Interdisciplinary Behavioral Science and Consumer Protection

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My Background

I'm an undergrad econ major and a PhD psychologist who has studied consumer behavior for my 40 years as a business school professor. Along with my fellow panelist David Gal, I'm in the distinct minority in this symposium, where most of the speakers and members of the audience are experts in economics and law.

I have spent the last decade attempting to promote interdisciplinary scholarship to help us understand consumer financial behavior. Those in the audience who attend the Boulder Summer Conference on Consumer Financial Decision Making know that we believe that no one field can claim to have all the answers. Every year we have academic experts from many disciplines. We learn from the research of others with different expertise, including researchers at the CFPB. This past year we had folks from Finance and Economics but also Marketing, Behavioral Science, Public Policy, Management, Law, Operations & Information Management, Strategy, Anthropology, Psychology, Risk and Actuarial Studies, Human Development, Family Studies, Public Health, and Consumer Sciences. These are complementary and not competing perspectives.

The frame of this symposium is to equate behavioral science study of consumer financial decision making with "behavioral economics" and with "nudging" to correct mistakes that consumers might make due to incomplete information or behavioral biases. One should see from the prior paragraph why that is a distortion. Michael Baye, my colleague on this panel, correctly decries the caricature of economic theory on a Wells Fargo website that is believed true by some scholars who know little economics. They claim incorrectly that economic theory assumes perfect information, complete search, infinite computational power, etc. It is equally true that some economists present a caricature of behavioral science. As a psychologist, I view the "nudge" label to be used so broadly as to make it mean "anything that influences behavior" – including interventions that rely on wildly different psychological and behavioral principles.

I've studied consumer memory, attention, and learning. I've studied how people construct their preferences when they do not have established preferences, making them highly sensitive to various context and framing effects. I also do work on how people think about the future. Finally, relevant to this session, I do work on "external validity", the examination of generality of research findings vs. heterogeneous treatment effects.

Disciplinary Frames and Key Concepts

My fellow panelist Michael Baye made a great point that one must "target the right pathology" to have an effective policy remedy. Other behavioral sciences give us concepts and findings to understand what pathology is underlying a set of symptoms, as does economics. These behavioral sciences help us understand the underlying process by which some intervention does or does not influence consumers' decisions.

Each discipline has its strong suit. Each also has areas where it has relatively less to say without making brain-twisting auxiliary assumptions to reconcile some behavioral pattern with one's own point of view. Classical economics brings a powerful tool kit and a single unifying theory. Alone among the social sciences, it models the interactions of buyers and sellers, and how they adapt to each other. The other social sciences tend to ignore the strategic adaptation of buyers and sellers in the market, but they have an advantage in descriptive accuracy; helping us understand how consumers actually behave. Moreover, other social sciences offer the concepts that can help us understand consumer behavior in the marketplace and offer process insights for why certain kinds of seemingly-plausible interventions intended to help consumers do not work as intended.

Take information remedies for example. Providing better information about options may not help if consumers are deciding based on emotion or habit rather than reason, or if consumers choose not to engage with information in legally mandated disclosures. [1] Tess Wilkinson-Ryan at the Penn Law School has written about the "Behavioral Paradox of Boilerplate." [2] She argues:

> *"Although assent is the doctrinal and theoretical hallmark of contract, its relevance for form contracts has been drastically undermined by the overwhelming evidence that no one reads standard terms. Until now, most political and academic discussions of this phenomenon have acknowledged the truth of universally unread contracts, but have assumed that even unread terms are at best potentially helpful, and at worst harmless. This Article makes the empirical case that unread terms are not a neutral part of American commerce; instead, the mere fact of fine print inhibits reasonable challenges to unfair deals."*

I'll put forth three ideas and sets of findings from my own field that I think are highly relevant to the work of the Bureau.

a. The consumer's "consideration set" should be a primary dependent variable to evaluate in assessing policies intended to promote more transparent and competitive financial marketplaces.
b. Information remedies such as financial education and product-specific disclosures have limited effects, and the reasons for those small effects can be understood by psychological principles.

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[1] Lynch, John G., Jr. and Gal Zauberman (2006), "When Do You Want It? Time, Decisions, and Public Policy," *Journal of Public Policy and Marketing*, 25 (Spring), 67-78.

[2] Wilkinson-Ryan Tess (2017), The Perverse Consequences of Disclosing Standard Terms. *Cornell Law Review*, 103:117.

c. When consumers make decisions in unfamiliar domains, they do not have established preferences and must construct them. In those cases, their decisions are highly sensitive to what the local context makes salient, making it likely that there will be a disconnect between expected utility and experienced utility.

The Consideration Set as the Key Dependent Variable

Work in marketing shows that the single most important determinant of what consumers choose is their "consideration set" of actively considered alternatives. For a customer to choose Action A (e.g., choosing a fixed rate, 30-year mortgage from a local credit union, at 3.5% interest and 0 points closing costs), the consumer must:

- consider Action A, and
- fail to consider another action liked better than A.

Those points seem obvious, but they are not. Arguably, most of the time that consumers fail to take some action, it is because that action was never considered. And arguably, many times an action is taken, it is because the consumer failed to consider another action that he or she would have preferred to the one chosen.

John Hauser (1978) showed the power of consideration sets in his analysis of studies of brand choice across a variety of categories.[3] Imagine that there are N brands in a market and the consumer considers n < N. Now consider this naïve choice model:

- Any considered brand is equally likely to be chosen – choice with probability 1/n.
- The remaining N-n brands are chosen with probability = 0.

Hauser found that this simple null model explains 78% of the explainable uncertainty in choices in a large set of categories. A model of multi-attribute preference to choose the winner from the consideration set explained only the remaining 22% of the explainable uncertainty. I would expect that the dominance of consideration sets to be more extreme when the ratio of n/N decreases, as in financial products. Therefore, understanding preference given consideration – the focus of disclosure information remedies – is a second order problem compared to the problem of understanding what gets considered. Understanding the consideration set is first order.

Many seller actions can be construed as affecting whether that seller is considered, and whether some other – possibly preferable – competitor is considered alongside.[4] Some of the forces affecting the size and composition of the consideration set are well described in terms of extensions of well-known economic search models.[5] However, factors that

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[3] Hauser, John R. "Testing the accuracy, usefulness, and significance of probabilistic choice models: An information-theoretic approach." *Operations Research* 26, no. 3 (1978): 406-421.

[4] Alba, Joseph, John Lynch, Barton Weitz, Chris Janiszewski, Richard Lutz, Alan Sawyer, Stacy Wood (1997), "Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces," *Journal of Marketing*, 61 (July), 38-53.

[5] Hauser, John R., and Birger Wernerfelt. "An evaluation cost model of consideration sets." *Journal of Consumer Research* 16, no. 4 (1990): 393-408.

explain consideration include attention and memory factors that lie outside of standard economic models of search and are more the province of psychology.[6]

There are significant implications of this work for public policy. The Bureau should routinely measure the effect of a policy interventions on the likelihood of considering "dangerous" financial products that are good for some consumers but problematic for many, and the likelihood of considering "desirable" products with the opposite properties. Remember, inclusion in the consideration set dominates relative evaluation of options in determining what is actually chosen. Second, insofar as there is heterogeneity and a given product is suitable for some small fraction of consumers but not for most, one would seek policy interventions that lead to changes in composition of consideration sets to reflect better sorting by type. Finally, a major dependent measure for policy makers for any intervention should be whether it expands the number of brands being considered. For instance, in Woodward and Hall's analysis of consumer confusion in the mortgage market, they concluded that people "under-search" and borrowers sacrifice an average of $1000 by searching too few brokers.[7]

What obfuscation by sellers and "sludge" by regulators makes that happen? Woodward and Hall found that "borrowers who compensate their brokers with both cash and a commission from the lender pay twice as much as similar borrowers who pay no cash." This shows the general principle that consumers have difficulty making tradeoffs across multiple dimensions. Markets become much more competitive and consumers become more price sensitive when alternatives can be easily compared on a single dimension.[8] I favor policy remedies that enhance the ability of consumers to easily compare competing financial products and that allow intelligent screening of alternatives by criteria in line with the idiosyncratic preference of heterogeneous consumers.[9]

Information Remedies Mainly Aim to Change Preference Given Consideration

I got into the field of consumer financial decision making due to two conferences, both involving Jan Pappalardo who is speaking in the second panel today. The first conference was one we hosted at Duke for a special issue of the Journal of Public Policy and Marketing about what psychology might offer public policy. The second was a 2008 FTC

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[6] Alba, Joseph W., J. Wesley Hutchinson, and John G. Lynch, Jr. (1991), "Memory and Decision Making," in Handbook of Consumer Theory and Research, eds. Harold H. Kassarjian and Thomas S. Robertson, New York: Prentice-Hall, 1-49; Fernbach, Philip M., Christina Kan, and John G. Lynch, Jr. (2015) "Squeezed: Coping with Constraint Through Efficiency and Prioritization," *Journal of Consumer Research*, 41 (February), 1204-1227; Nedungadi, Prakash. "Recall and Consumer Consideration Sets: Influencing Choice without Altering Brand Bvaluations." *Journal of Consumer Research* 17, no. 3 (1990): 263-276.

[7] Woodward, Susan E., and Robert E. Hall (2012). "Diagnosing Consumer Confusion and Sub-optimal Shopping Effort: Theory and Mortgage-market evidence." *American Economic Review* 102, no. 7: 3249-76.

[8] Lynch, John G., Jr. and Dan Ariely (2000), "Wine Online: Search Costs and Competition on Price, Quality, and Distribution," *Marketing Science*, 19 (1), 83-103.

[9] Lynch, John G., Jr. (2009) "Information Remedies, Choice Architecture, and Plain Vanilla Financial Products." Paper presented at Russell Sage Foundation Consumer Finance Working Group Meeting, New York, December 2009.

conference organized by Jan and Jim Lacko to understand the emerging mortgage crisis. Several of the papers at the latter conference aimed to change consumers preferences for mortgages by information remedies of two broad types:

- financial literacy proposals aimed at improving consumers general understanding of financial terms, as in Lusardi and Mitchell's work (e.g., 2008).
- product-specific disclosures (like TILA and HUD-1 disclosures);

Financial Literacy and Financial Education. Policy makers have recently embraced financial education as an antidote to the increasing complexity of consumers' financial decisions, and governments, nonprofits, employers, and consumer advocacy groups spend billions annually on financial education. Fernandes, Lynch, and Netemeyer meta-analyzed 201 studies to see how measured financial literacy or manipulated financial education correlated with financial behavior. [10] In the 90 experimental and quasi-experimental studies, financial education interventions explained on average 0.1% of the variance in the financial behavior variables. Because of the large sample size, the effect was highly statistically significant, but miniscule in magnitude, and weaker in low income samples than in studies using general population samples.

A meta-regression showed that effects of financial education on financial behavior increase with the number of contact hours of the intervention and decrease with the length of delay from end of educational intervention to measurement of behavior. The critical result was the interaction of contact hours and delay. When financial behavior is measured shortly after the educational intervention, the size of the effect of the intervention on financial behavior interventions increases sharply with more contact hours. But within two years afterward, that is no longer true, and effects of financial education on financial behavior do not differ from zero. We argued that any role of financial education to help consumers make better decisions should be "just in time" – narrowly focused on a specific financial behavior enacted shortly after the educational intervention. Subsequent meta-analyses find very similar results and point to the value of financial education at a "teachable moment."

This result is obvious to a psychologist and someone who studies learning and memory. Memory decays, and if you don't use it, you lose it. Therefore, any financial education should be narrowly targeted on a specific behavior that one hopes to influence shortly after the intervention. But many of the policy proposals involve financial education in secondary school and even elementary school, with broad courses intended to improve an array of financial behaviors later in life.

The target of the financial education matters too, because people tune out information they do not expect to use soon. We recently published a study of romantic couples sharing finances over time. [11] We demonstrated that if one is not responsible for financial

[10] Fernandes, Daniel, John G. Lynch, Jr., and Richard G. Netemeyer (2014), "Financial Literacy, Financial Education, and Downstream Financial Behaviors," *Management Science*, 60 (8), 1861-1883.
[11] Ward, Adrian, and John G. Lynch, Jr. (2019) "On a Need-to-Know Basis: Divergent Trajectories of Financial Expertise in Couples and Effects on Independent Search and Decision Making." *Journal of Consumer Research*, 45 (5), 1013–1036.

decisions in one's household, one does not accumulate financial literacy over time, in part because one tunes it out.

Limitations of Improved Disclosures. At the aforementioned 2008 FTC Conference on "Consumer Information and the Mortgage Market," there was much discussion of helping consumers avoid the bad mortgage choices. Policy proposals focused on providing disclosures that homebuyers would see before signing. I argued that this assistance is too late and of the wrong form. One can see from my brief discussion of the literature on consideration sets why improved disclosures are not the answer. Apropos of Michael Baye's question of whether we are "targeting the right pathololgy", was the real mistake consumers made that created the mortgage crisis:

a. choosing the wrong house?
b. choosing the wrong mortgage conditional on having chosen a house?

My answer is that consumers chose the wrong houses, and once attached to them, chose risky mortgages. Improving a HUD-1 disclosure so that consumers understand the terms better would have almost zero effect on the frequency of such mistakes. Here's why:

- Consumers do not read disclosures. The signing ceremony is a flurry of paperwork with the prospective homebuyers being passed a stack of documents they do not read.[12]
- The intervention is too late. If someone realized at the time of closing that he or she was making a terrible mistake, present biased preferences and the endowment effect would make it very difficult to let go of a desired house that is tantalizingly close. A study of mortgage disclosures conducted for the Federal Reserve found the following:

  > "A number of participants indicated that they were informed only at loan closing that the terms of their loan offer had changed. In almost all cases, these participants still completed the loan transaction despite any reservations they had. The most frequent reason mentioned was that they did not feel they had any options at that point in time—particularly in the case of home purchase loans. In other cases, participants accepted loans because they believed, or were advised by lenders, that they could easily refinance to better terms in the near future.[13]

- Most importantly, changing the consumers' understanding of the terms of a loan at that point changes consumers' *preferences* for considered options (with small effects on consumer choices) but does not change the *consideration set* – which explains the preponderance of the variance in choice outcomes. If one is sitting at the signing ceremony and one's consideration set consists of a single option with no alternative provided, one is virtually certain to choose that option.

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[12] Chin, Alycia, and Dustin H. Beckett (2018), "Don't watch me read: How mere presence and mandatory waiting periods affect consumer attention to disclosures." *Behavioural Public Policy* (2018): 1-20.
[13] ICF Macro (2009), *Summary of Findings: Design and Testing of Truth in Lending Disclosures for Closed-end Mortgages*. Submitted to: Board of Governors of the Federal Reserve System, July 16, 2009.

Constructive Preferences, Complex Problems

One of the most important conclusions from the last thirty years of research in judgment and decision-making is that people often lack stable utility functions to guide decisions. In those cases, they are highly sensitive to various context and framing effects that affect the decisions they make. When people have inputs for their decisions that are stable, accessible, and perceived to be diagnostic for the decision at hand, they are largely insensitive to many of these effects.[14] In the latter cases, there may be a close match between "expected utility" and "experienced utility."[15] But in the former cases, there may be systematic misprediction by consumers such that, in aggregate, it is knowable to the seller or policy maker but not to the consumer that some other option would likely have been better for the consumer.

The implication of this for consumer protection is that a laissez faire approach to financial services regulation is most in question when one is operating in a market where people are making consequential decisions but lack prior accessible experience. I agree with Thaler and Sunstein's argument that some kind of nudge may be desirable for consumer decisions that are: hard; infrequent; no opportunity to learn from feedback; no prior established preferences; and markets will not correct our mistakes.[16]

In May I attended a conference at Wharton honoring the distinguished cognitive psychologist and consumer decision researcher Wes Hutchinson, focusing on the question of whether consumers are "boundedly rational." In his valedictory address, Hutchinson surveyed the literature in cognitive psychology and decision-making where people more or less closely approximate bounded rationality.[17] His conclusion generalizing from a wide range of research:

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[14] Alba, Joseph W., J. Wesley Hutchinson, and John G. Lynch, Jr. (1991), "Memory and Decision Making," in *Handbook of Consumer Theory and Research*, eds. Harold H. Kassarjian and Thomas S. Robertson, New York: Prentice-Hall, 1-49; Bettman, James R., Mary Frances Luce, and John W. Payne. "Constructive consumer choice processes." *Journal of Consumer Research* 25, no. 3 (1998): 187-217; Feldman, Jack M. and John G. Lynch, Jr. (1988), "Self-Generated Validity and Other Effects of Measurement on Belief, Attitude, Intention, and Behavior," Journal of Applied Psychology, 73 (August), 421-435; Lynch, John G., Jr. (2004), "Accessible but Nondiagnostic Memories about Memory and Consumer Choice," in Abbie Griffin and Cele Otnes (Eds.), 16th Paul D. Converse Symposium. Chicago: American Marketing Association; Lynch, John G., Jr., Dipankar Chakravarti, and Anusree Mitra (1991), "Contrast Effects in Consumer Judgments: Changes in Mental Representations or in the Anchoring of Rating Scales?" Journal of Consumer Research, 18 (December), 284-297; Lynch, John G., Jr., Howard Marmorstein, and Michael F. Weigold (1988), "Choices from Sets Including Remembered Brands: Use of Recalled Attributes and Prior Overall Evaluations," Journal of Consumer Research, 15 (September), 169-184;Martin, Leonard L, and Abraham Tesser (1992), The Construction of Social Judgments. Hillsdale, NJ: Lawrence Erlbaum Associates; Morwitz, Vicki G., Eric Johnson, and David Schmittlein (1993), "Does Measuring Intent Change behavior?." Journal of Consumer Research 20 (1), 46-61.

[15] Huber, Joel, John Lynch, Kim Corfman, Jack Feldman, Morris Holbrook, Don Lehmann, Bertrand Munier, David Schkade, and Itamar Simonson (1997), "Thinking About Values in Prospect and Retrospect: Maximizing Experienced Utility," Marketing Letters, 8 (June), 323-334.

[16] Thaler, R.H. and Sunstein, C.R. (2009), Nudge: Improving Decisions about Health, Wealth, and Happiness. Penguin.

[17] Hutchinson, J. Weseley (2019), "Wroe Alderson Lecture: Are Consumers Boundedly Rational?" Presentation at Wroe Alderson Symposium, Wharton School. Philadelphia, May 2, 2019.

> "We are very good at selecting important information, learning from past experience, and similarity-based reasoning, and pretty good at verbal and non-verbal communication, simple symbolic inference and predicting the very near future. But we truly suck at complex problem solving and understanding the long-term consequences of our current actions"

It is in those areas, I believe, that are most likely to need consumer protection.

Methodological Preferences

Our panel was asked to comment on the limitations of different kinds of data to inform policy, noting that many behavioral economics findings in the literature come from laboratory, surveys, or field experiments. Are there particular merits or drawbacks to studying consumer behavior in controlled settings?

My fellow panelist Michael Baye expressed his views:

> *"Three primary types of data are available to guide evidence-based consumer protection decisions: surveys, experiments and field data. During the course of my career, I have used all three approaches to answer different questions, and each has value. Other things equal, though, I prefer field data to experimental data, and prefer experimental data to survey data."*

I'd guess that most people in the audience would agree on grounds that the field data have greater "external validity" than data from laboratory experiments. "External validity" is the degree to which effects of a treatment manipulation generalize to and across different subgroups of person, settings, and times.[18]

I have a very different view. External validity is not a function of the research approach.[19] Large scale field experiments often fail to replicate each other, and there is not to my knowledge any credible paper showing greater generalizability from field study to field study than generalization from lab studies.[20] Lee Cronbach (1975) argued that most real-world behavior is a function of higher order interactions that are difficult to anticipate.[21]

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[18] Cook, T. D., and Campbell, D. T. (1979), *Quasi Experimentation: Design and Analysis Issues for Field Settings*, Chicago: Rand McNally.

[19] Hutchinson, J. Wesley, Wagner A. Kamakura, and John G. Lynch, Jr., (2000) "Unobserved Heterogeneity as an Alternative Explanation for 'Reversal' Effects in Behavioral Research." *Journal of Consumer Research*, 27 (December), 323-344; Lynch, John G., Jr. (1982), "On the External Validity of Experiments in Consumer Research," *Journal of Consumer Research*, 9 (December), 225-239; Lynch, John G., Jr. (1983), "The Role of External Validity in Theoretical Research," *Journal of Consumer Research*, 10 (June), 109-111; Lynch, John G., Jr. (1999), "Theory and External Validity," *Journal of the Academy of Marketing Science*, 27 (Summer), 367-376.

[20] Dipboye, Robert L. and Michael F. Flanagan. 1979. "Research Settings in Industrial and Organizational Psychology: Are Findings in the Field More Generalizable Than in the Laboratory?" *American Psychologist*, 34:141-150.

[21] Cronbach, Lee J. (1975). Beyond the two disciplines of scientific psychology. *American Psychologist*, 30, 116–127.

The sad fact is that both laboratory and field experiments often fail to generalize.[22] We just don't know it for the field experiments because they are so difficult and expensive to execute that we rarely attempt to replicate them. With laboratory studies, there is more scope for replication and learning from meta-analysis to synthesize results from different studies.

Fundamentally, external validity is a function of the laws of human behavior and whether the effects of the independent variable under study are moderated by various background factor × treatment interactions. If one blithely analyzes average treatment effects for some intervention, but the effect is subject to unobserved and unmodeled interactions of that effect with background factors, the average treatment effect may completely distort the real effects on subgroups, and in fact may apply to nobody. That is true for both laboratory and field research. And if one held some background factor constant in an experiment, thinking it irrelevant, but it would have interacted with one's treatment if allowed to vary, one will mis-estimate the effect of that treatment in some real world or laboratory situation where the background factor was held constant at different levels.

My own view is that every individual research result should be taken as highly provisional, precisely because treatment effects on human behavior are moderated by interactions with unobserved and unappreciated background factors. Our confidence in an evidential base is increased by conceptual replication of the finding using different operationalizations of the key conceptual independent and dependent variable. That allows us to analyze for why different studies get different results, leading us to appreciate background factor x treatment interaction that were not apparent in the original studies published.

One can see that laboratory studies have an advantage over field experiments because a) they are less expensive, so it is more common to observe conceptual replication, and b) they allow measurement of underlying process to assess why exactly the manipulations had the effects they had. Only when one understands the underlying mechanism is one in a strong position to make statements about why results are likely to differ if one changes a particular background factor.[23]

The lack of robustness of treatment effects is very general problem. There are new methods to discover predictors of heterogeneous treatment effects *within* a given experiment. [24] And to understand reasons for heterogeneous treatment effects *across* experiments, the answer is meta-analysis. Any single finding is a piece of the puzzle that becomes clear by evidence accumulation. As the CFPB attempts to weigh new and sometimes conflicting findings for policy recommendations, a major activity should be

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[22] Lynch, John G., Jr., Eric T. Bradlow, Joel C. Huber, and Donald R. Lehmann (2015), "Reflections on the Replication Corner: In Praise of Conceptual Replications," *International Journal of Research in Marketing,* 32 (4), 333-342.

[23] Lynch, John G., Jr. (1999), "Theory and External Validity," *Journal of the Academy of Marketing Science*, 27 (Summer), 367-376.

[24] Wager, Stefan, and Susan Athey. "Estimation and inference of heterogeneous treatment effects using random forests." *Journal of the American Statistical Association* 113, no. 523 (2018): 1228-1242.

the coding of studies for facets of difference that allow meta-analytic conclusions, very much like in the study of the effects of financial education I described above.

Conclusion

I've been thoroughly impressed with the researchers I have encountered in the CFPB. They are talented scholars and dedicated public servants. But if I had any critique of the organization, it is that it is so dominated by economists, with low representation of other behavioral sciences. This is in no way a denigration of what economics has to offer. It is an affirmation that other behavioral science disciplines have complementary skills in terms of concepts, findings, and methods.