

A COMMENT ON INFORMATION OVERLOAD, COGNITIVE ILLUSIONS, AND THEIR IMPLICATIONS FOR PUBLIC POLICY

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The papers by Grether, Schwartz, and Wilde (GSW) and by Edwards and von Winterfeldt (EW) provide us with excellent syntheses of fascinating literatures that are of importance to anyone interested in human behavior. I learned a great deal from these papers and find myself persuaded by GSW's contention that information overload is not a serious issue for consumer law and by EW's conclusion that cognitive processes are, in fundamental ways, learned intellectual skills. However, viewing the most useful role of a commentator to be that of an irritating troublemaker, my remarks will primarily be directed to what I believe are the more problematic aspects of their positions.

With this caveat concerning my objective, my comments are organized along three lines of inquiry. First, I have some questions about specific arguments or assumptions in the papers. Then, I will raise two questions of first principle that are suggested, yet not pursued, by GSW, but that I believe need to be answered to develop an intelligent position on consumer legislation. EW's characterization of the dynamics of the attorney-client relationship poses similar issues. Lastly, I offer some thoughts concerning the irrelevance of information overload and the learned nature of the cognitive process from the perspective of the decision problem of consumers of financial assets.

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I

GSW's discussion of information overload depicts consumers as employing a "satisficing" strategy: consumers do not choose the best product available in the marketplace as they would if they were optimizing because the costs either of acquiring information or of processing it prevent them from engaging in the optimal search strategy. While GSW appear to consider this characterization of the consumer choice problem as essential to their thesis, I question the analytical advantage of the satisficing terminology. Their definition of satisficing, "do[ing] as well as one can, given the circumstances,"¹ is a cogent statement of a constrained optimization problem and is identical to the definition of consumer behavior, or the axiom of rationality, given in a standard microeconomics course. As I interpret their description of the problem of product diversity in which information acquisition costs are high, the consumer is maximizing product choice subject to constraints—the costs of search—that draw in the opportunity set. The notion of satisficing adds little to that discussion. Thus, I am skeptical that much is gained by affixing the satisficing label to the purposive activity the authors are describing, and the authors themselves seem to acknowledge this at one point.²

Satisficing more properly refers to the second problem that GSW discuss, namely, the possibility of suboptimal consumer choice because of information processing problems. The limits of cognitive capacity, and not information acquisition costs, were the key for the organization theorists who formulated the concept of satisficing. Herbert Simon, for example, viewed the mind as a scarce resource,³ so that the critical problem concerned the allocation of information assimilation and usage. Moreover, in this context of information processing costs, specification as a constrained optimization problem is more difficult because of the amorphous nature of the relevant constraints, including the limits of human cognition in solving complex choice tasks. GSW, however, carefully detail the experimental and other evidence that consumers generally make the correct—their best—choices in these situations, where we might otherwise expect to see signs of information overload. Hence, in addition to GSW's conclusion that information overload is not a severe problem, it is unlikely, if we accept their analysis of the data, that the use of a

1. Grether, Schwartz & Wilde, *The Irrelevance of Information Overload: An Analysis of Search and Disclosure*, 59 S. CAL. L. REV. 277, 279 (1986).

2. *Id.* at 287 n.18.

3. Simon, *Rationality as Process and as Product of Thought*, 68 AM. ECON. REV. 1, 9 (1978).

satisficing heuristic results in suboptimal product choices, in comparison to the choices of a maximizing strategy.⁴

As I do not have expertise in experimental design, I am hesitant in advancing the second set of questions that I had after reading the GSW paper. For it is quite often of little help, if not a positive hindrance, when a novice makes suggestions to experts toiling in the field. These questions concern the format of the Grether and Wilde (GW) experiments: whether the experiments could be adapted to mitigate some features that I thought were artificial, and to what extent such changes would affect their findings.

To generate product attribute levels, GW drew a numbered ball from a bingo cage. It seems to me that the mix of real product attributes would not be random, as in the experiment. Just as a compensatory choice rule involves consumers trading-off product attributes, we might imagine that producers engage in a similar calculation in selecting their product's attributes, hoping to match consumer preferences. Such a process is missing in the bingo ball formulation. I wonder if a nonrandom combination of attribute levels would alter search strategies and, in particular, the relation between search strategies and costs that GSW find, such as the lack of cross-attribute effects from a reduction in one attribute's search costs.

More precisely, I question the experimental format's assumption of independence across attributes which excludes the possibility of preference correlations between attributes. Though I tend to think that the finding of irrelevancy of an overload problem will be robust, I wonder how, if at all, the use of correlated attributes would affect the experiments' results. I imagine that this concern might be eliminated if consumers bundled attributes that are highly correlated and treated them as one generic or composite attribute; the consistent finding of researchers that consumers evaluate products according to a small number of salient attributes may be such a conceptualization of the choice process. Could this interpretation provide a basis for the independence assumption, in addition to experimental tractability? In a world with no information

4. GSW might insist that they chose a model of satisficing because in the Grether and Wilde experiments, which predicted a different relation between order of search or cutoff levels and search costs for the two strategies, subjects appeared to follow the satisficing approach. But this may not affect attribute choices: if ideal and actual choices differed, the difference would have been more pronounced in the experiments than in the process outlined in the GSW paper because the experiments used a pure conjunctive choice method, in which the consumer chose the first product to meet the cutoff levels, rather than the two stage process outlined in the paper, in which the consumer screens products in order to choose a preferred one from among a final set.

problems, of course, if attributes are perfectly positively correlated, then the product with the highest quality or quantity per attribute would be the only product to survive in the market. But it may be equally plausible to assume, even apart from information problems, that attributes are negatively correlated, as consumers engage in trade-offs in the compensatory choice process. And if, as seems likely, attributes are negatively and positively correlated, then the offsetting tendencies may make it appear, incorrectly, that the product's attributes are independent.

It would be helpful to know which of these scenarios best captures the relation among attributes in order to better assess the significance of the findings of experiments that treat attributes as independent. For instance, the first order conditions GW derive for an optimizing strategy that contrast with the simplified nonoptimizing strategy followed by the experimental subjects are counterintuitive. Although, as EW note, intuition can be faulty, I would not have expected to find cross-attribute effects as the search costs of one attribute decrease when the attributes are independent. For although GSW predict an unambiguous change in screening behavior—in the choice of attribute cutoff level and attribute search ordering—when search costs change, the change as a function of cost might decrease, increase, or not change at all, depending upon how important the attribute is to the consumer. That is if, as GW assume, consumers are not engaged in a compensatory choice process, then a lexicographic noncompensatory strategy is imaginable.⁵ I assume that such a choice strategy could be directly tested in GW's experiments by appropriately varying the dollar values of the attributes. It would be interesting to know whether such an explanation would change the experiment's results on the relation between costs and cutoff levels or search orderings. Of course, what we would ideally like to know is the choice process outside the laboratory.

A further permutation on the search strategy modeled in GW's experiments would be to incorporate learning: it may be that consumers' perceptions of the relevant attributes change, and in particular, the set of attributes may expand or contract in the course of searching. It is conceivable that a consumer learns about the relevant attributes of some items only after search has been initiated. Moreover, a dynamic learning process would limit the usefulness of relying on most of the marketing

5. In some experiments, however, only a few subjects used a lexicographic choice rule. See Lussier & Olshavsky, *Task Complexity and Contingent Processing in Brand Choice*, 6 J. CONSUMER RESEARCH 154, 160-62 (1979). It is also possible that in these circumstances consumers do not reallocate costs among attributes but simply engage in less search.

experiments, which measure the consistency between the subjects' ideal choice indicated before the experiment and their actual choice made in the course of the experiment. It would be interesting to know whether learning increases the "correctness" of consumer choices, especially as the decision becomes more complex. EW's findings suggest that it would.

While on the subject of GW's experiments, I also have a gripe concerning their use by GSW: I found little to support GSW's conclusion that GW's experiments imply that consumers make correct choices when confronted with increasing task complexity. In a more complex experiment subjects chose from among compound lotteries. The number of compound lotteries represented the number of products, and binary lotteries within a single compound lottery represented product attributes. Once out of the simple lottery setting, the subjects' choices followed essentially a random strategy. GSW maintain, however, that real consumers do better than GW's subjects because of the consumers' familiarity with the objects of choice.

GSW's optimistic conclusion concerning consumer choice under increased task complexity is in the spirit of one of EW's criticisms of the negative inferences often drawn from cognitive illusion experiments involving probability assessments: namely, that the experiments focus on skills irrelevant to real-world decisions.⁶ Still, the fact that GW's subjects could not fall back on a familiar heuristic or algorithm to solve the compound lottery choice problem seems to me to point to a problem in experimental design and not to demonstrate that consumers solve complex tasks correctly. I take this idea also to be central to EW's position stressing the need to be careful in generalizing from experiments that do not accurately capture actual decision problems. Indeed, EW's analysis concerning the learned nature of cognition suggests that the most appropriate policy implication to draw from GW's experiments is that we should provide consumers training in how to compute the appropriate choice algorithm.

In this regard, it would be of interest to study how choices would vary if the subjects had to make the lottery decision jointly. This would test the effect of organization on decisionmaking. For instance, we could see whether subjects would specialize and develop expertise. My criticism of the gap between GW's experiment and GSW's conclusion does not mean that I am not sympathetic to the contention that people, in

6. Edwards & von Winterfeldt, *Cognitive Illusions and Their Implications for the Law*, 59 S. CAL. L. REV. 225, 246 (1986).

general, solve complex decision problems correctly. I am. But I do not think that GW's experiments on their own lend strong support to such a conclusion. It is the cumulation of the research from the marketing experiments, as well as everyday experiences in making consumption decisions, that, I believe, support GSW's thesis of the irrelevance of information overload.

Reflecting on which factors are crucial to GSW's thesis further leads me to note the problematic aspect of their policy position on the merits of disclosure and the benefits of reducing search costs. The position, in large part, depends upon the authors' prior work modeling the search process and, in particular, when the efforts of searchers produce efficient pricing and/or product terms.⁷ If preferences differ substantially between searchers and nonsearchers, however, then the market may not be efficient, and while GSW's proposed policies may alter the mix of searchers and nonsearchers, they may also only reduce the costs of those already engaging in search. This is fundamentally a messy empirical issue. But even if preferences are heterogeneous, that does not imply that a regulator would be better able than firms to discern what nonsearchers desire.

Lastly, I want to question briefly a suggestion of GSW that I found troubling. At the end of their discussion of the benefits of disclosure for ameliorating the information acquisition problem, GSW state that decisionmakers (state regulators) can use the conjunctive nature of the search process to influence consumer choice by the selection of the product attribute to be disclosed.⁸ If this were the case, it would severely restrict GSW's modeling efforts, for its logical extension leads into the hornet's nest of endogenous preferences. For, the statement implies more than a recognition that purchasing incentives can be altered by changing prices—that reducing the search cost of a given attribute for which the consumer has a pre-existing preference allows the consumer to raise his or her cutoff level. It suggests that if the government mandates the disclosure of a specific attribute, a consumer will come to believe that the attribute is desirable or important. Without even reaching the ethical issues implicated by attempts to manipulate preferences in general, whether consumers are satisficing or maximizing, their preferences must

7. In this regard, the authors might have explored an analogous solution to the overload problem, in which some proportion of consumers has superior information processing capacities. For an analysis of the situation where the processing capabilities of consumers differ, see Haliwanger & Waldman, *Rational Expectations and the Limits of Rationality: An Analysis of Heterogeneity*, 75 AM. ECON. REV. 326 (1985).

8. Grether, Schwartz & Wilde, *supra* note 1, at 294.

be fixed for economic modeling to be tractable. Moreover, the claim is really little better than wishful thinking: marketing experts frequently stress that firms cannot create consumer demand by advertising.⁹ There is no compelling reason to believe that the state would be any more successful than the private sector with regard to such preference-shaping techniques.

Before turning to air some issues not explored by GSW that I believe are important for developing informed policy positions on consumer law, I have two brief comments concerning EW's paper. First, while I find their effort to cheer us up over the depressing experimental evidence concerning the imperfections in human decisionmaking processes a healthy antidote to the dreary nihilism of much of present-day legal scholarship, I believe the policy implication of their paper would be a full employment act for decision analysts. But apart from this not entirely fair objection that the recommendation is self-promoting, the more serious issues are whether everything of importance for decisionmaking can be learned, and how costly it is to hire the necessary experts. Second, I disagree with their assertion that no participant in the legal process is assigned the function of making a right decision.¹⁰ This assertion has too narrow a view of the participants in a legal dispute. The designated decisionmaker, who is an active participant in the fact-finding process, be it judge, jury, or administrator, is supposed to make a correct decision. In addition, the requirement of written opinions, stating reasons for a decision, provides a record for evaluating whether a case has been rightly decided.

II

The findings of the empirical literature which GSW have summarized are necessary but not sufficient for formulating a coherent policy concerning consumer legislation. Even if we accept GSW's assessment of the significance of the information overload literature, a complete theory must address two important issues: the dynamics of the political process—under what conditions will the laws GSW deem optimal be enacted—and the incentives that firms face—what institutional features prevent the voluntary disclosure of desired product attributes? The second issue, relating to the adaptiveness of the domain of private ordering, also implicates some of the conclusions EW draw for the legal system from the cognitive illusion experiments.

9. T. ROBERTSON, J. ZIELINSKI & S. WARD, *CONSUMER BEHAVIOR* 31, 271 (1984).

10. Edwards & von Winterfeldt, *supra* note 6, at 269.

A positive theory of the political process is essential because it enables us to predict what legislation is likely to be enacted, a factor that could influence our judgment concerning whether a market defect is worth the legislated cure, or whether the cure is being offered because a defect exists or for some other reason. For example, one theory of the political process, the cartelization or rent-seeking approach, views politics as a negative sum game.¹¹ In this view, legislation is the product of interest groups engaging in legal plunder, securing monopoly rents or transferring resources or wealth to their members from other groups in the society. The capture theory of regulation contains a parallel perspective on the administrative state. That theory contends that the regulatory process is often captured by the regulated, to the detriment of the citizenry, whose interest agencies are ostensibly established to protect.¹² This explanation challenges the economic rationale for regulation, that the state provides a means to alleviate market failures which occur in the context of public goods, externalities, and transaction costs.

To restate the problem, any recommendation to design legislation or administrative rules to alleviate information acquisition difficulties leads to a further question: Will consumers benefit from the end product of the legislative or rulemaking process? If the rent-seeking hypothesis is correct the prediction would be quite pessimistic. For even if the goal of some proponents of disclosure regulation is to aid consumers by reducing search costs, that objective would be distorted by, if not lost in, the political process.

In general, apart from the costs—a qualification that seems to me to be far more important than GSW acknowledge—I find it hard to devise a plausible scenario in which consumers would be disadvantaged¹³ by disclosure requirements; the potential for rent-seeking seems far greater in a regime of product regulation that restricts output than in one of attribute disclosure. In particular, it is also difficult to envision the existence of transaction-specific assets in the context of consumer products and the

11. *E.g.*, J. BUCHANAN, R. TOLLISON & G. TULLOCK, *TOWARD A THEORY OF THE RENT-SEEKING SOCIETY* (1980). For an early statement of the concept of legal plunder, see E. BASTIAT, *THE LAW* 21 (D. Russell trans. 1950) (1st ed. 1853) ("The present-day delusion is an attempt to enrich everyone at the expense of everyone else; to make plunder universal under the pretense of organizing it.").

12. Stigler, *The Theory of Economic Regulation*, 2 *BELL J. ECON. & MGMT. SCI.* 3 (1971).

13. Consumers are disadvantaged whenever producers can extract monopoly profits.

overload debate that would suggest consumers benefit from product regulation as a governance structure that efficiently resolves bilateral exchange problems.¹⁴ However, there is still some use in speculating about the producers' interests at stake in the implementation of the disclosure policy GSW advocate as the appropriate response to overload issues. GW's experimental work suggests, in fact, that some producers may benefit from mandated disclosure. They state that for a firm with a comparative advantage in producing a specific product attribute, the successful marketing strategy is to lower the costs of observing that attribute with respect to *all* brands in the product's class, and not simply with respect to the firm's own brand.¹⁵ Since obtaining the pertinent data concerning rival products to enable consumers to make attribute comparisons would be quite costly for the individual firm, the firm with the comparative advantage gains, vis-à-vis its competitors, from government mandated disclosure. But if consumers desire the attribute, then they benefit from the disclosure as well. If there is a wealth transfer in this context, it is an intra-industry transfer from one set of firms to another.

We also know that problems faced by one firm in an industry can create negative externalities for all firms. For instance, announcements of product recalls in the drug and automotive industries result in stock price losses for all firms in the industry, and not just for the firm that is the subject of the recall.¹⁶ With an experience good, whose attribute levels are not observable prior to purchase and use, a firm could attempt to profit from low-quality production, and its buyers (and others to whom they convey their experience) might be reluctant to purchase the product (at a high-quality price) from any manufacturer in the future. In such a scenario, firms that produce at the minimally acceptable high-quality level would back disclosure regulation that would knock out or at least identify the low-quality competition. Again, while this story explains why firms might support disclosure laws, it is not inconsistent with benefits to consumers, assuming the attributes in question are those consumers demand. Indeed, the high-quality attribute firms might well favor a system of mandatory attribute quality *levels* rather than disclosure, for such a regulatory scheme would more directly eliminate low-

14. *But see* Goldberg, *The Economics of Product Safety and Imperfect Information*, 5 BELL J. ECON. & MGMT. SCI. 683 (1974) (minimum standards may reduce transaction costs of search). For this to be so, all consumers would have to want the minimum amount of information. *See generally* O. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM* (1985).

15. Grether & Wilde, *An Analysis of Conjunctive Choice: Theory and Experiments*, 10 J. CONSUMER RESEARCH 373, 383 (1984).

16. Jarrell & Peltzman, *The Impact of Product Recalls on the Wealth of Sellers*, 93 J. POL. ECON. 512 (1985).

cost competitors, while consumers, who want to trade-off quality and price, would prefer disclosure.¹⁷

These theoretical possibilities can lead to the formulation of further empirical research projects that would help policy analysis in the consumer law field. It would be interesting to know which firms support what types of disclosure rules. For example, do firms with comparative advantages at producing large (small) amounts of desirable (undesirable) attributes push for their disclosure; under what circumstances, if at all, do we see minimum cutoff, rather than disclosure, legislation; what happens to firms' stock prices when disclosure (or cutoff) rules are adopted; and does the degree of competition in a product market change after the implementation of such rules?

Of course, attribute disclosure requirements may increase product prices, an outcome GSW dismiss as insignificant. If data is not readily available to the firm, it must be produced, and it must also be communicated to consumers. These costs are independent from any cartelization effect. The appropriate question is, therefore, whether the price increase is offset by the benefits of improvements in consumer decisionmaking. While consumers may not overdose on information, they may not want to foot the bill for it either. In any event, estimates of disclosure costs would be helpful for making more informed policy recommendations.

The reference to costs and benefits leads me to another unmentioned issue in the GSW paper: if consumers desire information concerning certain attributes, why don't firms voluntarily provide that information? GSW appear to contend that the disclosure problem arises from too few consumers searching for the desired attribute, so that firms do not receive the demand signal. But we do know that many firms invest substantial sums to learn what consumers want—marketing research is a thriving commercial (and educational) sector. In the absence of either extremely high disclosure costs, idiosyncratic consumer tastes or barriers to entry in a particular product market, it is difficult to imagine that demand for the observation of a particular attribute would go unsatisfied. To put it another way, if the benefits of disclosure outweighed the costs, I suspect that the attributes would be disclosed by producers without the necessity of prodding by the state. There is some support for this conclusion: in the securities law context, most of the information whose disclosure was mandated by federal law was voluntarily provided to investors prior to

17. Cf. Maloney & McCormick, *A Positive Theory of Environmental Quality Regulation*, 25 J. LAW & ECON. 99 (1982) (environmental quality regulation reduced output and restricted entry benefiting certain producers and not consumers).

the passage of the legislation.¹⁸

One might contend that voluntary disclosure is not feasible because consumers would be unable to verify a firm's claims without government certification and, consequently, would not pay a price sufficiently high to cover the cost of disclosure. But this is not a convincing argument as a state agency is not the only mechanism for warranting the accuracy of a firm's disclosures. Third party institutions often test or guarantee attribute levels; familiar examples are *Consumer Reports* and, for financial assets, public accounting firms.

Inadequate voluntary disclosure might be more likely in the case of undesirable attributes, such as a product's carcinogenic content. Another empirical project would be to see if most disclosure requirements consist of such matters. Yet even for negative product attributes, one could hypothesize the existence of private incentives for releasing the information. First, one constraint on nondisclosure is the fear of subsequent lawsuits, particularly if punitive damages are awarded.¹⁹ Second, especially in today's world of health and safety conscious consumers, nondisclosure could backfire: consumers may interpret no news as bad news. Such a perception could force firms to disclose even undesirable attributes to allay the development of unduly negative views of their product's attributes. But this argument may be more convincing with respect to financial assets. The inference from no good news about a firm's prospects may more certainly be bad news in that context because the number of relevant product attributes for corporate securities is far less than that for most consumer products. Nondisclosure in that case may, therefore, be more highly correlated with the existence of negative information.

Questions concerning the adequacy of private incentives are also relevant for evaluating EW's speculations on the existence of cognitive problems in attorney-client relations. EW suggest that lawyers may fall into a variety of cognitive illusion traps in tending to their clients' affairs, such as misleading themselves about a client's problems or goals by relying too heavily on the client's narrative.²⁰ I think the appropriate way to examine this thesis is to ask: What are the incentives for attorneys who handle numerous cases during their lifetimes? Are they more like

18. Benston, *Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934*, 63 AM. ECON. REV. 132 (1973).

19. Cf. Haddock & Spiegel, *Punitive Sanctions, or Property Rules and Liability Rules: One View of the Edgeworth Box* (1985) (unpublished manuscript; copy on file with the *Southern California Law Review*).

20. Edwards & von Winterfeldt, *supra* note 6, at 271-72.

weather forecasters, whom EW describe as successful prognosticators, or like the experiment subjects who commit systematic decisional errors? Once phrased, the question answers itself: lawyers are repeat players in the legal system who feel a financial pinch if they badly misjudge a client's case. Unlike the subjects in the experiments, and like the forecasters who are linked to their Brier scores, attorneys' livelihoods are on the line if they repeatedly misperceive the cases before them.

There are obvious incentives for a lawyer to probe the client's story. If the lawyer does not, the opposing attorney surely will. In addition, because many lawyers specialize and handle a number of similar cases, they develop a good working knowledge of the client goals and problems that can arise in most legal situations, even if a particular client is not articulate. Fee structures also help: whereas contingent fees provide a lawyer with an incentive, among others, to investigate the client's claims, fixed hourly rates provide a client with the impetus to state precisely his or her objectives and describe the complaint. Furthermore, lawyers can be held liable for malpractice, although the issues EW discuss are unlikely to create such a cause of action for a client. While these factors certainly do not resolve end-period problems or analogous situations, such as the drafting or planning of a transaction in which errors would not become apparent until years later, other mechanisms do mitigate the problem, such as large law firms, which, surviving the lifetimes of individual members, develop valuable reputations.²¹ In sum, notwithstanding the legal profession's efforts at cartelization by regulating advertising and entry, the practice of law is highly competitive, and, accordingly, the occurrence of the difficulties EW hypothesize in the attorney-client relation seems, to me, largely illusionary.

III

Reading the GSW paper as someone whose work is primarily in corporate law, I found the policies advanced in the consumer law field more foreign than I had expected. For although mandated disclosure to protect investors is a long-standing, albeit widely debated, policy of corporate law, the perils of information overload are virtually unnoticed in the field.²² If overload concerns enter the corporate law discourse, they

21. See Gilson & Mnookin, *Sharing Among the Human Capitalists: An Economic Inquiry into the Corporate Law Firm and How Partners Split Profits*, 37 STAN. L. REV. 313 (1985).

22. One of the few examples in corporate law of an information overload argument, although it was not used to advocate increased regulation, is a decision striking down a state anti-takeover law which required more extensive disclosure than the federal legislation on the ground, among others,

take the form of prescribing what firms can *disclose*, and not what they can sell. A suggestion to restrict the number of stocks available in the marketplace because investors will be confused by having too many securities from which to choose would, I think I can safely say, universally be thought to be ludicrous. But why, then, are suggestions to limit the number of products available on supermarket shelves, as opposed to the New York Stock Exchange, considered any less absurd?

The first contrast between financial assets and consumer products that comes to mind concerns product attributes. Although the number of securities (brands, if you will) is extremely large, the number of choice attributes is quite small. In modern portfolio theory, the investor's choice depends on two parameters, risk and return, under relatively reasonable assumptions concerning the distribution of financial asset rates of return and investors' attitudes towards risk. Further, these two factors are linearly related, and hence the most popular valuation model, the capital asset pricing model, collapses the investment choice into one attribute—the security's sensitivity to changes in the expected rate of return on the market portfolio (the stock beta). Thus, the number of attributes that consumers of financial assets need to consider is smaller than the number of attributes of the products of concern to GSW. Accordingly, consumers of financial assets presumably eliminate the initial noncompensatory choice stage of decisionmaking that GSW detail. Still, the use of salient attributes makes consumer product choices approximate the limited number of relevant characteristics of securities.

A further possible distinguishing factor may be the degree of homogeneity in investor preferences. We need not engage in much guesswork regarding consumer preferences in corporate law. A very reasonable assumption is that investors want to make as much money as they can on their investment, although their degree of tolerance for risk or their tax situation will vary. One of the elegant theorems of finance is the Fisher Separation Theorem, which states that in perfect capital markets the consumption and investment decisions may be separated and hence, managers need not inquire into shareholders' preferences in order to operate the firm. By contrast, in the consumer area, consumption preferences are the crux of production decisions, and these preferences vary considerably among individuals. Firms, or more properly their investment bankers, may therefore have a better grasp of the demand curve they face in the capital market than in their product markets. Thus, they may know with

that more information is not necessarily better. *See* National City Lines, Inc. v. LLC Corp., 687 F.2d 1122, 1131-32 (8th Cir. 1982).

greater confidence the essential attributes that need to be disclosed. This would support a view that voluntary disclosure could work well, or at least better, in the financial asset context, than in the consumer product context.²³ It also suggests that an overload phenomenon is not likely with respect to financial assets.

Furthermore, the risk to a consumer of a financial asset is limited to the loss of the investment, whereas the damage from a hazardous product may well exceed its cost. This difference in exposure may require that more information be disclosed for consumer products, to identify the potential dangers and to allow the consumer to undertake difficult subjective damage assessments. As a result, an overload phenomenon may, again, more plausibly be thought to arise in the consumer product market.

More important, many investors in financial assets rely on the advice of experts for their decisions. A critic might contend that this simply leads to the infinite regress that investment advisors, rather than investor-consumers, will experience the inevitable overload. But EW's findings show that expertise minimizes cognitive errors and thereby stem the brunt of such an objection. I am tempted to assert, from the existence of such institutions in the financial asset market, that if expertise were necessary to avoid difficulties for consumers making product purchase decisions, some analogous services would emerge for those products. Several examples of the use of experts for consumer goods come to mind, such as hiring interior decorators and, more generally, reading *Consumer Reports*.²⁴

Finally, GSW argue that standardized disclosure may reduce search costs and consequently lead to optimal decisionmaking. The SEC's administration of the securities laws roughly standardizes the presentation of the information it requires firms to provide, although whether that information is either helpful to investors or worth its cost is a matter of considerable controversy. In addition, private organizations impose uniformity on firms, such as through the accounting profession's promulgation of generally accepted accounting principles. The standardized

23. For a recent survey of the justifications for mandated disclosure in securities law, see Easterbrook & Fischel, *Mandatory Disclosure and the Protection of Investors*, 70 VA. L. REV. 669 (1984).

24. Of course, the use of experts does depend on their cost in relation to expected benefits. Thus, even if expert advice would improve ordinary consumption decisions by the same degree of magnitude as it aids in portfolio selection, we might only see its use in the financial asset context because investment decisions involve a greater absolute amount of a person's wealth. This explanation is analogous to GSW's discussion of the different and more extensive search strategies that consumers adopt for big ticket items.

format of financial information may curb the potential for what GSW perceive to be bona fide overload concerns. Standardization may thus signal that the optimal amount of consumer search takes place in the capital market.²⁵ The market efficiency theory of finance further implies that the information problems contributing to the overload idea that GSW describe for consumer product markets will not occur in the capital market: in an efficient market, there is not much information for individual investors to process independently since the stock price fully reflects all publicly available information concerning firm value.

I have tried to suggest, by the exercise in contrasting financial assets and consumer goods, how information overload concerns could go unmentioned in one field while receiving attention in another. I remain unconvinced as to the need for a policy restricting consumer choice and I am willing to accept GSW's position on disclosure, assuming that the costs are trivial. Yet perhaps the most valuable aspect of both papers is not their message for specific policies, but rather their program for research. GSW's and EW's work highlights the crucial importance of the modeling and testing of theories for policy analysis and, further, the as yet untapped potential of experiments as an excellent avenue for research. The promise of the experimental literature is immense, for it offers alternative ways to begin to test and refine behavioral theories that are critical for rendering informed decisions on legal issues. And that is the closing compliment that I have to extend to the authors of these two interesting papers: they are the harbingers of an exciting time for interdisciplinary research.

25. In fact, some are of the view that there is too much search. See Hirshleifer, *The Private and Social Value of Information and the Reward to Inventive Activity*, 61 AM. ECON. REV. 561 (1971).

