bundle under this title all the possible effects that lay people, including all of those who are not familiar with the behavioral literature, would predict not to have any effects on behavior. We reason that if policy makers predict that changes of the small interventions type will lead to no or small effects, they would be less likely to resist them. An example for such research is the work on effects of defaults of organ donations (Johnson & Goldstein, 2003), showing that the proportion of people who have organ donor status in countries where the default is that everyone is a donor (and people have to opt out if they don't want to be a donor) is over 90%, while the proportion of people who have organ donor status in countries where the default is that everyone is a non-donor (and people have to opt in if they want to be a donor) is below 20%. There are other cases in which the power of defaults can be harnessed to do good – it can be used to help people contribute to their 401K plans, to their Roth accounts, to enroll people in healthcare, gyms, etc. (again with all the problems related to paternalism).

Another example of possible small interventions could be based on context effects such as the asymmetric dominance effect (Huber et al., 1982), and the compromise effect (Simonson & Tversky, 1992). The work looking at context effects has repeatedly demonstrated that the alternatives provided in the choice set, even if they are not chosen, can have substantial effects on the options that are chosen. In the domain of policy, these

effects could be used to influence the choices individuals make on a range of topics from healthcare plans, to the selection of public officials, and even to convince people that they are not paying much income tax. A third example could be based on anchoring (Kahneman & Tversky 1974; Epley & Gilovich, 2001). It has been repeatedly demonstrated that asking people to answer a question about their willingness to pay (for example: would you pay an amount equal to the last two digits of your social security number for this box of chocolate), can have a substantial effect on their true willingness to pay for the good when elicited later using an incentive compatible procedure. In general, people don't believe that answering a hypothetical question about their willingness to pay can actually change their willingness to pay, and this is why anchoring could also be a part of the small interventions category. In the policy domain, anchoring can be used to "help" people contribute more to charity, increase their savings, etc.

A second direction for policy-oriented behavioral research involves the application of the established arsenal of behavioral effects and result – finding ways to use these ideas for improving existing, or coming up with new policies. For example, past research has shown that when a stack of newspapers is offered for sale using the honor system, asking people to leave the correct amount if they take a newspaper, at the end of the day there are more missing newspapers than money. The results also show that if a mirror is placed behind the stack of newspapers such that the people taking the newspapers can see their reflection, the discrepancy between the amount of missing newspapers and money left is reduced (%%% ref %%%). Using such devices to increase self-awareness could have far reaching implications if we were to apply this principle to

driving (reducing the tendency not to obey traffic rules), to personal tax returns (decreasing tax evasion), and to dishonesty at the workplace.

Another example of an application of a well-documented result to the domain of policy involves an examination of the framing of tax reduction on spending. In a recent paper, Epley, Idson, and Mak (2004) examined why the effect of the 2002 tax return on the economy was smaller than anticipated. Based on a series of experiments the authors conclude that if the tax reduction had been framed as a "bonus" rather than a "rebate," people would have spent significantly more of it. More generally, framing can be used in many situations ranging from framing the propositions citizens vote on during election times, to Medicare prescription options, and even to the question of how to trade-off personal freedom for security.

A final example of an application of established results relate to the "hot cold empathy gap" (Loewenstein, 1996). This work has demonstrated that when people are in a "cold" and non-emotional state, they are unable to accurately predict how they themselves would behave if they were in a "hot" emotional state. Drawing on personal experience, it is commonly observed that people who go food shopping while hungry usually buy too much food, and moreover that they do not seem to learn from their past experiences. A more controlled examination of this idea was provided by (Ariely & Loewenstein, 2004) where they asked subjects to indicate the likelihood that when aroused they will have safe sex, and the likelihood that when aroused they will behave themselves immorally in order to secure sexual gratification. The male respondents who

answered these questions in a cold state indicated that they were unlikely to take risks of unprotected sex and that they would not engage in morally questionable behavior in order to obtain sexual gratification. On the other hand, when sexually roused, the same participants gave dramatically different responses. Indicating that they would take risks of unprotected sex and engage in morally questionable behavior in order to obtain sexual gratification. Such "heat of the moment" effects and the intra-personal empathy gap can have substantial implications for policy. In the domain of sexual education, these results question the current practices, suggesting that more effective approaches to safe sex education and to the availability of contraceptives should be considered. A more distant example involves the relationship between actual voting behavior and opinions expressed away from the voting booth. When voting or expressing opinion, people are likely to be less accurate if their emotional state at the time of the opinion expression (which is usually a cold state) is different from the emotional state of the experience in question (which is sometimes a hot state). For example, voting about the Big Dig construction project in Boston might yield different results if the voters were to express their opinions while sitting comfortably in their offices vs. sitting in a hot humid day in a traffic jam.

Some possible approaches to get policy-makers to listen

The first approach we would like to promote is the grassroots approach. The idea here is that instead of hoping that someone in Washington DC will read behavioral papers or invite behavioral scientists to provide advice on policy issues, a better way might be to start at local communities. Starting at the communities we live in has the advantages that we know more of the environment, we are closer geographically, the stakes are lower

(which should make it simpler to try something new), and hopefully the bureaucracy is less potent, generating lower hurdles for implementation. Moreover, to the extent that a change in local policy is successful it could be spread by people who are using this policy in their day-to-day lives. One example of a successful grassroots approach is the abovementioned change to the policy of police lineup promoted by Gary Wells and colleagues (Turtle, Lindsay, & Wells, 2003; Wells, Malpass, Lindsay, Fisher, Turtle, & Fulero, 2000). Using the grassroots approach, researchers related to this project were individually involved in educating policemen and judges about their findings. Consequently, improved policy was introduced in Ontario and New Jersey, not only getting police to adopt this procedure but also getting judges to start demanding that police use this procedure regularly.

A second direction for behavioral policy type of research involves influencing policy via economics. The idea here is to use the established path from economics to policy – attempting to modify economics to be more descriptively accurate, and from there influencing policy. A prime example for this type of approach is prospect theory (Kahneman & Tversky 1979), which formalized the idea that judgments and preferences were reference dependent, and has since spurred many applications. One recent example is the abovementioned work by Epley and colleagues (2004) on the effects of the framing of tax-returns**.** As another example, Ariely, Koszegi and Mazar (2004) provide experimental evidence for the dependence of consumers' maximum willingness to pay (WTP) on the prices they expect to see in the marketplace – challenging the assumption that demand (WTP) is an independent force from production (supply) (see also, Amir,

Ariely, & Carmon, 2004). Their results show that as the price distribution for products increases in magnitude (i.e., a shift in the supply curve), so does consumers' willingness to pay (i.e., shifting the demand curve). They then go further and illustrate how neoclassical economists, who assume that the forces of supply and demand are independent, will be led astray when they calculate the effects of policy changes, such as taxation, on consumption. In particular, they show that the assumption of independence will overestimate the effects of taxation, and that this overestimation will increase as the dependency of supply on demand increases. If these results were to hold more generally, and if this idea were to be incorporated in the economics models attempting to estimate the effects of policy changes, the estimation might be more accurate.

A third direction for behavioral policy type of research involves influencing policy via law. As in the example of the eye-witness research (e.g., Wells, et al., 2000), or the recently evolving field of behavioral-law-and-economics (Sunstein, 2000; Jolls & Sunstein 2004), legal academia influences both judges and lawyers (i.e., grassroots) and regulators, and thus may potentially provide the right bridge for the existing gap between behavioral research and policy. For example, Jolls & Sunstein (2004) consider the potential to correct behavioral biases through corrective regulation. However, as may be apparent by the currently narrow scope of overlap between behavioral research and the field of law, some topics and principles are more easily applicable and useful for informing public policies than others.

The final and most challenging approach to induce policymakers to listen is to directly do research on policy. As behavioral scientists we are very used to pilot testing our ideas – knowing all too well that we cannot possibly think about all the possible things that could go wrong with our design, and use the pilot data to validate or modify our thinking. Moreover, we are also painfully aware of the effort and cost of running experiments and use pilot testing to minimize the waste of money and time. It is amazing, to say the least, that when it comes to policy there are no pilot tests. If anything, we would expect there to be many more pilot testing in policy given the complexity of the conditions, the high uncertainty, and in particular given the incredible cost. How is it that the government cuts taxes by billions of dollars without any pilot test? Why not give the residents of Iowa (just as an example) one of four levels of tax cuts for a year or two and see the effect? Wouldn't this be much more efficient and beneficial in the long run? The main point of behavioral policy research is that in many cases it is hard to make inferences from particular studies to a real policy question and that the only way to truly determine the effectiveness of policies is to engage in policy testing as an experimental endeavor. Obviously this idea is going to be difficult for policy makers to accept since it is so different from the way they currently go about making policy decisions, but we can dream that one day the Congress will debate the experimental design of a policy-experiment to test the effects of increased funding to higher educational institutes on welfare.

Summary

There is no question that the insights from research in psychology and behavioral economics could be very useful to inform policy decisions. If the designers of the prison systems would have been more familiar with the work of Zimbardo (1971), the travesty at the Abu Ghraib Prison (as well as in others) might have been prevented. Despite the importance of behavioral insights, the picture we draw here on the relationship between behavioral science and public policy is not a very optimistic one. In fact, the obstacles facing behavioral researchers who want to influence policy are substantial.

Because of these obstacles we highly recommend that behavioral scientists who want to take this path choose policy domains they are passionate about – hopefully this passion will carry them throughout the process and give them the required energy. A second advantage of general interest in a particular domain stems from the idea that in order to conduct experiments that can inform policies the experimental setup must take into account the factors that are most relevant to the policies in question. Without domain-specific knowledge academic researchers are likely to miss some of the important elements. Thus, it is clear to us that to influence policies individual researchers have themselves acquired specific knowledge and expertise in the policy domain.

The experimental setup to answer policy questions should also be considered. For example, research stimuli should have high face validity. The experimental design should closely resemble reality, even at a cost of ability to pinpoint the causes of the results. While some may argue that this is only a cosmetic issue, it is still crucial. Using ecologically valid stimuli is also instrumental in creating more precise recommendations

to policy makers. An additional cosmetic issue relates to the ways researchers present themselves. We find it hard to imagine that one day the President of the US will consult his or her psychological advisor (or at least publicly admit to doing this). The popular image of psychology usually conjures up the images of psychotherapy, Freud, and the leather couch—and as such does not necessarily create a positive image for policy. Psychologists can potentially improve their position by calling themselves behavioral scientists, or coming up with a new and more impressive title (behavioral policy science?).

While the overall picture we draw may seem daunting in its implications for how difficult it is for behavioral researchers to truly influence policy, the battle is not yet lost and as more researchers join this initiative, treading this path is likely to become easier. On a practical level, we have two specific recommendations. The first is for behavioral scientists to participate in the policy making maelstrom of Washington DC in the same way that economists do. This is not easy, but being willing to spend a few years in DC and taking the steps to do so is likely to yield progress. The second is to start small. Instead of imagining that Congress will read your latest paper and decide to change their policy, try to approach local institutions around your community (local government, school boards, local police etc.), as they are more likely to adopt changes and the likelihood of a grassroots movement succeeding at this point seems to us to be much higher.

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