

HARMFUL FREEDOM OF CHOICE: LESSONS FROM THE CELLPHONE MARKET

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I

INTRODUCTION

The cellphone market is an exciting and fascinating avenue for research. In it, one finds high-speed technological innovation, changes in social norms regarding public versus private space and behavior, issues of competition policy in concentrated industries, public-health and environmental concerns, regulation of communication media, and consumer-protection law regarding commercial relations between cellphone providers and their customers. Add onto that the ever-increasing array of services provided via cellphones, and the possibilities for research seem boundless indeed. The market is obviously important in terms of its size and social prevalence, but it also allows a peek into issues arising in other industries and the manner in which regulators and legislators seek to effect social change. The issues to be analyzed here will thus affect not only legal and public policy in the cellphone industry, but will serve as a basis for discussion of social, economic, and legal issues arising in other industries as well.

This article focuses on the relationship between provider and customer, specifically on the complexity of available contracts and the ways this complexity might be harmful to consumers. In a nutshell, the question is whether the expanded choice offered to consumers acts to their detriment, rather than benefiting them, and what special circumstances in the cellphone industry might exacerbate this problem. Complexity-in-choice problems can arise in a multitude of ways, increasing choice while making comparison between alternatives more difficult. The cellphone market is a prime example, as consumers choose along multiple dimensions, including type of handset, type of contract, type of coverage, and more. Even after initial choice, cellphone usage usually varies over time, raising issues with following up and checking monthly bills and the difficulties of understanding what seem to many to be exceedingly complicated pricing plans, as well as their presentation in (purposefully?) obfuscated monthly bills.

Since the cited literature draws heavily from psychology on one hand and economics on the other, central themes will be introduced via experimental and empirical data. The use of specific and numerous examples will hopefully clarify the issues, and allow for looking beyond the anecdotal evidence to discern recurring themes evolving from human reasoning and the limitations thereof. The basic mechanisms of choice-making are investigated thoroughly in order to clarify the types of problems expected in different circumstances and to stress the difficulty of trusting the market to provide meaningful consumer choice. Experimental data and psychological literature are used to examine the consumers' side—wherein cognitive limitations and biases lead to choice-seeking that worsens eventual outcomes. Empirical data and economic literature are used to examine provider and market effects—wherein market structure exacerbates the problem and leads to strategic obfuscation by providers.

The cellphone market will serve both as a platform for implementation, important due to its size and centrality in current social life, and as a particular example of the wider debate—whether and how much government should intervene in the marketplace to protect consumers apparently unable to protect themselves. Beyond the general issues pertinent to other consumer markets, the cellphone market has distinct economic attributes exacerbating these issues. Specifically, the high level of concentration characteristic of telecommunications markets affects the competition between providers in a manner directly affecting the provision of choice to consumers (and the latter's ability to bargain for it). Comparisons among providers' offerings, which facilitate consumer choice between providers, may be strategically constrained through obfuscation, further reducing competitive forces. Furthermore, contractual complexity may allow price discrimination between consumers in a manner more severe whenever long-term relations between provider and consumer are expected (due to high switching costs), and subscription pricing prevalent in the cellphone industry plays a role as well.¹

Consumers face a multitude of decisions when choosing a cellphone provider or calling plan. They face a large variety of handsets, technical capabilities, and contract terms, seemingly giving them freedom of choice on many levels. The question is to what extent this choice is fictitious, a façade of consumer autonomy covering a reality of confusion due to the difficulty of comparing the different providers' offerings. From a legal perspective, it is important to determine to what extent the multiplicity of terms raises issues of consumer protection and subversion of the competitive process. Deciding whether regulatory intervention is needed requires not only assessing consumers' ability to effectively choose among the many offers, but also

1. The discrimination issue developed in this article draws on the distinction between naïve and sophisticated consumers, specifically whenever some of the product attributes are difficult to discern and consumers differ in their cognitive capacity or market experience. See *infra* text accompanying note 59.

deciding how regulators view consumers and how much psychological realism we are willing to admit into the legislative and regulatory process.

This article focuses on the consumers' vantage point and the legal assumption of consumer capabilities as a necessary first step of regulation. Although the focus is individual in nature (assessing cognitive limitations and resulting market behavior), the broader characteristics—such as provider concentration—are vital to the analysis and strongly affect the type of contracts consumers are offered. In other words, competition in the market is formed by a combination of “standard” economic attributes and psychological effects consumers cannot escape. As a result, contractual complexity may corrupt the choice process, allowing both consumer exploitation and lessening of competition.

This article aims to elucidate the issues, fleshing them out both as a general phenomenon and as a specific implementation in the cellphone context. The aim is not to provide ultimate solutions, but to show the directions these solutions might take and the difficulties involved. Essentially, this article delves into the question of what “choice” really means, and the problematic nature of either trusting the market to provide it, or relying on regulation to protect it. The issues are discussed within the behavioral-economics framework, enumerating cognitive biases and their effect on consumer decision-making. There is an abundance of legal and economic literature dealing with proposed regulatory solutions for better-known and widely discussed biases, and some will be discussed below (along with their critics). The problem of hyperchoice, though, has yet to receive the same attention. Such a bias not only exists, but warrants special attention, as autonomy is both enhanced and limited by what is initially seen as consumer choice.

II

CONTRACTUAL COMPLEXITY—WHEN IS THERE TOO MUCH CHOICE?

Consumers' freedom of choice is usually seen as a good to be maximized, since increasing variety allows the consumer to find an alternative closer to his most preferred choice, as well as facilitating the expression of personal autonomy.² Despite this, it is possible to argue that increased variety need not benefit the consumer and might be used by the provider to confuse the

2. See, e.g., E.L. DECI, *THE PSYCHOLOGY OF SELF-DETERMINATION* 5 (1981) (noting the capacity to choose as the basis of self-determination); Jane Beattie et al., *Psychological Determinants of Decision Attitude*, 7 J. BEHAV. DECISION MAKING 129, 129 (1994) (noting the desire for choice). See generally E.L. DECI & R.M. RYAN, *INTRINSIC MOTIVATION AND SELF DETERMINATION IN HUMAN BEHAVIOR* (1985).

While freedom of choice allows for self-determination and autonomy, here, there can be too much of a good thing. The consumer's ability to choose may be impeded by having too many alternatives—an argument that will be at the center of the discussion below. See, e.g., Barry Schwartz, *Self-Determination: The Tyranny of Freedom*, 55 AM. PSYCHOLOGIST 79, 79–88 (2000); Barry Schwartz, *Freedom and Tyranny: Descriptions and Prescriptions*, 56 AM. PSYCHOLOGIST 80, 80–81 (2001).

consumer and point him towards the provider-profit-maximizing options, as well as creating an unrealistic sense of choice and competition.

The basic idea of complexity as an anticonsumer tactic is simple: given consumers with limited cognitive capability, their ability to know and understand the variety of alternatives is constrained. Thus, past a certain stage, adding an option does not add to choice, and may even detract from the decision-making process due to the cognitive load placed on the consumer. Of course, the consumer is supposedly free to ignore extraneous options or examine only the first x alternatives he encounters (x being a factor of his personal attention-span). Still, in reality, the problem is more severe: the attempt to assess the multiple options hinders choice *even among the smaller number of alternatives consumers are capable of remembering and comparing to each other*. Cognitive overload leads to mistaken decisions, and these can be anticipated, indeed planned, in a manner allowing providers to plan the number and types of alternatives offered, as well as the optimal order in which they are presented to the consumer. Furthermore, choice is often valued as a good due to the decision-maker's ability to express autonomy by exerting control over the process. In contrast to this intuitive view, excess alternatives detract from the ability to handle the choice situation, and thus consumer autonomy suffers.

A. Cognitive Overload: The Difficulty of Choosing

The cellphone market typically offers an extremely wide variety of handsets and calling plans from which the consumer may choose. Seemingly, variety means choice, and increasing consumers' choice enhances their welfare. Nonetheless, the question remains how good consumers are at choosing optimally when variety is large and uncertainty as to future effects prevails. Especially interesting is whether the rational model's prediction—that increasing the number of alternatives increases welfare (due to ability to find “a better fit”)—holds when cognitive overload is taken into account.

Assuming the human mind fulfills many purposes simultaneously, cognitive overload may be characterized as “cost of thinking,” a situation where brain resources are utilized extensively to understand a complex situation at the expense of investing mental effort in other actions.³ In the context of consumer choice, the cost of thinking includes not only the difficulty of understanding a specific offer, but also the resources necessary to find and compare relevant alternatives and the need to classify offers as competing or belonging to different categories altogether. Cognitive overload may lead to mistakes in

3. See, e.g., Steven M. Shugan, *The Cost of Thinking*, 7 J. CONSUMER RES. 100, 108–10 (1980). For an economic model wherein the limited resource is time for thought, as well as experimental validation of the model's results, see generally Xavier Gabaix et al., *The Allocation of Attention: Theory and Evidence* (MIT Dep't of Econ., Working Paper No. 03-31, 2003), available at <http://ssrn.com/abstract=444840>. Among other things, this study found an inverse relationship between the number of options examined and the tendency to stop the search and choose—even when the advantage gained by continuing the search remained the same.

judgment, and also to a “decision not to decide,” deferring the need to deal with the question due to the difficulty of formulating a clear answer.⁴ Avoiding a difficult decision can take the form of delaying a purchase, or making a quick decision while avoiding an in-depth comparison that is difficult to make. Such quick decisions typically rely on a preliminary and superficial assessment of affective (emotion-laden) characteristics, deferring consideration of those attributes requiring more cognitive effort.⁵

This cognitive-affective divide was cleverly highlighted by an experiment conducted to test the relationship between cognitive overload and self-control.⁶ A group of subjects was asked to remember a two-digit or seven-digit number, while deciding what type of food to choose: chocolate cake or fruit salad. Memorizing the numbers created a cognitive load, with the two-digit treatment signifying a relatively easy task compared to the seven-digit treatment. The choice between chocolate cake and fruit salad was an attempt at testing the subjects’ willpower, under the assumption that fruit salad is often chosen via a cognitive consideration of health and fitness, necessary to overcome the affective tendency towards chocolaty instantaneous gratification.⁷ The difference between the groups was significant and stark. Among those memorizing two-digit numbers, thirty-seven percent chose the chocolate cake, while their seven-digit counterparts chose cake fifty-nine percent of the time.

This cute anecdote exemplifies a general tendency accepted in the psychological literature—that high cognitive load “steals away” mental resources from other issues simultaneously considered, and reduces the cognitive availability necessary for self-control. The practical conclusion may be that when one would like to steer consumers towards a more affective and less controlled decision, creating conditions of cognitive overload is a good start.⁸

4. See generally Eric A. Greenleaf & Donald R. Lehmann, *Reasons for Substantial Delay in Consumer Decision Making*, 22 J. CONSUMER RES. 186 (1995) (discussing how consumers delay decisions).

5. See Colin Camerer, George Loewenstein & Drazen Prelec, *Neuroeconomics: How Neuroscience Can Inform Economics*, 43 J. ECON. LITERATURE 9, 11 (2005) (discussing false interpretations of emotion-laden behavior).

6. See Baba Shiv & Alexander Fedorikhin, *Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making*, 26 J. CONSUMER RES. 278, 282–86 (1999).

7. Beyond the basic heterogeneity of preferences regarding these alternatives, supposedly distributed randomly and identically in both groups.

8. See, e.g., John M. Hinson, Tina L. Jameson & Paul Whitney, *Impulsive Decision Making and Working Memory*, 29 J. EXPERIMENTAL PSYCHOL. 298, 304–05 (2003). The level of cognitive load does not have to be a direct result of the number of options. It also varies according to the structure of the question, the consolidation of information into categories, and the distribution of possibilities. Thus, the same number of alternatives can lead to different levels of cognitive load. See Nicholas H. Lurie, *Decision Making in Information-Rich Environments: The Role of Information Structure*, 30 J. CONSUMER RES. 473, 484–85 (2004).

Another way of focusing information for consumers is to encourage them to create an “ideal picture” of the product they seek. Consumers holding such a mental picture use it as a fulcrum upon which to compare the alternatives they face. They essentially compare categories rather than lists of attributes, allowing for consideration of a larger number of alternatives. See Alexander Chernev,

Going further, it is possible to devise a decision-making process requiring the consumer to go through multiple stages, leaving the choice requiring the most self-control last, after the cognitive component tires.⁹ Complexity yielding such decision-making processes is not necessarily a planned anticonsumer tactic devised by businesses seeking to exploit their customers. Often, the large number of options is considered attractive by consumers, and they actively seek the (seemingly) enhanced freedom of choice associated with them. There are even arguments that such choice proliferation is detrimental to the producers offering them, and profit-maximizing requires cutting down on options offered.¹⁰

One of the interesting aspects of choice overload is that consumers are generally unaware that variety may work to their detriment, and may be unaware of the effects of cognitive overload—despite their actions. For example, consumers have a known tendency to make a decision based on partial consideration of the reasons therefore, or even considering just a partial list of product characteristics, and “tell themselves” a reasonable story that justifies the decision. It seems most consumers are interested in the feeling that they chose correctly, and they are quite good at finding ad hoc reasons to prove their own wisdom. Furthermore, this preference is so strong that systematic evidence is available to show that people are willing to distort existing information in order to better suit their preferences, despite the distortion fooling no one other than themselves.¹¹ One interesting phenomenon is that decision-makers find a way to prefer options whose superiority is easier to explain, not based on product attributes, but on the ease of answering the question, “Why is this option preferred?”¹² Beyond that, in order to ease decision-making, there is a tendency to focus on easily compared attributes and base decisions on them, while ignoring more important attributes that do not lend themselves so easily to creating a clear hierarchy among alternatives.¹³ All in all, this first glimpse paints a rather bleak picture of consumers’ aptitude for utility maximization through product choice.

Beyond questioning utility maximization, the argument for consumer autonomy suffers as well, insofar as legal policy should respect actual choices

Product Assortment and Individual Decision Processes, 85 J. PERSONALITY & SOC. PSYCHOL. 151, 159–60 (2003).

9. See K.D. Vohs et al., *Making Choices Impairs Subsequent Self-Control: A Limited-Resource Account of Decision Making, Self-Regulation, and Active Initiative*, 94 J. PERSONALITY & SOC. PSYCHOL. 883, 895–97 (2008).

10. See, e.g., Cynthia Huffman & Barbara E. Kahn, *Variety for Sale: Mass Customization or Mass Confusion?*, 74 J. RETAILING 491, 506–07 (1998).

11. See J. Edward Russo, Margaret G. Meloy & Victoria H. Medvec, *Predecisional Distortion of Product Information*, 35 J. MARKETING RES. 438, 448–50 (1998).

12. See, e.g., Eldar Shafir, Itamar Simonson & Amos Tversky, *Reason-Based Choice*, 49 COGNITION 11, 33 (1993).

13. See Christopher K. Hsee, *The Evaluability Hypothesis: An Explanation for Preference Reversals Between Joint and Separate Evaluations of Alternatives*, 67 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 247, 255–56 (1996).

made and refrain from interfering therein. Consumer choice is undoubtedly important from both an autonomy-respecting perspective and a revealed-preference individual-utility-maximization perspective. Still, the evidence shows that actual choices made by consumers are not necessarily true “choice,” but suboptimal (some would say knee-jerk) reactions to circumstances subverting the choice process. If this is the case, and even more so if this is the result of deliberate business strategy seeking to exploit these weaknesses in consumer decision-making capabilities, the argument that legal policy should simply accept what consumers choose is not so simple.

Even when lacking time or mental resources to make a full comparison among competing offers, it would be reasonable to expect the consumer’s decision will be made based on those attributes considered the most important (despite their full effect being too difficult to assess). In other words, a rational consumer aware of his limited capacity of considering all relevant dimensions would rate attributes based on their (subjective) importance, and consider as many of them as possible, weighted by importance and (the inverse of) cognitive cost. In contrast to this admittedly optimistic expectation, reality shows that when complexity is high, consumers tend to seek decision tools (that is, the methodology used to make decisions in high-complexity environments) reducing the dimensionality of the problem, usually through heuristics limiting the number of attributes considered. The problem is that such heuristics typically rule out options strictly preferred (by the consumer himself) to those remaining in the active choice set.¹⁴ Thus, consumers act in a way that effectively reduces their ability to find the best option, even according to their own subjective assessment.

An especially interesting example may be found in a study where consumers were given a list of products in response to their internet search.¹⁵ Some saw a list of fifteen products to choose from, while others saw fifty such items. While those receiving a longer list are supposedly better off, this group chose worse products on average, after spending a longer time searching for them. A large variety does harm to the quality of choice due to the difficulty of comparing the alternatives, thus making identification of the optimal choice harder. Beyond that, a well-documented tendency is to prefer the option framed as the default choice. “Status quo bias” is a well-known phenomenon that received much empirical and experimental corroboration, becoming a central part of behavioral economics and arguments in favor of “soft paternalism.”¹⁶ Empirical studies show that in a large variety of circumstances, individuals prefer to stick

14. John J. Payne, James R. Bettman & Eric J. Johnson, *THE ADAPTIVE DECISION MAKER* xi (1993) (noting errors arising from selective heuristics).

15. See Kristin Diehl, *When Two Rights Make a Wrong: Searching Too Much in Ordered Environments*, 42 J. MARKETING RES. 313, 317–18 (2005).

16. See generally Daniel Kahneman, Jack L. Knetsch & Richard H. Thaler, *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 J. ECON. PERSP. 193 (1991); Richard H. Thaler & Cass R. Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV. 175 (2003).

to the default option they were offered, probably in order to avoid examination of the different options and the risk of future remorse.¹⁷ This is true not only in economic applications, but also in such different contexts as maintaining current political structure, and even increasing support (or reducing resistance) to practices of torture carried out by U.S. officials on suspects of terrorism, when these were described as part of an ongoing practice rather than a new development.¹⁸

The stress an individual encounters when facing a complex choice may lead to a preference not to decide at all, even when each of the alternatives is better than not deciding. An especially significant example in terms of economic implications is found in workplace retirement funds. In the United States, this has turned into an especially fertile ground for research, as employees need to decide on an appropriate fund when they are hired (and sometimes periodically afterwards), and the implications of their choice will be felt only when they retire. Since the economic implications are large (retirement savings accumulated over a long period), this is an especially difficult choice to make. Often several competing funds are offered, differing in levels of risk and reward, and the difficulty of understanding them combines with an ability to defer the choice to an unknown future date. If the decision is difficult to make now, but there is ample time (theoretically) to return to it in the future, the temptation to defer deciding is large. Because no change is expected in the complexity of the decision later on, the result is a dynamic reminiscent of “tomorrow the diet starts,” with a similar level of success.

A fascinating study examining the relationship between the number of funds from which employees could choose and their actual choice showed a clear tendency to avoid choosing altogether (and thus implicitly choose none) as the number of alternatives increased.¹⁹ Since a picture is worth more than a thousand words, the results are shown as they appear in the original.²⁰

17. See, e.g., Ravi Dhar, *Consumer Preference for a No-Choice Option*, 24 J. CONSUMER RES. 215, 228–30 (1997). There exists a significant strand of behavioral-economics literature dealing with the status quo bias and its implications in economic decision-making, such as choice of insurance policies, investment portfolios, and more. See generally William Samuelson & Richard Zeckhauser, *Status Quo Bias in Decision Making*, 1 J. RISK & UNCERTAINTY 7 (1988); Brigitte C. Madrian & Dennis F. Shea, *The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior*, 116 Q.J. ECON. 1149 (2001). A related issue is “omission bias,” whereby inaction is preferred to action when adverse results are expected. It seems most people prefer to have negative outcomes “forced upon them” rather than blaming themselves for causing them to occur. See Ilana Ritov & Jonathan Baron, *Status-Quo and Omission Biases*, 5 J. RISK & UNCERTAINTY 49, 60–61 (1992).

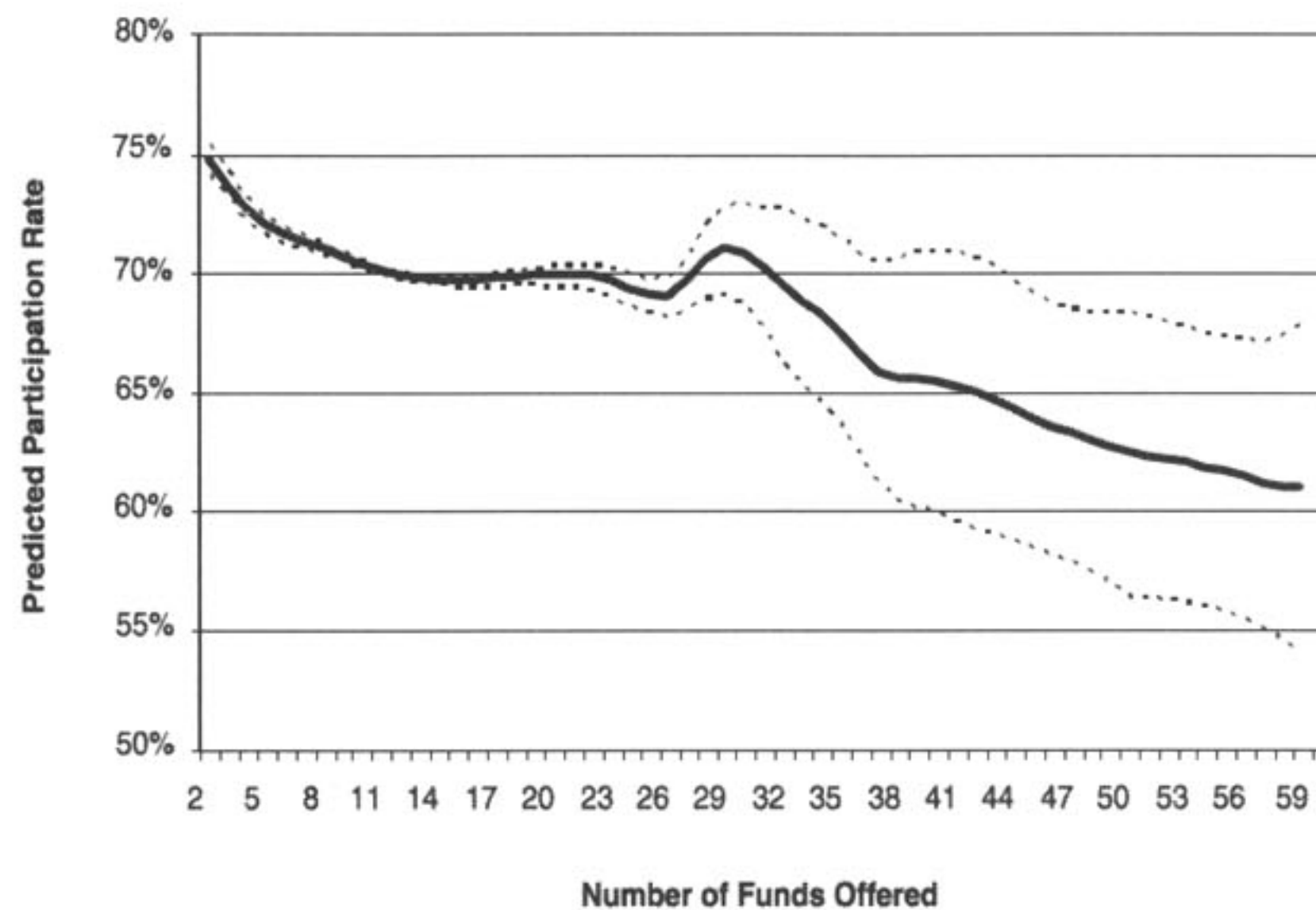
18. See, e.g., John T. Jost et al., *A Decade of System Justification Theory: Accumulated Evidence of Conscious and Unconscious Bolstering of the Status Quo*, 25 POL. PSYCHOL. 881, 912 (2004); Christian S. Crandall et al., *Status Quo Framing Increases Support for Torture*, 4 SOC. INFLUENCE 1, 6 (2009).

19. See Sheena Sethi-Iyengar, Gur Huberman & Wei Jiang, *How Much Choice Is Too Much?: Contributions to 401(k) Retirement Plans*, in PENSION DESIGN AND STRUCTURE: NEW LESSONS FROM BEHAVIORAL FINANCE 83, 87–97 (Olivia S. Mitchell & Steve Utkus eds., 2004).

20. *Id.* at 91. For a fascinating discussion attempting to elucidate this common expression, see Jill H. Larkin & Herbert A. Simon, *Why a Diagram Is (Sometimes) Worth Ten Thousand Words*, 11 COGNITIVE SCI. 65 (1987).

Figure 1: The Relationship Between Participants in 401(k) and Number of Funds Offered

The Relationship Between Participation in 401(k) and Number of Funds Offered



The general direction of the graph, decreasing from left to right, shows the reduction of participation among employees *in any fund* as their choice increased. It should be stressed that all funds offer matching contribution, meaning that employee deposits are matched by equal deposits made by their employer. Therefore, nonparticipation entails foregoing employer investment—leaving money on the table. Beyond the reduction of investment, there was also a reduction in the willingness to invest in equity funds, preferring less risky alternatives. Supposedly, there should be no relation between the number of funds offered and the employees' risk aversion, but it seems that in the background operates a dynamic of remorse aversion. Employees confused by the array of choices were also afraid they would be unable to choose optimally among them, leading them to avoid decisions as well as risks (both creating potential for future remorse).²¹ Both tendencies led to direct monetary loss because the more rewarding options were chosen less often.²² Put simply, complexity of choice harmed the quality of choices made as well as willingness to make a choice at all.

21. The effect of regret-avoidance on choice is large, and it underlies many cognitive biases. See generally Thomas Gilovich & Victoria Husted Medvec, *The Experience of Regret: What, When, and Why*, 102 PSYCHOL. REV. 379 (1995).

22. This is not merely the preference of security over profit, of the type explainable by standard risk aversion. Here, the risk premium is so large that additional explanations are necessary, usually drawn from the behavioral literature. See generally Jeremy J. Siegel & Richard H. Thaler, *Anomalies: The Equity Premium Puzzle*, 11 J. ECON. PERSP. 191 (1997).

B. The Preference for Choice and Its Harm for the Chooser

The previous section examined contractual complexity in the sense of offering a too-large variety of options to consumers, harming their ability to optimally choose the best alternative (subjectively speaking). The emphasis was on the difficulty of comparing among alternatives differing in their structure, or cognitive overload shifting choice from being reason-based to emotion-laden. The common factor so far has been an instrumental objective—finding the most preferred alternative from the chooser's point of view. This section shifts the focus towards choice as a formative process—the advantage gained *by the act of choosing itself*, above and beyond the advantages of a “correct” choice.

Most people share an intuitive judgment that the ability to choose is a good thing, and limitations thereof detract from welfare. Even when the choice is between “insignificant” alternatives, meaning ones whose instrumental contribution is slight, it is often assumed that *making* the choice (rather than having the choice externally forced) is in an individual's interest.²³ A noted exception is when choice is between negative alternatives—that is, choosing between bad and worse. There, most people prefer having the choice made for them, perhaps because it is easier to accept bad news when it is forced than to accept it as something people brought on themselves.²⁴ Although it is tempting to classify the status quo bias under a preference for nonchoice, it is important to distinguish between the cases; choosing the status quo is not the same as avoiding choice altogether.

It may very well be that a person prefers both receiving a variety of alternatives and ending up with the status quo. Some would call this self delusion, since in actuality such a preference does not entail true judgment, but acceptance of the default option *because it is framed as such* through the choice of another agent who set up the options in this way. Even if the default option is preferred not due to its content but merely because of its framing, the individual's preference for receiving an array of alternatives is not negated. The cited studies (and many more) show a common preference for both receiving a list of alternatives (preferably long) *and* choosing the one framed *a priori* as the primary one, usually as the default option. This might sound strange (especially to those trained to assume the rationality of the decision-making process), yet it is prevalent nonetheless. The phenomenon of wanting to examine a variety of alternatives (*preference for choice*) is a common one, and distinct from the

23. See Diana I. Cordova & Mark R. Lepper, *Intrinsic Motivation and the Process of Learning: Beneficial Effects of Contextualization, Personalization, and Choice*, 88 J. EDUC. PSYCHOL. 715, 726–28 (1996). This preference turns out to be so strong that rearranging the alternatives in categories makes them more attractive. The multiplicity of categories creates an illusion of increasing choice, even though the alternatives themselves remain unchanged. See Cassie Mogilner, Tamar Rudnick & Sheena S. Iyengar, *The Mere Categorization Effect: How the Presence of Categories Increases Choosers' Perceptions of Assortment Variety and Outcome Satisfaction*, 35 J. CONSUMER RES. 202, 207 (2008).

24. See, e.g., Simona Botti & Sheena S. Iyengar, *The Psychological Pleasure and Pain of Choosing: When People Prefer Choosing at the Cost of Subsequent Satisfaction*, 87 J. PERSONALITY & SOC. PSYCHOL. 312, 323–24 (2004).

manner in which this variety serves the individual's final objective of choosing optimally among them (*preference among choices*). How much so, and when the preference for choice interferes with the preference among choices, are the questions this section aims at elucidating.

As before, an experimental example might clarify matters. In order to examine the effect of variety on purchase decisions, a tasting booth was placed in an upscale supermarket. Several types of jams were placed in a manner inviting store patrons to pass by and taste to their hearts' content, perhaps purchasing a jar of jam for home use (at a discount). The experiment was conducted in both large and small variety conditions. The large variety was created by placing twenty-four types of jams on the counter, while only six jams were made available in the small variety condition. The number of customers stopping to taste, as well as the number of those subsequently purchasing, were noted. The results are simple and significant: When the tasting booth offered twenty-four choices, the number of shoppers stopping to taste was fifty percent larger than when only six choices were available. Thus, a clear *preference for choice* was witnessed. On the other hand, the number of *purchasers* among those stopping to taste was significantly smaller in the large-variety condition; only three percent of tasters actually purchased one of the twenty-four jams, while thirty percent of those tasting six jams made a purchase. The difference is not only in the percentage of tasters purchasing, but in absolute numbers as well—sales dropped when variety increased despite drawing a larger crowd (more interested customers, but fewer purchasers).²⁵

What is the lesson of this experiment? Insofar as it exemplifies a general phenomenon, there are two effects. First, a large variety attracts a significantly larger number of shoppers to stop and taste. Second, the large variety prevents a purchasing decision, an action that is supposed to mirror the implementation of a preference formed through tasting (or prior to it). This is not a case of consumers attracted merely for the tasting without having a purchase objective, since in that case there would be an increase in the number of tasters without increasing the number of purchasers. That phenomenon may well exist, but is far from sufficient to explain the dramatic drop in the number of purchases made.²⁶ In the previous section, there were other examples of a large variety being detrimental to choice-making, due to cognitive overload. The important

25. See Sheena S. Iyengar & Mark R. Lepper, *When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?*, 79 J. PERSONALITY & SOC. PSYCHOL. 995, 995–1004 (2000).

26. If the results were not so stark, they might be explained away by a selection bias in the experiment's design. Selection bias exists whenever the type of people approaching a large-variety tasting booth (twenty-four flavors) is different from the type of people approaching a small-variety booth (six flavors). Theoretically, the first might be acting out their preference for tasting in itself, not being interested in a subsequent purchase. It may also be that only people truly interested in home consumption approach a small-variety booth. In order to overcome any such effect, the experimenters varied the hours in which the booth operated in each version and studied the demographics of the people approaching the booth in the different treatments. These controls, together with the stark numerical difference observed, strengthen the conclusion that a general phenomenon was observed.

distinction here is that consumers were attracted to the same thing that eventually blocked their ability to form a preference and purchase a jam, slightly reminiscent of the moth being drawn to approach the lamp, only to be burned by its proximity.

It is important not to overreach in interpreting this example. Just as increasing the options does not necessarily benefit the chooser, it is not always detrimental either. In this case, there was a negative correlation between the number of alternatives and the purchase decision, but it is important to note that only two conditions were compared. By examining a larger array of “menus,” differing in the number of alternatives offered in each, a more complex dynamic is apparent. In the beginning, increasing the options benefits choosers due to their ability to switch to a (subjectively) more-preferred alternative. As the size of the menu increases, cognitive overload rises, and the difficulty of making comparisons prevents purchasing decisions.²⁷ It is especially interesting to see that consumers interested in choice may still perceive the provider’s offer of choice as unfair. One study reproduced the standard result of variety as impeding choice, but added the twist of inquiring about fairness. Large variety added to the perceived unfairness of high prices, while not changing reactions to low prices. It is interesting that the author made a recommendation to reduce the number of offers made to consumers though she, as others before her, neglected to factor in that confusion is sometimes a good thing, especially where non-purchase is not an attractive option to consumers.²⁸

Returning to the context of choice, the exceptionally large number of alternatives offered in the typical cellphone contract requires focusing on the difficulty of choice in large-variety contexts. Of course, it is possible that nonpurchasing is different from loss of utility, and there is no way of knowing for sure that shoppers avoiding purchase suffered a loss. Although, there is no way to read minds, the purchase decision expresses an assessment that the product is worth more than its price. A shopper who tasted and bought a jam is seen as increasing his utility compared to his previous, prepurchase situation. This follows directly from seeing him as implementing a preference to shift from one situation to another, presumably more-preferred. A large number of shoppers approaching the tasting booth shows their interest in examining, tasting, and perhaps buying, the jams. The fact that they eventually did not buy, insofar as this was caused by the larger variety placed before them, shows that the number of options detracted from their ability to implement their

27. See Avni M. Shah & George Welford, *Buying Behavior as a Function of Parametric Variation of Number of Choices*, 18 PSYCHOL. SCI. 369, 370 (2007). Some describe this as an advantage of increasing variety up to a satiation point, lack of advantage thereafter up to a regret point, and a disadvantage after that. See Rémi Desmeules, *The Impact of Variety on Consumer Happiness: Marketing and the Tyranny of Freedom*, 22 ACAD. MARKETING SCI. REV. 1, 1–2 (2002).

28. See Sarah Maxwell, *Hyperchoice and High Prices: An Unfair Combination*, 14 J. PRODUCT & BRAND MGMT. 448, 452–53 (2005).

preference between alternatives, making the default option of nonpurchase seem simpler than solving the complex optimization problem they faced (although most consumers probably did not describe their situation in these words).

Whenever simple alternatives bypassing the difficulty of high-variety-choice are present, these could be easily superior to nonpurchase. Simple alternatives thus become more enticing when surrounded by an array of choices, with the status quo bias as one example of this dynamic.²⁹ In the context of the market for cellphone communication, simplicity may be achieved through a choice of options recommended by the provider, recognizable due to advertising, or a preference for simple tariffs over complex ones.

This phenomenon (a preference for choice that harms the chooser) is far from unique to consumer contexts, and affects choosers long after the choice-making process itself.³⁰ For example, job seekers usually examine and compare a large number of alternatives prior to choosing (or finding) a permanent workplace. Apparently, searching too much is problematic here as well—not just “wasting” search costs, but also harming the quality of choice eventually made, as assessed by choosers themselves.³¹

In the job-search context, a difference was found between the objective assessment of choice focused on easily measured parameters (such as starting salary) and the subjective assessment made by the chooser reflecting on her choice and the process leading to it. While a search focusing on maximizing starting salary will achieve that purpose, and usually a larger menu of alternatives will be better, it turns out that those investing more time in the search tend to regret their choice more, and describe the search process more negatively than those limiting themselves to a smaller array of choices.³²

Put simply, the tendency to search long and hard reduces enjoyment from the end result—not exactly the utility maximization that economists hold dear.³³ It is interesting to remember that already in the 1950s, Herbert Simon suggested

29. See Sheena S. Iyengar & Emir Kamenica, *Choice Proliferation, Simplicity Seeking, and Asset Allocation*, 94 J. PUB. ECON. 530, 537–38 (2010); Jeffrey J. Rachlinski, *Gains, Losses, and the Psychology of Litigation*, 70 S. CAL. L. REV. 113, 118 (1996) (explaining how a large variety leads to choice in simple alternatives).

30. A preference for choice even when it does not improve the chosen alternative is not just a human trait. For documentation of the same behavior in animals, see generally A. Charles Catania, *Freedom of Choice: A Behavioral Analysis*, 14 PSYCHOL. LEARNING & MOTIVATION 97 (1980).

31. See Sheena S. Iyengar, Rachel F. Elwork & Barry Schwartz, *Doing Better but Feeling Worse: Looking for the “Best” Job Undermines Satisfaction*, 17 PSYCHOL. SCI. 143, 143 (2006).

32. See generally BARRY SCHWARTZ, *THE PARADOX OF CHOICE: WHY MORE IS LESS* (2004).

33. See Barry Schwartz et al., *Maximizing Versus Satisficing: Happiness Is a Matter of Choice*, 83 J. PERSONALITY & SOC. PSYCHOL. 1178, 1193–94 (2002) (noting that maximizers were less satisfied and more sensitive to regret than satisficers); HERBERT A. SIMON, *MODELS OF MAN: SOCIAL AND RATIONAL* 261 (1957) (noting that organisms do not adapt well enough to “optimize”). But see Dalia L. Diab, Michael A. Gillespie & Scott Highhouse, *Are Maximizers Really Unhappy? The Measurement of Maximizing Tendency*, 3 JUDGMENT & DECISION MAKING 364 (2008) (criticizing the shortcomings of Schwartz et al.’s study).

that psychological realism dictates that the economics profession should emphasize satisficer-oriented models rather than optimizer-oriented ones.³⁴ Implementing the findings showing that satisficers reach higher levels of utility, leads to a conclusion that optimizers, aiming at high utility levels, should adopt a strategy of satisficing as well, but one aimed at measurable attributes such as pay (in employment search), or price (in product search). Thus, true optimization is achieved by aiming for a known benchmark, and stopping the search once this is achieved. Optimizing and satisficing should thus be understood as complimentary (rather than contradictory) routes to maximizing welfare.

These types of subjective assessments affect objective criteria as well—including for employers. Job satisfaction and salary satisfaction during employment are closely related to employees' subjective assessment of the negotiation process prior to employment and affect employee morale (which is related to their investment in quality of work), as well as their willingness to stay at the workplace rather than seek alternative employment (forcing the employer to find and train new employees).³⁵

The tendency to prefer a large variety despite its harming enjoyment of the chosen alternative may be explained as the result of a two-stage process: First, one chooses a menu of alternatives, thus employing the *preference for choice*. Subsequently, one chooses among the alternatives on the menu chosen in the first stage, thus employing the *preference among choices*. The second stage is subject to biases when the variety is too large, but this affects first-stage choice only insofar as these biases are salient while choosing among menus, and it seems humans are imperfect at such anticipation and find it difficult to bring themselves to employ protective measures.³⁶ When the separation between stages is strong, meaning the consumer is focused on variety when choosing a menu (such as when choosing to approach the jam-tasting booth), her difficulties later on (in choosing among jams) are an insufficient incentive to plan ahead. This is especially true when the corrective response is limiting the supply of choices to which she exposes herself or choosing a smaller menu in order to facilitate easier choice later on.³⁷

34. See SIMON, *supra* note 33, at 261.

35. See Jared R. Curhan, Hillary Anger Elfenbein & Gavin Kilduff, *Getting Off on the Right Foot: Subjective Value Versus Economic Value in Predicting Longitudinal Job Outcomes from Job Offer Negotiations*, 94 J. APPLIED PSYCHOL. 524 (2009), available at <http://ssrn.com/abstract=973825>.

36. See, e.g., Alexander Chernev, *Decision Focus and Consumer Choice Among Assortments*, 33 J. CONSUMER RES. 50, 57–58 (2006).

37. See Emir Kamenica, *Contextual Inference in Markets: On the Informational Content of Product Lines*, 98 AM. ECON. REV. 2127, 2142 (2008) (noting the tendency of consumers to focus on the stage in which they currently operate, and ignore or severely discount the importance of future steps they will need to take).

III

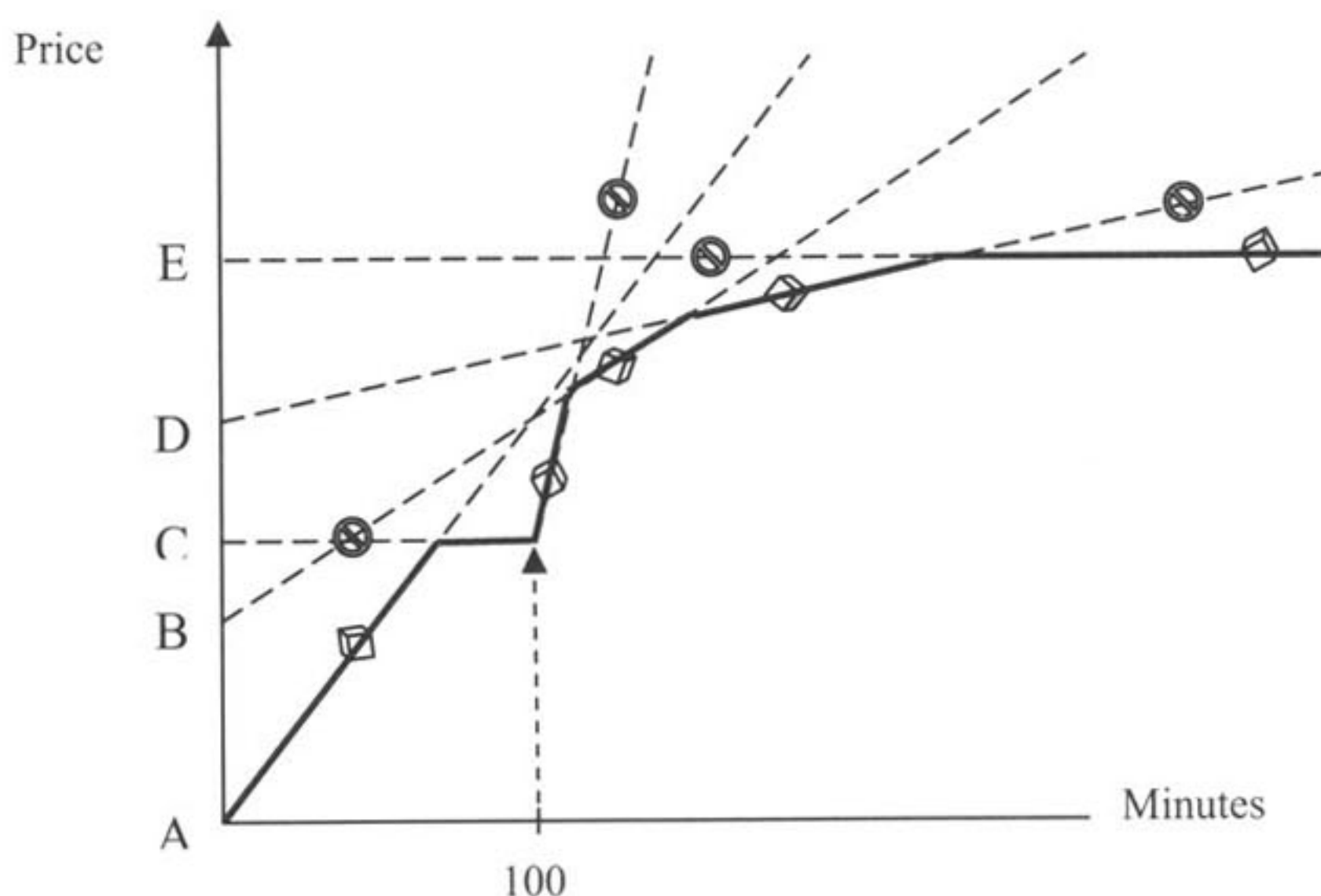
IMPLEMENTATION TO THE CELLPHONE MARKET

In the cellphone context, what happens to the consumer once she approaches the point of sale (whether physically or via telephone or internet) and stares at the multitude of available handsets, and plethora of alternative calling plans? The first impression is of much choice, and confusion probably sets in immediately thereafter. The choice of handsets is guided by subjective preference and is emotion laden. (Which is better, large or small handset? Black or red? How important is a five-megapixel camera relative to a three-megapixel one? Is it better to have a small and convenient handset or a good keyboard for e-mail?) Rather than assess the full array of dimensions along which consumers must classify their preferences and compare to market offerings, the focus here will be on the calling plans, independent of individual differences and tastes regarding handsets and their many attributes. Choice of calling plans is simpler to analyze, as consumers generally have a single (and common) optimization objective—minimizing expected payment to the cellphone provider. With regard to this common objective, it may be possible to directly assess “better” and “worse” choices, allowing assessment of the choice process and the incentives underlying it.

In order to minimize costs, the consumer must anticipate future use of her phone, since most calling plans provide a menu combining fixed and marginal prices (monthly payments and per-minute or per-second price), or a mixed bundle of such menus accounting for multiple uses (text messages, internet use, and so on). But the consumer generally does not know in advance the total cost of the cellphone contract. If she knew how much she would use the phone in the future, and when, she might be able to compute the ultimate prices of the different alternatives in order to find her optimal contract, given personal usage. Even if a service representative were willing to compare plans for her, knowing future use is difficult.

Even a customer with usage history from another cellphone provider, or one changing (or “upgrading”) plans, is hard pressed to predict whether future usage will be similar to past usage, and she must take into account the effect of the calling plan itself on usage incentives. For example, moving from a plan where price per minute is high to one where it is low is likely to increase phone usage. Buying a bundle of “free minutes” incentivizes the consumer to use them, or at least dissipates any monetary incentive to limit usage (until the upper bound is approached). Here, the length of contract is extremely important, and is usually quite long. This is true either due to explicit commitments consumers accept in their contracts (minimum terms), or due to consumers’ perception that switching providers is an expensive endeavor (time and effort-wise). The following graph shows five hypothetical calling plans, allowing visualization of the difficulties of optimization.

Figure 2: Illustration of Five Hypothetical Calling Plans



The horizontal axis shows the number of monthly minutes, while the vertical axis shows monthly price. The dotted lines show alternative calling plans, beginning with a fixed per-minute price ("A" the steepest line), through increasing fixed monthly payments reducing subsequent per-minute price ("B", "D", and "E"). Moderate angles show a lower marginal (per-minute) price, while the higher vertical-axis origin shows a higher fixed monthly payment. Additionally, one alternative shows a step-function (that is, a fixed monthly payment for a bundle of "free" minutes) and a steep (high) price per minute thereafter ("C"). Note that plan "E" combines elements of both kinds—essentially a high fixed monthly payment in exchange for an unlimited amount of "free" minutes (shown by the horizontal line signifying a marginal price of zero). Simply put, the graph shows five calling plans the consumer might choose from. Presumably, the consumer will choose the cost-minimizing one, given her personal-usage profile.

The assumption that the consumer chooses optimally means that she will always be on the inner envelope of available alternatives, shown here by the solid line. As can be seen, this line is an amalgam of the different plans, so that as usage increases, the plan employed changes to minimize cost. Thus, an optimizing consumer begins with plan "A" when usage is low, switching to plan "C", "B", "D", and finally "E", which is cheapest for the highest-volume consumers. In the diagram, squares signify optimal plan choices given consumption, while circles show where a consumer would be using the wrong plan, paying more than necessary to allow for their chosen usage level.

Taken in context, optimization seems like a very strong assumption indeed, especially when noting that the number of plans offered can be large, future

consumption uncertain, and optimization difficult. Empirical studies often rely on this (implicit) assumption that consumers choose their plan optimally, with no discussion of its appropriateness as a description of reality or as a basis for policy recommendations.³⁸

The squares indicate optimal plan choices given different levels of phone usage, while the circles indicate suboptimal choices the consumer should avoid.³⁹ Assuming consumers are able to understand the different plans and to choose optimally requires that they be able to draw such a graph based on the details garnered from provider presentations (or other source) *and* correctly predict future usage. It is far from obvious that the standard consumer is able to carry out such an optimization exercise, especially taking into account that in real-world situations, the appropriate graph includes many more than five alternatives and usage is usually unstable over time (although commitment to a given plan is). Importantly, the graph presented here includes only the simplest types of calling plans (based on minutes used), and excludes reduced prices to select numbers (friends and family) or during select times (night and weekends).

Beyond the difficulties comparing plans and predicting usage, the graph applies only to voice calls. To add prices for text messages, a three-dimensional graph would be necessary, including price per message as well as bundles of messages (similar to bundles of minutes here). Since real-world application includes internet usage, downloads, and more, the required graph is multidimensional. In the example above, the necessity of presenting a printable graph requires two-dimensionality, but including other cellphone attributes shows that the optimization problem for n attributes requires $n + 1$ dimensions. Therefore, an assumption that the consumer optimizes when choosing a multi-dimensional calling plan is a strong assumption indeed, and making such an assumption the basis for real-world policy recommendations (as some scholars do) is problematic to say the least.

Based on the psychological evidence above, it seems cellphone providers have a clear interest in keeping price complexity high. As consumers are less able to compare among providers, competitive pressures that providers face weaken, at least on the price-reduction dimension. Simply put, complexity acts as a mechanism to reduce price competition, leaving other competitive dimensions intact. These dimensions include number and type of handsets, branding and advertising (creating customer goodwill or “feeling good” when thinking of one provider compared to others), customer service, quality of

38. See, e.g., Meghan R. Busse, *Multimarket Contact and Price Coordination in the Cellular Telephone Industry*, 9 J. ECON. & MGMT. STRATEGY 287, 297 (2000) (“Assuming that a customer chooses the plan that minimizes costs for his or her expected level of usage, the effective price schedule a customer faces is the lower envelope of a menu of two-part tariffs offered by the carrier.”).

39. If we count the available plans from the origin upwards, this means that as the consumer’s monthly phone usage increases, he should switch from the first plan to the third, then to the second, fourth, and fifth—switching each time his plan lies above another available alternative.

reception, and more. Of course, complexity may be present in nonprice dimensions as well.⁴⁰

Some of these attributes are at least as difficult to compare as final prices, since the consumer is hard pressed to assess quality of service prior to her need to find a service center and stand in line there, or prior to experiencing the waiting time until the automatic call center directs her call, or assessing how many representatives she must speak to before her problem is resolved. Still, price is a very salient feature, and is prominent in most consumers' purchase decisions. Absent a clear parameter for cellphone provider comparison, every provider can advertise in order to create an impression of low prices (employing "sales" and "special offers"), as well as make nonprice dimensions more prominent, aiming at product differentiation in order to achieve a superior position in the branding game. Lack of price competition is not lack of competition. Still, price competition has a direct and stark effect on provider profitability, and weakening it is a primary strategic business interest.

Some may argue that in a competitive market, businesses will find it in their interest to offer a simple price structure in order to signal to the consumer the advantages they offer.⁴¹ The basic argument is as follows: a provider seeking to differentiate itself and attract consumers might offer a simple price structure to signal that it offers value for money—that is, a good deal. *If* consumers understand the signal in this way, and *if* competition between providers evolves to push other providers to situate themselves similarly to the first provider, a competitive solution arises where the providers offer their products on an identical, easy-to-understand price structure; meanwhile, providers obfuscating their prices are shunned by consumers. In short, competition may lead to price simplicity as long as the driving force of the model is consumer preference for simple price structures. In other words, insofar as consumers prefer such contracts, providers have an incentive to offer them. Of course, in reality, consumers may not understand such signals in this way, as they may see complex structures as preferable to simple ones due to their (theoretical) ability to optimize, or see the multitude of offerings as welcome variety—the *preference-for-choice* dynamic discussed above. When consumers do not punish

40. See, e.g., Paul A. Herbig & Hugh Kramer, *The Effect of Information Overload on the Innovation Choice Process: Innovation Overload*, 11 J. CONSUMER MARKETING 45, 46–48 (1994) (arguing that fast-paced innovation creates effects similar to those of cognitive overload). Since the cellphone market is highly innovative, complexity appears in consumer decisions not only due to price obfuscation, but also through the frequent technological changes in what a cellphone actually is able to do, essentially changing the product in question.

41. See Alexia Gaudeul & Robert Sugden, *Spurious Complexity and Common Standards in Markets for Consumer Goods* 23–27 (Ctr. for Competition Policy, Working Paper No. 07-20, 2007), available at <http://ssrn.com/abstract=1038461> (noting how simplified prices are well received by consumers).

providers for offering variety in calling plans, there is no reason to expect simplicity in pricing.⁴²

Most cellphone markets are highly concentrated, with usually as few as three or four providers serving nationwide customers.⁴³ Such markets are characterized as “oligopolistic” (few sellers), and operate differently than markets where many providers exert competitive pressure on each other. The most striking difference is that in an oligopolistic market, one provider’s action is observed directly and quickly by other providers, and they may respond accordingly. Thus, a cellphone provider advertising a reduction in prices attracts consumers, but simultaneously creates a strong incentive for its competitors to respond in kind, to avoid seeming more expensive. Contractual complexity of the sort present in the cellphone market makes comparison between the providers’ prices difficult, since there are many options and prices to compare. Since most price schedules are nonidentical across providers, even knowing which provider is the cheapest is a nontrivial endeavor. Since most consumers are unable to precisely assess their future usage patterns, a simple comparison of current fees against alternative offers is impossible.

To illustrate, assume one of the providers offers a simple price schedule, such as a given unit price (per minute or per second) that is unchanging over time and amount of use. The average consumer will not know if such an offer is better or worse for him than the complex bundle offered by a competing provider. If the consumer views simplicity as a signal of quality (not necessarily a realistic assumption), other providers may follow suit and offer similar simple prices. Having done so, the consumer may now choose on the basis of easily compared prices, leading the providers to compete by lowering the price to marginal cost. Even ignoring the high fixed costs associated with large-infrastructure industries, cellphone providers in such a world would find themselves sharing the market at low prices. Assuming similarity in provider costs, this would simply create price competition with low profit margins, with little change in market shares. This may be excellent for consumers, but not as attractive a prospect for cellphone providers.

Of course, there is nothing new here; this is what competition is all about. But in an oligopolistic cellphone market, the providers have a better alternative available. The first provider, knowing that moving towards price competition

42. See, e.g., Stephano DellaVigna & Ulrike Malmendier, *Contract Design and Self-Control: Theory and Evidence*, 119 Q.J. ECON. 353, 393–94 (2004) (generally examining how providers react to consumers’ cognitive biases).

43. The U.S. cellphone market is served by four national providers (in addition to other local and niche players). This is characteristic of cellphone markets worldwide due to exceptionally high fixed costs in the industry. See FED. COMM’NS COMM’N, THIRTEENTH ANNUAL REPORT 25–30 (2009), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-09-54A1.pdf; Jeremy T. Fox, *Consolidation in the Wireless Phone Industry* 15–17 (NET Inst., Working Paper No. 015-13, 2005) (calculating the market concentration (HHI) in the U.S. cellphone market at over 6000, even before the Nextel–Sprint merger); see also Patrick Bajari, Jeremy T. Fox & Stephen Ryan, *Evaluating Wireless Carrier Consolidation Using Semiparametric Demand Estimation* 5 (Nat’l Bureau of Econ. Research, Working Paper No. 12425, 2006).

will only cause others to do the same, will not count on such a strategy to create much of a profit. Any advantage it gains over its competitors will be short-lived, and will eventually lead to maintaining current market shares—but with lower profits. In competitive markets, the multitude of competing companies creates a prisoners' dilemma among them. They are all better off maintaining high prices, but each on its own prefers to be the only one deviating by offering discounts and attracting customers. With many companies, each has a small effect on the market as a whole; thus their incentive is to act unilaterally. This incentive grows when realizing that if they do not act quickly, another company will do the same, but sooner.

The small number of large competitors in most cellphone markets allows for “solving” the prisoners' dilemma, as the effect each provider has on the market is large, and long-term interaction creates indefinite repetition of the game. The providers are familiar with each other, and understand that their common interest in maintaining high prices dominates any interim profits a first-mover might make.⁴⁴ In the economic (and antitrust) literature, this dynamic is known as “oligopolistic coordination” or “tacit collusion,” but in most jurisdictions, there is nothing illegal about it.⁴⁵

Oligopolistic coordination in cellphone markets may manifest itself in two (intertwined) ways: the structure (and variety) of contracts offered, and the price in easy-to-compare options. Complex contractual structure adds to the difficulty of comparisons among providers, leaving the consumer befuddled about which offer is best. Despite this, some of the prevalent offers are relatively simple, such as constant price per minute, or fixed price per bundle of minutes. Of course, given the variety of cellphone uses, prices per text message or internet usage complicate even the simplest calling plans. Still, some offers are comparable and, in these, simple price competition abounds. Oligopolistic coordination prevents prices on these options from dropping too much (from the providers' point of view), as well as maintaining the multitude of more-complex offers in the market.⁴⁶ Had competitive pressures been higher, one of the providers might try to show its advantage over others by offering something along the lines of “any price schedule offered by my competitors will be

44. A similar dynamic exists between U.S. cellphone providers, in a slightly more-complex context. There, each geographically separated market allows competition between local providers; but since some local providers are branches of national providers, multimarket contact exists between some but not all providers. The national providers can use strategies unavailable to the local ones, namely, responding in one market to actions initiated in another. *See generally* Philip M. Parker & Lars-Hendrick Röller, *Collusive Conduct in Duopolies: Multimarket Contact and Cross-Ownership in the Mobile Telephone Industry*, 28 RAND J. ECON. 304 (1997); Busse, *supra* note 38.

45. *See, e.g.*, HERBERT HOVENKAMP, *THE ANTITRUST ENTERPRISE: PRINCIPLE AND EXECUTION* 212 (2005).

46. There are good reasons to think complexity would not be competed away, even if the cellphone market were perfectly competitive. If consumers value choice and take variety as a proxy for it, providers will compete to offer more calling plans—resulting in consumer confusion. If consumers are unaware of the resulting confusion, they have no reason to leave a provider offering them what they perceive to be a good—variety. This issue will be discussed in more detail below in Part IV.B.

matched at an x -percent discount.” Such an offer would create price dominance for the offering provider, branding it as the price leader. Obviously other, nonprice, dimensions would still be up for grabs.⁴⁷

Despite the apparent allure of such an offer, it would create a downward spiral in prices that would probably harm the offering provider along with its competitors. While provider *A* offers a discount relative to provider *B*, the latter would lower prices so that provider *A* would have difficulty meeting them and maintaining profitability. Price competition would increase, lowering provider profits across the board. Still, even when such dynamics are absent from the cellphone market, this need not suggest that the market is not competitive, as competition on nonprice dimensions (including handsets, service, branding, special offers and promotions, proprietary services, and so on) are important as well.

The question whether a certain cellphone market is competitive does not lend itself to an easy answer. The different dimensions examined might lead to conflicting results, with nonprice dimensions showing much more activity and vigor (especially apparent in advertising) than direct price competition. The providers’ interest in maintaining current price ambiguity, raising switching costs, and reducing consumer churn, is an important factor, though not the only one.⁴⁸ On the other hand, it is also important to consider the opposite effect, whereby easily compared prices facilitate tacit collusion as providers can more-easily adapt to each other’s prices. Providers operate in a complex environment, balancing between their interest in simple pricing structures allowing them a simple strategy of matching prices offered by other providers (facilitating tacit collusion) and their interest in price obfuscation making consumer comparison-shopping more difficult (reducing competitive pressure). In this context, price obfuscation also allows for creating hyperchoice scenarios in which consumers choose suboptimally, thereby increasing provider profits. Suboptimal choice of calling plans is a common interest among providers, thus even without explicit collusion, an equilibrium can emerge whereby consumers are offered a multitude of alternatives creating a façade of healthy competition while actually

47. Of course, this article focuses on price (for simplicity’s sake), but branding and quality differentiation are no less important. There is no need to assume consumers are drawn to the cheapest provider, although this is the starting point for many.

48. Other issues require discussion, such as the control cellphone providers (those selling transmission) might exert on other markets, such as sale of handsets, accessories, or the transmitted content. There are reasons to doubt the necessity of these markets being catered to by the same businesses. Some see this integration as harmful to potentially competitive markets, since high concentration in the transmission market allows providers to exert market power in the accessories market, the content market, and others. See, e.g., Tim Wu, *Wireless Carterfone*, 1 INT’L J. COMM. 389, 389–91 (2007). Compare Scott Wallsten, *Wireless Net Neutrality?* (Progress & Freedom Found., Progress Snapshot Paper No. 3.2, 2007), available at <http://ssrn.com/abstract=976749> with Babette Boliek, *Net Neutrality Regulation in the Mobile Telecommunications Market: A Cautionary Tale from the Era of Price Regulation* (Third Annual Conference on Empirical Legal Studies, Working Paper, 2008), available at <http://ssrn.com/abstract=1129517> (arguing that regulation in the cellphone market is unnecessary due to competitive pressures).

benefitting providers. Tacit collusion is thus facilitated both by price-clarity (allowing ease of matching competitors' plans) and by price-obfuscation (allowing for easier consumer exploitation). Specific circumstances and consumer attributes determine which of the confounding effects is stronger.

To summarize the discussion so far, contractual complexity allows cellphone providers to maintain conditions where comparisons among them are difficult, thus reducing the competitive pressure to lower prices and sacrifice profitability. The main point so far is the recognition that the plethora of calling plans and methods of computing cellphone prices hinders one of the most basic driving forces of healthy competition—comparison of prices by consumers. This complexity remains intact due to an interaction between cognitive limitations of human beings facing the choice between cellphone providers and calling plans, and providers' interest in lowering competitive pressure—balancing their unilateral interest in attracting customers with their common interest in reducing transparency in the market. The consumers, on the other hand, do not contribute to the abolishment of complexity mainly because its base, the availability of multiple options to choose from, is considered a good they value highly. The attractiveness of variety in the first stage dominates the difficulties stemming therefrom in the second stage of actual comparison. In other words, it seems consumers are interested in the complexity providers manufacture for them, even if they are eventually harmed by it, and often complain later on.

IV

CONTRACTUAL COMPLEXITY AS A VEHICLE FOR DISCRIMINATION AMONG CONSUMERS

Contractual complexity does not affect all consumers in the same way. Offering a variety of cellphone contracts allows the provider to discriminate between classes of consumers according to their willingness to pay (WTP) and to maximize profits from each class of consumers. The advantage the provider gains from differentiating offerings is its ability to demand a price closer to the consumer's subjective valuation without offering its other customers the same price. Up to now, this article has assumed the provider offers a constant price per minute. If it were able to personalize prices, a provider would gladly charge high-valuation consumers more than it charges low-valuation ones, with discounts going only to the latter (who need to be enticed into the market. Since directly knowing another person's valuation is difficult (even our own is not always clear to us), a technique of allowing consumers to sort themselves is helpful here.⁴⁹

49. In economic parlance, this is referred to as "second-degree price-discrimination." See, e.g., JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 142–44 (MIT Press, 1988). The term "discrimination" should not be construed negatively, but as a descriptive term denoting consumers being charged according to their varying willingness to pay for the product, rather than a fixed, uniform price. One of the common methods is the practice of retailers selling some products in two distinct types of packaging—small quantities and "family-size" larger packages. The first cost less, but the per-

A simple example will illustrate: assume that a minimum of 100 minutes per month is necessary for the ownership and operation of a standard cellphone. Further assume that 100 consumers exist, differing in their WTP, such that consumers range from the least eager buyer willing to pay at most \$1, to the most eager buyer willing to pay up to \$100 for the same minimum bundle.⁵⁰ Denote the consumers number 1 to number 100 respectively. All consumers view the first cellphone minutes, those changing their status from nonusers to cellphone users, as the most important ones; and all would buy extra minutes only at a lower price. Thus these consumers exhibit “diminishing marginal utility,” a standard assumption in most applications.

In order to keep the example simple, assume the next hundred-minute bundle (moving from 100 to 200 minutes) is worth exactly half of the first bundle (moving from nonownership to cellphone-user status). The next bundle (moving from 200 to 300 minutes) is worth half of the second, and so on. Thus, the model exhibits consumers identical in their diminishing marginal utility, but different in their underlying preferences for cellphone use.

A profit-maximizing provider will choose a price balancing the income generated by high prices (from those willing to pay) with the deterrent effect on consumption (of those forgoing cellphone use, or reducing it, due to its cost). Assume for now that the marginal cost of providing an additional minute of calling time is relatively small, and does not constrain pricing at this point. If the provider charges \$1 per minute, it will sell one 100-minute bundle to the highest-valuing consumer (number 100) and none to other consumers (assuming only bundles are sold). If the provider reduces the price to \$0.80 per minute, it will sell 20 bundles, to consumers 81 through 100. Reducing price further, to \$0.40, will allow the sale of 60 bundles to consumers 41 through 100, as well as 20 additional bundles sold to consumers 81 through 100 (who value the second bundle at half the first, here \$0.405 to \$0.50, respectively). A profit-maximizing provider will take into account both influences of price reductions (as well as covering costs, which this example assumed were a nonbinding constraint). The final price will be chosen accordingly, as well as by competitive pressure that will be assessed shortly. Consumers with a high valuation (willing

unit price is higher. There, the purpose is attracting consumers interested in large quantities, but requiring a discount to consummate the purchase. The basic idea is that of diminishing marginal utility. All would pay a high per-unit price for the first package, but only “families” would pay much at all for the second. The larger size is in essence a bundle of an expensive first package, together with a cheap second package—averaging a lower per-unit price than the smaller (first only) package.

Some argue that these pricing tactics can also be used to mask a deeper-rooted “standard” discrimination, on the basis of race, gender, and other “suspect categories.” Such results may occur even if the seller had no such intention, as when social groups have different characteristics—buying patterns, preference for credit versus cash, access to financial instruments, etc. See generally Jonah Gelbach, Jonathan Klick & Lesley Wexler, *Passive Discrimination: When Does It Make Sense To Pay Too Little?*, 76 U. CHI. L. REV. 797 (2009).

50. Willingness to pay is obviously not a perfect measure of the product’s importance, as ability to pay comes into play as well. Still, willingness to pay expresses the consumer’s readiness to divert money away from other products and devote his buying power to the cellphone contract.

to pay more for cellphone minutes) directly benefit from the existence of those with low valuation, since in order to attract the latter, the provider reduces prices to the former as well.

In order to separate between types of consumers, the provider could offer two bundles of minutes: a basic package, those first 100 minutes, at \$0.50 per minute, and a separate package of 200 minutes at \$0.40 per minute. This will lead customers 61 through 100 to purchase the large package, while customers 51 through 60 will purchase the smaller one.⁵¹ Compare this to the fixed price of \$0.50, in which customers 51 through 100 purchase 100 minutes each, or compared with a fixed price of \$0.40 per minute in which customers 41 through 80 purchase 100 minutes each, and customers 81 through 100 purchase 200 minutes each. It is easy to see that the provider profits more from offering contractual variety—that is, a different price per minute in each bundle—than any fixed price it might possibly choose.⁵² In this case, a fixed price of \$0.50 per minute will generate revenue of \$2500, a fixed price of \$0.40 will bring in \$3200, and combining both offers (\$0.50 in the 100-minute bundle and \$0.40 in the 200-minute bundle) will raise revenue of \$3700.⁵³

Although the numerical example is merely illustrative, it can be stated generally that whenever the provider increases contractual variety, it is able to attract additional consumers while limiting loss from those who would otherwise pay a higher price. It is not necessary for the purposes of this article to continue elaborating the different types of contracts and the choices a profit-maximizing provider might make. It is important, on the other hand, that up to this point, consumers were differentiated only according to their willingness to pay for voice calls, and within a constrained framework at that. By considering the much-richer reality of consumers buying not only in hundred-minute

51. To see why, note that the consumer will purchase the utility-maximizing bundle, that is, the one creating the largest difference between his valuation and the price charged. The 100-minute package is better than none at all to all consumers valuing the average minute at higher than its \$0.50 price, and those are consumers 51 through 100. The second package will be purchased only by consumers increasing their welfare even more. Buying the larger package reduces the price of the first 100 minutes as well (from \$0.50 to \$0.40 per minute). In order to calculate the threshold above which consumers will prefer the larger package, we compare consumer welfare (CS) obtained by the purchase of each package, with x denoting the consumer's valuation per minute according to the following formula:

$$CS(II) > CS(I) \Leftrightarrow 100(x - 40) + 100\left(\frac{x}{2} - 40\right) > 100(x - 50).$$

In the first package (on the right-hand side), the consumer obtains 100 minutes, valued at x and costing \$0.50 each. In the second (left-hand side), 100 minutes valued at x , and 100 additional minutes, valued at $x/2$ (due to diminishing marginal utility)—all costing \$0.40. Solving the inequality shows that the second package generates more consumer welfare only when x is above 60; in other words, consumer 61 and above will purchase the larger bundle of minutes.

52. See generally Lars A. Stole, *Price Discrimination and Competition*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 2221 (Mark Armstrong & Robert H. Porter eds., 2007).

53. From the provider's perspective, in the first case it sells 100 minutes each to 50 consumers at \$0.50 per minute. In the second case, it sells 100 minutes to 60 consumers, with 20 of them purchasing 100 extra minutes, all at \$0.40 per minute. In the third case, 40 consumers purchase the 200 minute package at \$0.40 per minute, while 10 consumers purchase 100 minutes at \$0.50 per minute.

bundles, and characterized by a differently shaped marginal-utility function, it becomes apparent that there exists a fertile ground for additional contracts to differentiate consumers further. Additionally, cellphones provide access to text messages, video calls, media content, e-mail, and Internet access, allowing contracts to differ not only along the price dimension, but along many other dimensions as well. Each of these dimensions allows for further contractual variety.

Offering contractual variety will bring each consumer to seek out her own optimal offer, and in her choice, she signals to the provider information about her subjective valuation, which was information the provider previously did not possess. The consumer's choice, then, is the method by which the provider gains the information necessary to offer a "personalized price" that maximizes profit. The provider creates contractual variety knowing that consumers will differentiate themselves, thus allowing it to offer discounts to attract some consumers without lowering prices for others.

If cognitive load did not limit consumers' ability to actually choose their optimal contract, and no other cognitive biases existed, then adding additional contracts could only help consumers. A study examining the utility providers' gain from enlarging contractual variety showed that a relatively small number of alternatives were sufficient to extract most of the potential profit from standard consumer sorting.⁵⁴ Given the cost of servicing different contracts (in addition to advertising and customer service), the provider would prefer to limit variety in calling plans. Here, the ability to differentiate consumers is beneficial to the provider, but not due to the sorting and discrimination alone. The main effect is contractual variety making comparison among plans and providers more difficult, thus limiting optimal consumer choice-making and lessening competitive pressure. Beyond that, there are two additional forms of differentiation—according to customer seniority and according to customer sophistication.

From the cellphone providers' point of view, there are good reasons to offer new customers low prices, while they are comparing offers from competitors and considering which network to join. There are equally good reasons to hope (and even expect) that existing customers will stay "loyal" to the provider even at higher prices.⁵⁵ Along the same lines, if there are customers who lose their bearings in the thicket of multiple offers, there is no reason to offer them the same price offered to those investing time and effort to optimize their choice of cellphone contract. Such price discrimination allows higher profitability to

54. See *infra* note 73.

55. "Customer loyalty" is a common expression and important commercial goal for sellers. Still, it is important to bear in mind that "loyalty" here is merely a factual description of customers continuing their commercial dealings with the provider even when short-term gains are to be had from switching suppliers. Such loyalty could stem from emotional aspects and identification with the provider as a communal entity, but also from high switching costs (pecuniary or psychological) that consumers avoid by remaining with one provider over time.

providers engaging in it, but in a competitive market, this kind of discrimination is commonly assumed to be too difficult to maintain. The characteristics of the cellphone market allow discrimination to persist, and contractual complexity is an especially effective vessel by which to maintain this condition.

A. Discrimination Between New and Existing Customers

The cellphone market is characterized by consumers staying with their chosen provider for a relatively long time. There are several reasonable, objective reasons for this phenomenon: switching costs are high; and, although lower wherever cellphone-number portability has kicked in, there are still information and administrative costs to comparing among providers and making a transition. The effort involved begins not with the transition itself, but at the stage where the consumer *considers* a transition, and includes finding information about competitors, comparing the various offers, and accounting for the inconvenience of dealing with the issue altogether. The issue of cognitive cost is relevant here as well.⁵⁶

When a customer considers a transition among providers, he must invest cognitive effort in comparing alternatives, a cost spared only when choosing to “stay put” and avoid deliberation. In this respect, staying with his present provider is the default option, and the status quo bias is relevant here as well. All this comes before the transition itself, which requires effort of the type many abhor, beginning with waiting for service representatives on automated phone systems, continuing through the necessary paperwork, and eventually following up on bank statements to ensure the new payments include no more than what the service representative promised. The more complex the contract and the larger the number of alternatives compared, the harder the task of choosing optimally and the more difficult it is to ensure that oral promises at the point of sale are reflected in the bill arriving much later. When each provider offers a different contractual framework, how can the consumer know which offer is really the best for him? Contractual complexity can thus be viewed as a strategy to increase switching costs between providers, so that existing customers choose to stay put and settle for the offers made at their existing provider.

Beyond that, the structure of most offers requires commitment to enjoy lower prices, either through minimum-term calling plans or through purchasing the handset itself in installments. Consumers in their “commitment period” are not free to move to a provider making them a better offer, so they will usually not search out information regarding alternatives. It is important to note that switching costs in the cellphone market are mostly contractual; they stem from the provider’s strategic choice to offer a long-term binding contract, and the customers’ acceptance of such offers.

56. See *supra* Part II.

Long-term commitment in itself does not necessarily harm consumers. A rational consumer, committing to remain with a provider for a specified time, will take into account the length of that period before signing the contract. Comparison among providers will be according to price as well as length of required commitment and the probability distribution of future changes in consumption. Such changes are important, and there are many good reasons to think consumers tend to underestimate them, believing that the future will be similar to the present.⁵⁷ In a fully rational model, the consumer will take into account that once he signs up with a provider, it will exploit his inability to switch away; but this dynamic is anticipated and compared across providers.⁵⁸ Contractual complexity makes such comparisons difficult, which in turn increases the difficulty of balancing present and future prices and understanding the way different alternatives play out along this dimension. Yet its effect goes further still.

Offering a large variety of calling plans allows providers to attract new customers without offering existing ones the same terms, and to do so in a way that makes the differences inconspicuous. Lacking the ability to easily compare offers, new customers may be enticed while minimizing outrage (or mere frustration) on the part of existing ones. Furthermore, when an existing customer becomes free of any obligation to stay on with the provider, and turns to compare offers, he may be offered a calling plan superior to his current one so that the effort and inconvenience of transitioning to another provider are spared. Cellphone providers could achieve the same result through a simple discount, but the context of contractual complexity allows for the possibility that here, too, the customer will choose suboptimally, leaving the provider with a higher profit than when prices are clear. Furthermore, using such calling plans allows for tailoring a solution optimal to the customer's current consumption profile, but not necessarily to future changes in phone usage. In a highly dynamic environment such as the cellphone market, optimality today does not ensure minimal price later on. When the customer stays for long periods on the

57. This is a well-documented trait most people share and is relevant in a broad array of future-affecting decisions. Simply put, when someone attempts to predict his future preferences and choices (or make a current choice relying on such prediction), he is overly influenced by his current state, and underestimates the change in his own preferences over time. See generally George Loewenstein & David Schkade, *Wouldn't It Be Nice? Predicting Future Feelings*, in WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY 85 (Daniel Kahneman, Ed Diener & Norbert Schwarz eds., 1999); George Loewenstein, Ted O'Donoghue & Matthew Rabin, *Projection Bias in Predicting Future Utility*, 118 Q.J. ECON. 1209 (2003) (providing an economic model and an assessment of the problematic case of choosing today to maximize future utility).

58. When consumers are rational, perfectly considering future utility in current decisions, switching costs *themselves* will not lead to higher prices even when the provider can change prices later on. Initial price will be low (to attract consumers) and later prices high (when consumers are "locked-in"), but average prices over the whole term of the contract will not be different from those in a no-switching-cost market. This is so due to the assumption of perfect rationality, wherein consumers correctly assess future monopolistic pricing and average it with current low prices. See Paul Klemperer, *Competition When Consumers Have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade*, 62 REV. ECON. STUD. 515, 536 (1995).

same calling plan (whether due to a contractual obligation or due to high switching costs later on), the cellphone provider can anticipate a rise in profitability with future changes in consumption.

Contractual complexity thus acts to raise switching costs, which allows for raising prices to existing customers while hiding the existence of discrimination among customers paying different prices for similar consumption.

B. Discrimination Between Naïve and Sophisticated Consumers

Consumers differ in their ability to cope with contractual complexity. The standard view is that consumers examine several alternatives and choose among them while under the influence of cognitive biases. This is true of most consumers, though they differ along two dimensions: the extent to which their decision-making is subject to these biases, and their awareness of these effects and their own susceptibility. Some simplify the analysis by segmenting consumers into two groups: “naïfs” whose decisions are affected strongly by biases of which they are unaware, and “sophisticates” who are aware of their difficulties in choice-making and are able to take actions to minimize these effects or employ strategies to lessen their susceptibility.⁵⁹ The sophisticates might be able to navigate through contractual complexity, find the optimal alternative offered (or at least be aware of the difficulties facing them), and prepare accordingly. For the sophisticated consumer, having many alternatives means enlarging their information and choice sets—which will eventually lead to choosing a better alternative. For example, a sophisticated consumer will know to ask about calling plans not suggested to her, arrange alternatives in a table or graph to facilitate comparison, or examine the different providers’ offers based on her own consumption profile. Ideally, she will even take into account anticipated changes in future consumption, including the incentive her chosen calling plan will create to alter phone usage—as marginal cost per minute of calling time varies considerably across plans, and initial choice will drive behavior later on.⁶⁰

Naïve consumers, on the other hand, see the variety of calling plans as an advantage, even when it actually harms their ability to choose. They are unaware of cognitive load and do not prepare themselves upfront to handle it.

59. See, e.g., Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121 Q.J. ECON. 505, 509 (2006).

60. The incentive effect of marginal price on future phone usage is an important factor, both for consumers basing current choice on expected future consumption, and for providers aiming at increasing phone usage and changing consumer habits. The objective measure of marginal price per extra minute used is highly relevant whenever “buckets of minutes” effectively create a zero marginal price (thus encouraging use), and may be further exacerbated if consumers exhibit a tendency to exploit opportunities to their fullest—a “sucker effect” in which nonuse of free, included minutes confers a psychic cost. See Thomas W. Hazlett, David Porter & Vernon Smith, *Radio Spectrum and the Disruptive Clarity of Ronald Coase* 21 (George Mason Univ., Law and Economics Research Paper Series No. 10-18, 2009), available at http://ssrn.com/abstract_id=1583098 (noting that the “bucket of minutes” plans purportedly had a strong effect in increasing consumption in the United States).

For them, the opulence of alternatives complicates decision-making; and eventually they will find themselves choosing according to rules of thumb—unanticipated heuristics that lead them to suboptimal decisions. Importantly, the cellphone provider can fully anticipate these heuristics; and they play a major role in devising the types of plans offered, as well as the method of presentation and order of presented alternatives. Simply put, the naïve consumers are the target audience for contractual complexity, and they will pay higher prices than their sophisticated counterparts for the same consumption profile.

Between these two extremes lies a spectrum of differing levels of sophistication. Consumers vary in their awareness of cognitive biases generally and the specific effects of cognitive load, just as they vary in the amount of time and effort they are willing to invest in order to overcome their biases or improve their ultimate choice by accounting for them.⁶¹ Focusing here on the extreme cases provides expositional clarity, but the general arguments apply more widely. Sophistication may be a personal attribute, varying across consumers, as well as a structural issue whereby individuals differ from providers. Insofar as businesses purchase cellular plans in bulk (for employees' work-related use), sophistication should increase with size of purchase, as well as with experience gained by professional purchasers making a business decision. Still, it would be going too far to state this is merely a business-individual distinction, as not all businesses are alike, exactly as consumers vary.

The distinction between sophisticates and naïfs demonstrates the effects of contractual complexity. At first glance, it seems clear that sophistication allows consumers to find optimal calling plans, and thus sophisticates will achieve lower final prices than naïfs. A deeper look will show another effect intertwined with this one. Since complexity will push naïve consumers toward suboptimal choices, the providers in the market will profit from creating complexity, and the sophisticated consumers will benefit because more alternatives allow them more room for optimization. A model developed for a similar context is that of add-on pricing, or the existence of shrouded attributes—those characteristics whose price is unanticipated by some of the consumers.⁶² When naïfs are

61. These effects can be modeled by allowing naïveté to be a continuous parameter, as well as allowing for differing costs of time and effort, whether due to objective measures or subjective preferences (as some abhor paperwork and negotiation with service representatives more than others). See Kfir Eliaz & Ran Spiegler, *Contracting with Diversely Naïve Agents*, 73 REV. ECON. STUD. 689, 690–91 (2006).

62. See *supra* note 59. There, the emphasis was on attributes the buyer imperfectly observes (or foresees), such as the price of ink when purchasing a printer. This price is theoretically predictable, and a sophisticated consumer will take it into account as part of each printer's price. The naïve consumer, though, will focus on the current expenditure of the printer's price alone. The result is competition among businesses to offer cheap printers and profit from future sale of ink cartridges. Even unconstrained competition in the printer market will not prevent this dynamic, and profits will be supracompetitive. The market imperfectly constrains pricing due to (naïve) consumers ignoring future costs. A business attempting to sell more-expensive printers with cheaper ink will find itself considered less attractive.

expected to underanticipate certain costs, providers will use this to enhance profitability. The fact that sophisticates *do* anticipate these costs and find ways to circumnavigate them, causes providers to raise prices even more to the naïfs. Put simply, the sophisticates' success creates an externality on the naïfs. In the cellphone context, this externality is apparent when the same opulence of alternatives confusing the naïfs helps the sophisticates find their optimal personalized contract. For the latter, variety creates a fertile ground for market research and comparison, for the former—a high monthly bill.

Although this section has focused on complexity in choice in calling plans, it is important to note that the same effect is present in complex cellphone bills. Whenever consumers complain that they can't understand their monthly statement, they often refer to the complexity of several different charges, some with discounts or "cash back" promises that confuse them. It takes a sophisticated consumer indeed to follow the varying amounts present in most cellphone bills, and to invest the time and energy in phoning their provider, waiting in queue, and getting charges dismissed. The more complex the contract, the more difficult it is to verify that prices charged are the same as those promised. The more the provider relies on specialized "discounts," the more awareness necessary on the part of the consumer—both in the planning stage, and later on when the actual bill arrives. Obviously, the multifaceted nature of the cellphone contract, including many attributes besides voice, plays an increasingly large role here.⁶³

There is a related distinction between cellular contracts for personal use and those for business use. A common assumption in behavioral models is that businesses are better able to assess their situation and employ full rationality, while individuals are laden with biases that are difficult to overcome. Such a clear distinction may be helpful for expository purposes (as is the dichotomy between naïfs and sophisticates), though obviously more muddled in reality. Business customers are often offered different terms than individuals, stemming both from economies of scale (as businesses often purchase many units within the same deal) and from sophistication generated by professional buyers investing in market research. Sophistication is the key issue, relating directly to the biases and cognitive load assessed here. Thus, the business-individual distinction is one example of the more general sophistication-naïveté divide (or, rather, spectrum) that will be further explored below.

63. The issue of bill presentation and format is central to some of the policy suggestions made by scholars dealing with cognitive limitations of consumers and providers' use of correct but misleading information. See, e.g., Bar-Gill, *infra* note 78. We shall not delve into the issue of bill presentation here, in order to maintain focus on the main contribution of this paper—hyperchoice in contract terms (and types) offered *ex ante* rather than misleading bills presented to consumers *ex post*.

V

EMPIRICAL VERIFICATION IN REAL MARKETS

Up to this point, this article has focused on the theoretical basis, both psychological and economic, for the problematic effects of complexity in cellphone contracts. It is important to examine empirical work as well, both in the cellphone market and in similar contexts, in order to verify that the issues raised are problematic in practice as well as in theory.

In Great Britain, a study was conducted examining consumer choice among electric companies and types of payment options.⁶⁴ The result shows cognitive load harms decision quality, even when the load stems solely from additional options. Most consumers failed to minimize costs by staying with their previous provider or payment plan (ninety-nine percent of those staying with the default option would have benefited from a change), though it would be wrong to infer from this a “mistake” on their part. It may very well have been a choice to pay a material price to avoid the mental effort involved in a change. The fact that a third of those who *did* transfer to a different provider did so in a suboptimal way is more difficult to rationalize away. A cumulative analysis showed that only a quarter of the potential gains from the entrance of a new provider made it to consumers’ pockets; this is a difficult and disappointing result for believers in competition and the free market. Still, the most interesting result is that consumer mistakes *rose* with increasing competition; in other words, increasing alternatives harmed consumers. As anticipated by theory, complexity led to worse decisions.

In the United States, the effect of increasing competition on the variety of cellphone calling plans was examined directly.⁶⁵ The American cellphone market developed from licenses granted in small geographical markets to local monopolies or duopolies, through gradual licensing of additional competitors varying across markets. This allowed for a side-by-side comparison of the effect of competition on separated markets. The important result is that the number of offered calling plans increased significantly with increasing competitive pressure. As a new provider was licensed and entered the market, the incumbent provider responded not just by lowering prices, but by offering new types of previously unavailable calling plans. This phenomenon is open to competing interpretations. It may be seen as an increase in consumer welfare, as each consumer can better personalize her contract, if we assume choice is made optimally. It may alternately be seen as an attempt to create a façade of competition while softening the competitive pressure to directly reduce prices.

64. Chris M. Wilson & Catherine Waddams Price, *Do Consumers Switch to the Best Supplier?* 6–14 (Ctr. for Competition Policy, Working Paper No. 07-6, 2007), available at <http://ssrn.com/abstract=982530>.

65. See Katja Seim & V. Brian Viard, *The Effect of Entry and Market Structure on Cellular Pricing Tactics* 32 (NET Inst., Working Paper No. 03-13, 2004), available at <http://ssrn.com/abstract=618221>.

Of course, there is no reason to think only one of these is correct. The factual finding is susceptible to many interpretations.

Interestingly, the authors of the American study do not pause to consider whether choice was conducted optimally, but immediately jump to the conclusion that increasing variety increased consumer welfare. They rely on an unstated assumption that consumers cannot be harmed by additional choice, and always optimize among available alternatives. This assumption is common in other empirical examinations as well, almost always unstated and untested.

In order to more deeply examine the effects of overabundant choice in the cellphone market, Eugenio Miravete conducted a series of studies attempting a “rationalization” of empirical findings; in other words, he tried to explain, using the rational-choice model, whether consumers are optimizing choice by minimizing payment for cellphone services. First, he examined consumer choice in fixed-line telephony, wherein a distinct change occurred in the types of plans offered.

Miravete collected data from a price experiment conducted by South Central Bell (SCB), the local telephone company in Louisville, Kentucky in 1986.⁶⁶ Until that time, SCB sold phone access in one bundle, a monthly contract offering unlimited local calls. When the provider wanted to add other options, it was asked by the regulator to conduct a price experiment to test the effect on consumers. SCB added a pay-by-use option with a lower monthly fee, but requiring a positive price for calls made; this was an attractive offer to “light” users of the phone line. The question was whether consumers would choose their optimal contract, and (especially) whether they would correct initial mistakes over time.⁶⁷ The same database led other researchers to conclude that consumers have a strong preference (some would say too strong) for fixed-price options, where price is perfectly anticipated and does not differ by use.⁶⁸ Contrary to these previous claims,⁶⁹ Miravete concluded that consumer mistakes in choosing calling plans are explained by a dynamic process of initial assessment, receiving data on actual use and payment, and correction of

66. See Eugene J. Miravete, *Choosing the Wrong Calling Plan? Ignorance and Learning*, 93 AM. ECON. REV. 297, 299–301 (2002); Eugene J. Miravete, *Estimating Demand for Local Telephone Service with Asymmetric Information and Optional Calling Plans*, 69 REV. ECON. STUD. 943, 945–48 (2002).

67. Since phone use varies over time, consumers will not always know which option is cheapest for them. Thus, the question is not merely initial choice among calling plans, but attention to changes and re-optimization—an ex post learning process of adapting to slowly unveiling information about their own phone use.

68. See Jeffrey K. MacKie-Mason & Donna Lawson, *Local Telephone Calling Demand When Customers Face Optimal and Nonlinear Price Schedules* 27–28 (Univ. of Mich., Nat’l Bureau of Econ. Research & Nat’l Oceanic and Atmospheric Agency, Working Paper, 1993).

69. See generally Michael Hobson & Richard H. Spady, *The Demand for Local Telephone Service Under Optional Local Measured Service* (Bellcore, Economics Discussion Paper No. 50, 1988); Kenneth E. Train, Daniel L. McFadden & Moshe Ben-Akiva, *The Demand for Local Telephone Service: A Fully Discrete Model of Residential Calling Patterns and Service Choices*, 18 RAND J. ECON. 109 (1987); John P. Kling & Stephen S. van der Ploeg, *Estimating Local Call Elasticities with a Model of Stochastic Class of Service and Usage Choice*, in TELECOMMUNICATIONS DEMAND MODELING: AN INTEGRATED VIEW 119 (Alain de Fontenay, Mary H. Shugard & David S. Sibley eds., 1990).

mistakes over time. This process fits with the assumption that consumers rationally minimize their phone bill. Their bias towards fixed-price options was explained by an overestimation of their future phone usage, one that was corrected over time if proven wrong. The findings that consumers were slow to correct such mistakes and showed a status quo bias were explained by their uncertainty regarding the future.

While it is interesting to discuss consumer mistakes and possible later corrections, a study comparing two pricing options is far from sufficient to understand the current cellphone situation, in which a large number of calling plans with many differing attributes make direct comparison very difficult. It may very well be that consumers are able to optimize among two clearly distinct alternatives in which the salience of differences is high due to a single pre-change price with no options suddenly being augmented by a relatively simple alternative.

In order to check whether a rich menu of pricing options allows the cellphone provider to mislead consumers into choosing the wrong calling plan, Miravete chose to study what he called “foggy pricing.”⁷⁰ The basic idea is simple: if calling plans exist in order to confuse consumers, the cellphone providers must be pointing them towards plans in which payment is higher. Consumers, obviously, are not interested in paying more than necessary for their cellphone service, thus their choice was seen as a mistake if they clearly are paying too much. Since the study was empirical and based on real-world data, a clearly defined mistake must be identified to differentiate choice (and heterogeneity of tastes) from confusion. A price was termed “foggy” if it was clearly dominated by others—that is, it could not be chosen but for a mistake in understanding the options. Dominated calling plans are those for which cheaper alternatives are available for any possible consumption profile during all (or at least most) hours of the day.⁷¹

A foggy price is supposedly not in the provider’s interest because if consumers choose optimally, or at least correct initial mistakes relatively quickly, such plans should not survive in the marketplace. Nevertheless, such plans were offered and their number rose in direct proportion to the competitiveness in the relevant market. In other words, when a cellphone provider obtained a local monopoly (a common starting point for most U.S. cellphone markets), almost no foggy options were offered. As local competition increased, providers rushed to offer more and more calling plans, with some of

70. See Eugenio J. Miravete, *The Doubtful Profitability of Foggy Pricing* 2–3 (NET Inst., Working Paper No. 04-07, 2004), available at <http://ssrn.com/abstract=618465>.

71. Due to different structures of calling plans, one may be cheaper during specific times, even though the consumer should still not choose it because it is dominated at other times. The first definition of “foggy prices,” a fully dominated tariff, is simple and binary—each calling plan is either foggy or it is not. The second definition allows more flexibility as well as a measurement of range—the fogginess is measured continuously according to the length of time in which it is dominated. This allows a full ranking of plans and measurement of the conditions leading to the amount of fogginess in the offered prices.

these being “foggy.”⁷² This can be explained as competition causing cellphone providers to focus on raising profitability through creating confusion and gaining from consumer mistakes, as the simple high-price strategy was no longer viable.

It should be stressed that the definition used by Miravete for foggy pricing was especially strict and limiting. A dominated calling plan is one that can always be improved by switching, but if the aim was examining the consumer’s point of view, it is more important to see to what extent consumers chose the *optimal* plan—not just the extent to which they chose the worst one available. If creating complexity through an overly rich menu of alternatives reduces the consumer’s ability to choose correctly, that is enough to warrant critique even if they avoided a worse option. Furthermore, there is no reason to assume that a rational profit-maximizing business would create such foggy options. It is easier to create a network of prices that all have attributes making them better for different times or consumption profiles, although none is “best.” If a large variety allows higher final prices, there is no need to create a “worst” option. Variety that makes optimal choice by consumers difficult, allows the provider to profit from mistakes. If complexity makes comparison difficult, this is sufficient to raise profits and there is no reason for the provider to seek out dominated, or foggy, prices.

Finally, it is especially interesting to note that Miravete could not find a rational explanation for the variety of calling plans, one which does not rely on systematic mistakes by consumers or cognitive biases of the type discussed in this article. The only study in which he directly examined a variety of pricing options (and not just the worst one) led him to conclude there are too many options—not for consumers, but for the providers themselves.⁷³ His recommendation to cellphone providers to reduce the number of options offered due to their handling costs and lack of profitability is interesting, especially since in practice, the cellphone market (among others) is heading in the opposite direction.⁷⁴ Here too, the basic assumption of rational consumers lacking biases or cognitive load underlies the model, and the assumption was not made explicit nor its veracity discussed. With no room for variety as the source of confusion or difficulty in comparing among providers, no explanation was found for the existence of so many options.

72. Here, it is interesting to remember the implicit assumption upon which Seim & Viard, *supra* note 65, based their work. In their study, variety was measured as a direct proxy for consumer welfare, with no attention to plan details. Thus, foggy prices were measured as part of the consumers’ benefit as well. The downside of making implicit assumptions about consumers valuing choice per se becomes apparent, even without the considerations of complexity and cognitive cost explained in this article.

73. See Eugenio J. Miravete, *Are All Those Calling Plans Really Necessary? The Limited Gains from Complex Tariffs* (Ctr. for Econ. & Policy Research, Discussion Paper No. 4237, 2004), available at <http://ssrn.com/abstract=509009>.

74. Also interesting is the dismay perhaps experienced by an economist offering a rational explanation for consumer choice (rejecting cognitive constraints), while witnessing the lack of such rationality as to providers’ commercial dealings.

It should be noted that in most of the studies cited above, a simple comparison was made of two states of the world: before competition entered, and after it did. The mere fact of deregulation, together with the change in number of operators in the market, increases the salience of different alternatives. This leads consumers to be more aware of differences and be more able to attend to them. In most mature cellphone markets today, market segmentation is relatively stable, thus salience should be lower due to the lack of a distinct change to draw consumer attention. Also, if a large part of variety's effect is in discriminating between naïve and sophisticated consumers, an empirical examination of cumulative effect suffers from a double bias. A sophisticate's situation would likely improve with an increase in the number of alternatives, while a naïf's would likely worsen. Bundling all consumers together will only allow for finding an average effect; even if the effect is large on each group separately, it will diminish due to opposite signs. This does not mean the data examined above shows such an effect, as this should be measured directly; but the conclusion such an effect is lacking requires substantiation that has not yet been provided.

Recently, Oren Bar-Gill and Rebecca Stone found direct empirical verification of the effects of contract complexity on consumer choice.⁷⁵ Examining a dataset consisting of actual plan choice, usage, and payment, they compared possible explanations of what seemed to be mistakes in consumer choice. Focusing on the issue of choice and complexity in calling plans, they compared "rational" explanations with those allowing for consumers' confusion, and showed that the data are much better explained by the latter. While consumer learning occurs over time, this process is insufficient to overcome the substantial welfare losses found.⁷⁶ Of special interest is the fact that competition in the cellphone market does not dissipate provider profits resulting from contractual complexity, contrary to the assumptions implicit in the literature surveyed above. Finding a solution to this problem is the topic of the next section, which considers the appropriate normative response to issues of complexity and consumer mistakes.

75. Oren Bar-Gill & Rebecca Stone, *Mobile Misperceptions*, 23 HARV. J.L. & TECH. 49, 118 (2009).

76. Consumer learning may be fostered by allowing consumers a quick response through changing calling plans. The lock-in effect of minimum-term contracts, as well as the psychic costs of studying and understanding the available alternatives, raise switching costs and thus reduce the incentive for learning *ex ante*. Note, of course, that the increase in plan complexity and available alternatives raises these learning (and thus switching) costs. See Martin Gaynor & John Heinz, *Cell Phone Demand and Consumer Learning—An Empirical Analysis* 25 (NET Inst., Working Paper No. 05-28, 2005) (noting evidence of learning over time, but in a setting where switching was easy and early termination was costless).

VI

GIVEN HARMFUL COMPLEXITY, SHOULD THERE BE A REGULATORY RESPONSE?

The picture painted so far is one of an overly rich menu of cellphone prices, causing consumer confusion and suboptimal choice, as well as lower competitive pressure on providers whose offerings are difficult to compare. From a regulatory point of view, there is a consumer-protection problem—strategic complexity may cause consumers to choose incorrectly or, more generally, mislead them. There is also an antitrust problem—focusing not on the single consumer, but on the need for comparisons between providers to foster competition in the market.⁷⁷ Cellphone markets are regulated in most jurisdictions, with specific regulators focusing on communications networks, while competition authorities and courts hear cases bearing on these issues, both within and outside of communications markets.

Regulatory and court intervention in contractual complexity is possible in two main ways: limiting the number of calling plans providers may offer, or creating a simple basis for comparison upon which all calling plans must be based. The second option intervenes less than the first in market processes and providers' freedom of action, and similar solutions were proposed in other markets suffering from similar issues.⁷⁸ Even without state intervention, it is possible that market mechanisms could prevent at least some of the detrimental effects of cognitively constrained consumers. Such market mechanisms are based on providers' interest in maintaining a positive image and include having their offerings rated by independent consumer organizations or the popular press, the leadership effect of sophisticated consumers, and the like.⁷⁹ Still, the hope that market forces make direct intervention unnecessary seems overly optimistic, especially when dealing with an attribute consumers value—namely, the ability to choose.

Mechanisms that interfere with consumers' choice and that are justified by the need to protect them from mistakes are paternalistic in nature. Much has been said and written about the newly garnered support for paternalism based on behavioral economics and the relevant scientific literature. Since this support originates mostly from economists educated to respect private choice and market forces, the argument surrounding the new paternalism is fierce, with

77. The availability of antitrust intervention depends on whether explicit collusion exists, as well as the public attitude towards the legality of oligopolistic coordination and the existence of facilitating practices. *See supra* text accompanying note 45.

78. *See, e.g.*, Oren Bar-Gill, *Seduction by Plastic*, 98 NW. U. L. REV. 1373, 1377–79 (2004) (examining intervention in the credit card industry); Ian Ayres & Barry Nalebuff, *In Praise of Honest Pricing*, 45 MIT-SLOAN MGMT. REV. 24, 26–28 (2003) (examining energy market intervention); Jon Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, 112 HARV. L. REV. 1420, 1467–1552 (1999) (examining intervention in the tobacco market).

79. *See, e.g.*, Omri Ben-Shahar, *The Myth of the "Opportunity to Read" in Contract Law*, 4 EUR. REV. CONT. L. 1 (2009); Oren Bar-Gill & Franco Ferrari, *Informing Consumers About Themselves*, 3 ERASMUS L. REV. 93 (2010).

many bringing up the known limitations of such intervention.⁸⁰ In order to overcome the individual-choice problem and avoid forcing regulation on those for whom protection is unnecessary, techniques of asymmetric paternalism were developed, leaving a “safety valve” allowing some consumers to avoid regulation not in their best interest.⁸¹ Asymmetric paternalism, a.k.a. “soft” or “libertarian” paternalism, refers to regulation intended to protect naïve consumers likely to make mistakes due to their own cognitive limitations, while simultaneously not impeding the more sophisticated consumers from making their own choices. Examples include offering workers default 401(k) plans thought to be in their best interest (while allowing change), mandating simple comparison tables for credit offerings (while allowing competition regarding actual terms), and even moving healthy foods to the front of the cafeteria line (while allowing unhealthy foods to be offered, later down the line). The basic idea is simple: make sure naïve consumers are not tricked into choosing an option likely to be sub-optimal in the long run, while allowing sophisticates to maneuver through the array of choices and find their preferred one. The “asymmetric” component is important: it allows for some of the benefits of paternalism (as consumers are protected from their own choices, and from providers’ subtle trickery), without constraining the options of those who prefer to trust themselves and optimize accordingly.

Some of the regulation popular in cellphone markets, such as limiting the length of commitment periods a provider may demand, follow this principle. Such limitations are based on an assumption that consumers cannot rationally take into account future price increases or consumption changes, stemming from the same type of cognitive limitations discussed in this article. These limitations also apply to providers offering distinct cellphone numbers, another attribute raising switching costs that a rational consumer should take into account *ex ante*. Regulators in many jurisdictions have acted to enforce number portability, showing an unwillingness to rely on perfect consumer rationality and foresight. Regulation of contractual complexity in the cellphone market relies on similar ideological grounds.

80. See generally Jeffrey J. Rachlinski, *Cognitive Errors, Individual Differences, and Paternalism*, 73 U. CHI. L. REV. 207 (2006); Edward L. Glaeser, *Paternalism and Psychology*, 73 U. CHI. L. REV. 133 (2006); Glen Whitman, *Against the New Paternalism: Internalities and the Economics of Self-Control*, 563 POL’Y ANALYSIS 1 (2006); Gregory Mitchell, *Libertarian Paternalism Is an Oxymoron*, 99 NW. U. L. REV. 1245 (2005); Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. 1620 (2006).

81. See generally Richard H. Thaler & Cass R. Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV. 175 (2003); Colin Camerer et al, *Regulation for Conservatives: Behavioral Economics and the Case for “Asymmetric Paternalism”*, 151 U. PENN. L. REV. 1211 (2003). The status quo bias mentioned above is an excellent example. If diverging from the status quo is allowed, and most consumers decline to do so, it seems obvious that a regulatory agency would strive to make the default option the best for most consumers, or for most of those predicted not to invest the time and effort needed to make a conscious choice. Such regulation still allows consumers to choose differently, thus the constraint on individual liberty is minimal. On the other hand, there are reasons to doubt the efficacy of such “have the cake and eat it too” tactics. See *supra* note 80.

Competition, while generally helpful, is not expected to solve the problems alluded to here. Its beneficial effects would be mitigated by the existence of naïve consumers valuing variety and ignoring cognitive costs and their effects.⁸² If consumers were rational utility-maximizers lacking any cognitive limitations or cost of thinking, obfuscation strategies would not work because competition would dissipate them. Of course, oligopolistic coordination can manifest itself directly in prices rather than complex behavioral tactics. In the present situation, however, the lower salience of behavioral tactics and complexity of contracts makes these more attractive from the providers' point of view. From the consumers' point of view, some would protest the unfairness of going through a process of excitement from abundance, choosing from a large set, trying to find the optimal contract, and eventually getting a long and complicated bill making understanding and comparison difficult.

When considering regulatory intervention in contractual complexity, it is important to remember that the large variety is highly valued by consumers. Even relatively benign suggestions, such as requiring providers to list common attributes and create a common ground for comparison, still limit the freedom of providers unable to devise contracts at will (otherwise each contract will have its own attributes, difficult to compare with others). Furthermore, even requiring standard-form information disclosure of the type focused on by Bar-Gill, recreates known regulatory problems such as needing to constantly adapt to a changing market, especially in a dynamic and innovative market such as the cellphone one. Here, as elsewhere, there are no easy answers or magic solutions. Intervention helping on one dimension is likely to harm in others, or its cost (including the rigidity imposed on the business world) might turn out to be high. This article focuses on pointing out the problem and understanding its sources; devising solutions and dealing with their unavoidable drawbacks requires separate consideration.

One aspect raised above, the distinction between naïve and sophisticated consumers, requires additional thought.⁸³ It is true that sophisticates, able to compare calling plans and form forward-looking incentives, could achieve lower prices. Regulatory intervention aimed at protecting more-naïve consumers also reduces the profit potential sophisticates see in *learning* the various offerings and alternatives. Sophistication is not a static attribute, but a *dynamic character trait* that changes with time, investment of effort, and sometimes money. The sophisticates work hard to find the best deal, and the fact that naïfs pay more is a result of their own laziness, not investing in understanding their commercial

82. This is because the driving force behind these practices is consumer preference and lack of foresight, rather than mere provider coordination. Thus, a provider offering fewer plans might benefit consumers, but this would only be perceived as such by sophisticates. Naïfs would focus on the smaller variety, impeding their perceived choice. See *supra* Part IV.B.

83. *Id.*

surroundings.⁸⁴ Each description brings up different connotations, and it is important to remember the difference between describing a fact (the price difference between groups), and adding interpretations and personal opinions (who is to blame). The important point is that reducing the price difference also reduces the incentive to exert effort to find a better deal; thus, regulatory intervention encourages consumer laziness. It amounts to a proclamation that consumers are unable to make their own choices, or to understand the alternatives offered; instead the regulators must do the work for them. Demanding that providers arrange their offerings in a way that even naïfs can understand removes any need they might have to try and become more sophisticated.

Since all human beings are tainted with cognitive limitations of some kind, this is not just a regulatory question but a matter of accepting the fact that the ability to choose is limited, even if a rich menu is placed before consumers. The existing tendency to offer great variety and pull consumers in with “sales” and “discounts” is a direct result of the value consumers place on the choice process itself, together with the excitement garnered from a new purchase. A consumer aware of his limitations will take them into account, whether in learning how to minimize payment for cellphone services, or forgoing the effort altogether, consciously deciding to pay a little more rather than wasting time on comparisons. If the purpose is maximizing utility—that is, subjective welfare—it is far from clear which option is best.⁸⁵ The state’s attempt to save the consumer the cost of becoming more sophisticated might detract not just from a worthy incentive, but also harm the ability to satisfy one preference (wanting the process of choice) in order to foster another (choosing the best alternative). The tendency to see cognitive limitations as justifications for protective regulation must account for the ancillary harm to the joy of choice-making, as well as the problematic incentive to avoid investment in sophistication. The solution is far from obvious.

It is precisely this point that motivated the choice of this specific market, cellphone calling-plans, to be assessed in this paper. If asymmetric/libertarian/soft paternalism is an appropriate policy choice to deal with other cognitive biases, cognitive load and hyperchoice situations should be part of the program. This market is a central and important one, at least with respect to the number of people affected. Still, this example more than others

84. “Laziness” invokes a negative connotation, implying a consumer’s obligation to take more care with commercial choices. It is also possible that cognitive biases are overemphasized, and consumer culture as a whole should be critically assessed. See Martha A. Starr, *Saving, Spending, and Self-Control: Cognition Versus Consumer Culture*, 39 REV. RADICAL POL. ECON. 214, 227 (2007) (arguing that it is not better consumerism that should be fostered through law, but less consumerism).

85. See *supra* note 33. In light of the utility attained by “maximizers” versus “satisficers,” discussion of appropriate state intervention might best focus on education, such as encouraging enjoyment of the present and settling for “good enough,” rather than tweaking market mechanisms facilitating “optimal” consumer choice. This, though, is an issue requiring elaboration much beyond the scope of the current article, and will be developed further in future writings.

shows how intervention aimed at improving social and personal welfare also involves restricting choice in a manner that many may find objectionable. Understanding the mechanisms by which consumers choose, and providers' adaptation to them, is important even if the appropriate regulatory response is uncertain.

VII

CONCLUSION

The cellphone market allows for a fascinating test case of several cognitive biases plaguing consumers, as well as marketing tactics of businesses adapting to such consumers. Some biases have already received regulatory responses aimed at protecting consumers, usually within a context of public debate stressing the freedom of choice. This article adds to the menu of relevant biases the problem of cognitive overload and over-abundance of contractual choice in the cellphone market. Given a difficulty understanding and processing information, the consumer finds himself offered a too-large variety, which harms his ability to choose optimally so that freedom of choice becomes mostly illusory.

Since the basic intuition is that variety of alternatives is an advantage to the consumer interested in choice, those arguing that contractual variety can be a curse as well as a blessing bear a heavy burden. However, a review of the literature and experimental evidence, as well as real-world empirical studies, substantiates the basic argument that freedom of choice in the cellphone context is ill-served by increasing variety. Still, the basic tendency shared by most consumers is to prefer a rich menu of choices, even when the eventual enjoyment of the final choice suffers as a result. Thus, the preference for choice is no less real than the preference between alternatives, and there are a variety of contexts where these interests collide. Where this happens, the consumer will seek choice and suffer from suboptimal results.

Implementing these psychological insights in the cellphone market allows for a renewed perspective on the prevalent marketing tactics, where harm to consumers appears in two ways: inability to make optimal choice and a lessening of competitive pressure on providers. The first raises issues from consumer-protection law and paternalistic regulation, while the second raises issues related to antitrust law and competition policy. The high concentration in most cellphone markets allows for oligopolistic coordination, where marketing tactics based on cognitive limitations allow providers to charge high prices in a less salient way than most models assume.

The empirical literature on consumer choice illuminated the biases affecting researchers, who are quick to make implicit assumptions regarding consumer rationality and thus assume an increase in consumer welfare without examining alternative explanations. The distinction between sophisticated and naïve consumers demonstrates the price discrimination mechanism and the importance of complexity, and challenges the appropriateness of regulatory

intervention. Since consumers are interested in having a large variety even though it harms their eventual choice, it is unclear that it is appropriate for the state to prevent them from acting out this preference or reduce consumers' incentive to figure out the way the market operates and increase their own sophistication.

In the end, it is hard to say if regulation aimed at solving the information-overload problem will do more good than harm. Still, posing the question seems important in order to delve further into the issues, as well as giving a richer context within which to discuss regulatory arrangements in other industries. It is this issue of contractual complexity that implicates freedom of choice most clearly, and easy answers are hard to come by. Since choice is not necessarily better (or more "free") given many alternatives, it is difficult to determine how to best increase consumer autonomy. Education about the array of cognitive biases afflicting consumers may help in overcoming them, but it serves a deeper purpose. It increases consumer sophistication; but even more importantly, it allows for a deeper understanding of choice mechanisms. Even without a clear regulatory response, knowing ourselves and critically examining our own actions allow for attaining true freedom of choice: accepting reality and enjoying our own part in it, while understanding our limitations and being willing to pay their price.