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Biased Advice

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ABSTRACT

The modern capitalist society, characterized by decentralized decision making and increasingly sophisticated products and services, turns on relationships of epistemic reliance, where laypersons depend upon advisors to guide their most important decisions. Yet many of those advisors lack real expertise and many are biased by conflicting interests. In such situations, laypersons are likely to make suboptimal decisions that sometimes aggregate into systematic failures, from soaring health care costs to market crashes. Regulators can attempt to manage the symptoms and worst abuses, but the fundamental problem of biased advice will remain. There are many potential policy solutions to the fundamental problem, from outright bans on conflicting interests to disclosure mandates, yet their comparative effectiveness is poorly understood.

By constructing a decision task for human subjects and providing advice in various scenarios, this Article reports new field experiments testing alternative policy mechanisms. Prior research has shown that disclosure mandates can be deleterious if they make advisors more biased, but this paper contextualizes those findings. It turns out that disclosures may be valuable in settings where relative expertise is low, but deleterious where relative expertise is high. By also disaggregating the data, one finds that disclosures of conflicting interests may hurt laypersons in the majority of situations where the conflicted advice is not actually biased. Thus, the evidence suggests that, if they are to be at all effective, disclosure mandates should be narrowly tailored.

Most importantly, the evidence shows that a disclosure mandate improves layperson performance when unbiased advisors are also available. Yet

laypersons appear to be poor judges of their need for unbiased advice, so market mechanisms may be ineffective for provisioning unbiased advice. In the end, the presence of an unbiased advisor is the strongest determinant of layperson performance, and thus policymakers must develop ways of aligning the interests of advisors and laypersons. Pay-for-performance, blinding of experts, and mandatory or subsidized second-opinion policies are likely to be helpful in aligning these interests.

INTRODUCTION

A. The Problem

Atul Gawande recently illustrated the economics of the practice of medicine in America by profiling one area—McAllen, Texas—which leads the nation in the problem of increasing health care costs without observable increases in quality:

> General surgeons are often asked to see patients with pain from gallstones. If there aren't any complications—and there usually aren't—the pain goes away on its own or with pain medication.
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> . . . A surgeon has to provide reassurance (people are often scared and want to go straight to surgery), some education about gallstone disease and diet, perhaps a prescription for pain; in a few weeks, the surgeon might follow up. But increasingly, I was told, McAllen surgeons simply operate. The patient wasn't going to moderate her diet, they tell themselves. The pain was just going to come back. And by operating they happen to make an extra seven hundred dollars.[1]

This vignette depicts a situation of epistemic reliance.[2] The surgeon has a much better ability to determine how best to treat gallbladder pain compared to the patient, a layperson untrained in medicine, and the patient thus reasonably relies upon the surgeon for advice. This vignette also depicts conflicting interests, where the surgeon is in part motivated (perhaps only subconsciously) by the prospect of receiving payment for the service of surgery, while the patient instead seeks health and, all other things being equal, prefers to avoid the expenses, pain, inconvenience, and risks of needless surgery. Whether these conflicting interests cause surgeons to make different recommendations than they would otherwise make, i.e., whether the conflicts cause biases, is an empirical question.[3]

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[1] Atul Gawande, *The Cost Conundrum*, NEW YORKER, June 1, 2009, at 36, 36, 38.

[2] Epistemology is the philosophical study of knowledge, i.e., how persons develop justified true beliefs. I call the expert–layperson relationship "epistemic reliance" because the layperson is unable to directly assess the truth, but instead must rely upon the advisor who is more able to do so. *See generally* THE PHILOSOPHY OF EXPERTISE (Evan Selinger & Robert P. Crease eds., 2006) (collecting essays exploring this epistemic relationship).

[3] *See* Alan L. Hillman et al., *How Do Financial Incentives Affect Physicians' Clinical Decisions and the Financial Performance of Health Maintenance Organizations?*, 321 NEW ENG. J. MED. 86, 86 (1989) (reviewing the evidence).

These sorts of situations, where informational asymmetry exists between doctor and patient, and their motivations are out of sync, can be found throughout medicine. As one recent report explained the general problem:

> [C]onsumers . . . face a huge knowledge gap compared with care providers and are therefore highly reliant—and understandably so— on the advice and guidance of their physicians. In the absence of evidence to the contrary, patients may often assume that more care, or more expensive care, will lead to better outcomes.
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>   . . . [Meanwhile, f]ee-for-service reimbursement, the primary method of payment for outpatient care, . . . creates financial incentives [for physicians] to provide more care, and care that is more costly. More visits, more tests, more procedures all add up to more pay for providers and higher costs to the system.[4]

In the aggregate, as laypersons' choices are systematically skewed by such biased advice, the problem creates massive externalities and systematic failures. While serving as the director of the Congressional Budget Office, Peter Orszag argued that "our country's financial health will in fact be determined primarily by the growth rate of per capita health care costs," and he pointed at fee-for-service incentives as a primary cause.[5] The health care industry is characterized by radically distributed decision making, with each patient deciding upon her own course of treatment within the range of treatments offered by providers and covered by public and private insurers. Thus, real reform of health care costs may need to focus on fixing the relationship of epistemic reliance and the conflicting interests at the bottom levels of the health care economy, since that is where the decisions are made.

For another example of this problem of epistemic reliance and bias, consider the wave of home mortgage foreclosures that contributed to the "Great Recession." In the wake of the mortgage-lending debacle, which rocked global financial markets and caused policymakers to make unprecedented interventions in the financial industry, the Federal Deposit Insurance Corporation took a hard look at the subprime lending products and practices of the mortgage industry.[6] Were too many loans being made to unqualified borrowers? Were the exotic mortgage products destined to fail?

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[4] DIANA FARRELL ET AL., MCKINSEY GLOBAL INST., ACCOUNTING FOR THE COST OF U.S. HEALTH CARE 28, 31 (2008), *available at* http://www.mckinsey.com/mgi/reports/pdfs/healthcare/US_healthcare_report.pdf.

[5] Peter R. Orszag & Philip Ellis, *The Challenge of Rising Health Care Costs—A View from the Congressional Budget Office*, 357 NEW ENG. J. MED. 1793, 1793–94 (2007).

[6] *See generally* Ryan Lizza, *The Contrarian*, NEW YORKER, July 6, 2009, at 30 (describing governmental responses to the foreclosure crisis).

The financial industry executives demurred about their practices and products, pointing instead toward the decentralized decisions made by every homebuyer taking out a mortgage and every homeowner considering a refinance.[7] The executives said, "You know, it's kind of like the N.R.A.—people kill people, not guns! It's not the mortgages, it's the borrowers."[8]

There is some truth in that demurrer. Notwithstanding all the regulations at the margins, a mortgage agreement is ultimately a contract, founded on the idea of voluntarily chosen promises.[9] Borrowers can bind themselves for decades to whatever financial products the banks want to offer them, and if the borrowers make bad decisions, then they suffer the consequences, along with the banks that made the bad bets when they issued the mortgages to those borrowers.

The borrower-centric analysis ignores the reality of epistemic reliance and conflicting interests, which underlie these transactions. Borrowers have little ability to interpret voluminous and technical loan documents. Nor can they compare the real costs of the various contractual terms or use actuarial data to weigh the likelihood of defaulting, given various economic scenarios over the next few decades. As Elizabeth Warren explains,

> The effective deregulation of interest rates, coupled with innovations in credit charges (e.g., teaser rates, negative amortization, increased use of fees, cross-default clauses, penalty interest rates, and two-cycle billing), have turned ordinary credit transactions into devilishly complex financial undertakings. Aggressive marketing, almost nonexistent in the 1970s, compounds the difficulty, shaping consumer demand in unexpected and costly directions. And yet consumer capacity—measured both by available time and expertise—has not expanded to meet the demands of a changing credit marketplace.[10]

As a result, borrowers can either fly blind or rely upon the advice of others, most frequently mortgage brokers, who purportedly have expertise, experience, and information about the mortgage market, which the borrowers lack.[11]

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[7] *See id.*

[8] *Id.* at 34 (internal quotation marks omitted).

[9] *See* FDIC v. Hennessee, 966 F.2d 534, 537 (10th Cir. 1992) ("[A] mortgage is a contract and is generally subject to the rules of construction applicable to contracts.").

[10] Elizabeth Warren, *Unsafe at Any Rate*, DEMOCRACY, Summer 2007, at 8, 10.

[11] *See id.* at 12 (noting mortgage brokers' advertisements, e.g., "a friend to help you find the best possible mortgage" (internal quotation marks omitted)).

The borrower–broker reliance relationship is, however, skewed by conflicting interests. As Joseph Stiglitz explains in his postmortem on the causes of the Great Recession, mortgage brokers "were *supposed* to be working for the borrower, but they often received kickbacks from the lender— an obvious conflict of interest. . . . Worse, the brokers got the biggest rewards for steering borrowers into the riskiest mortgages, adjustable-rate loans with prepayment penalties, and even got kickbacks when the borrower refinanced."[12] In short, their advice was biased. If too many of these mortgages are being issued to unqualified borrowers, or if too many of these mortgages are defaulting, the brokers may be a major cause.[13] One scholar explains that this

> [i]nformation asymmetry [between borrower and broker] enables a predatory lender or mortgage broker to exert dominance over the borrower in the initial marketing of the loan and to insert into the loan documents terms that produce destructive effects, such as stripping the borrower's equity in her property or creating conditions that too often make foreclosure inevitable.[14]

If this account is correct, it expands the policymaker's inquiry beyond the legalistic notion of a contract as the voluntary promises of two parties and instead demands attention to the epistemic context in which these decisions are made, a context centered on a biased advisor.[15] As long as the primary decisionmakers in this economic system lack the epistemic resources to make wise decisions by themselves, and as long as their advisors are motivated by interests other than the well-being of the decisionmakers, it seems that individual failures and systematic problems are inevitable.

Escalating health care costs and the crashing mortgage finance sector are just two of the most obvious examples of the problem of biased expertise,

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[12] JOSEPH E. STIGLITZ, FREEFALL 89 (2010); *see also* Michael S. Barr et al., *Behaviorally Informed Home Mortgage Credit Regulation*, *in* BORROWING TO LIVE 170, 175–76 (Nicolas P. Retsinas & Eric S. Belsky eds., 2008) (describing incentives for mortgage brokers to steer reliant borrowers to more expensive loan options); Warren, *supra* note 10, at 12–13 (describing the type of "broker who is working only for himself, taking what amounts to a bribe from a mortgage company to steer a family into a higher-priced mortgage than it could qualify for, all the while assuring the family that this is the best possible deal").

[13] *See* Lloyd T. Wilson, Jr., *Effecting Responsibility in the Mortgage Broker-Borrower Relationship: A Role for Agency Principles in Predatory Lending Regulation*, 73 U. CIN. L. REV. 1471 (2005).

[14] *Id.* at 1473 (footnotes omitted).

[15] *See generally* Gillian K. Hadfield et al., *Information-Based Principles for Rethinking Consumer Protection Policy*, 21 J. CONSUMER POL'Y 131, 140 (1998) ("Perhaps the most important lesson that emerges from modern bargaining theory is the essential role that information, and in particular information asymmetry, plays in bargaining.").

where laypersons relied upon advisors to make some of the most important decisions in their own lives, but received bad advice that aggregated into systemic failures. Without looking beyond the front pages of the daily newspaper, one can find many other examples of this problem.[16] Indeed, one might argue that these sorts of decisions are archetypical of modern capitalism, which is defined by distributed, decentralized decision making. It depends on each farmer, each household, each worker, and each business to make their own more or less rational decisions as to their own consumption and production functions. As society becomes increasingly complex—as new medical treatments are discovered and new financial instruments are crafted, as new chemicals are put into our foods and as new high-tech tools are deployed in our workplaces—distributed decisionmakers must rely upon specialists who have developed expertise in understanding and using these sophisticated products. The economics of those advisory relationships then become the central questions for understanding the economics of society.

B. Potential Policy Solutions

When these ground-level problems between laypersons and their biased advisors bubble up into system-wide crises, policymakers may search for solutions. A reflexive answer is to implement top-down substantive regulations of affected industries. Regulators will and should aim for seemingly low-hanging (but rotten) fruit that can be easily lopped-off—i.e., banning those products that are little more than "tricks and traps" for consumers and that "have no place in a well-functioning market."[17] These are the products whose costs or risks are so obviously out of proportion to the benefits that no well-informed consumer would ever utilize them. Whether it

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[16]   For another example of this dynamic, scholars of the accounting industry explain:

> Conflicts of interest played a central role in the corporate scandals that shook America at the turn of the twenty-first century. Many companies have joined Enron and WorldCom in issuing earnings restatements as a result of inaccuracies in published financial reports. . . . At the root of both this mismanagement and the failure of monitoring systems lie conflicts of interest. . . . Accounting firms have incentives to avoid providing negative audit opinions to the managers who hire them and pay their auditing fees.

Don A. Moore et al., *Conflicts of Interest and the Case of Auditor Independence: Moral Seduction and Strategic Issue Cycling*, 31 ACAD. MGMT. REV. 10, 10 (2006). Investors rely upon these accounting firms' privileged access and special expertise in evaluating company finances, and simply must do so. Yet, the reliance relationship is undermined by such predictable biases. Similarly, scholars have pointed to the systematic biases that realtors insert into the real estate market, which were likely responsible for exacerbating the real estate bubble and also helped to destroy billions of dollars of net worth held by individual citizens.

[17]   Warren, *supra* note 10, at 11.

is an onerous term in a mortgage document or an unproven drug, the government is sometimes willing to substitute its judgment for those of the consumer and simply ban that transaction.[18] Let us call this general category of regulations, which specifically focus on the appropriateness of products and services, "substantive" regulations.[19]

Substantive regulation has limits. First, this sort of governmental paternalism is anathema to deeply held values. In medicine most clearly, it has long been understood that "[e]very human being of adult years and sound mind has a right to determine what shall be done with his own body."[20] There are also epistemic problems. Many products and services may be good for some consumers in some situations, but bad for others in other situations, which makes it quite difficult for the regulator to effectively control the substance of the transaction by *ex ante* decree. A given treatment may only work for 10% of patients, but the difficult question for the surgeon and the layperson is to determine whether *this patient* will be in the 10% or the 90%.[21] If laypersons could simply follow a rote guideline to decide whether to undergo surgery, or to determine which mortgage to buy, they would not need the expert's advice at all. Thus, the very category of cases where biased advice is the problem is also the category of cases where substantive regulation is least likely to be effective. In these contexts, substantive regulation becomes a blunt instrument, doing harm as often as it does good.[22]

Substantive regulation also faces a moving target. By simply capping interest rates, regulators of the consumer financial sector in the 1960s may have been able to do some good. But much has changed. As Elizabeth Warren

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[18] For example, a regulator can prosecute surgeons who order treatments that are obviously unnecessary, from the perspective of the regulator. *See, e.g.*, United States v. Campbell, 845 F.2d 1374, 1375 (6th Cir. 1988) (prosecuting a doctor for defrauding Medicare by ordering superfluous treatment).

[19] *See* Hadfield et al., *supra* note 15, at 134 (distinguishing between informational and substantive regulation).

[20] Schloendorff v. Soc'y of N.Y. Hosp., 105 N.E. 92, 93 (N.Y. 1914).

[21] *See* Richard A. Epstein, *Regulatory Paternalism in the Market for Drugs: Lessons from Vioxx and Celebrex*, 5 YALE J. HEALTH POL'Y L. & ETHICS 741, 746–47 (2005) ("The regulator who works upstream of the physician and patient lacks any knowledge of individuated circumstances that should rationally influence the decision of which drug, if any, to take, and in what dosage. So long as physicians and patients have some skill in locating the patient's position in the distribution, there is no reason to rely on the upstream averages that the FDA uses. Patients and physicians should be allowed to incorporate downstream knowledge into their decisions.").

[22] Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case for "Asymmetric Paternalism,"* 151 U. PA. L. REV. 1211, 1212 (2003) ("[T]o the extent that paternalism prevents people from behaving in their own best interests, paternalism may prove costly.").

writes, "[I]nnovation in financial products has produced incomprehensible terms and sharp practices that have left families at the mercy of those who write the contracts."[23]   When regulators do impose substantive controls, the financial industry simply innovates again to create new mechanisms to exploit their financial interests, in a pattern that scholars call a "regulatory dialectic."[24] Whether industry moves through loopholes left by captured regulators, or by redefining the financial products into new fungible forms, the problems seem to just return.[25]

Thus, real reform of health care and lending practices, to protect consumers and stabilize the economy over the long term, may require reform of the epistemic and economic situations in which patients and borrowers make their decisions. It may be more fruitful to focus reform efforts on those micro-level individual decisions themselves, if those are, after all, a root cause of the macro-level problems. There are several avenues for such regulation of the advisory relationship.

As an initial solution to this problem of biased advice, policymakers have mandated that advisors disclose their conflicting interests to the laypersons who rely upon them.[26] Reflecting this first policy solution is Federal Rule of Civil Procedure 26(a), which requires expert witnesses to disclose how much litigants pay for their services,[27] presumably so the laypersons on the jury can discount the testimony accordingly. Similarly, SEC Rule 10(b) requires that a broker who is acting as a principal in a transaction must disclose that fact to the customer.[28] Laws increasingly require that physicians disclose their ties to the pharmaceutical industry, at least indirectly through websites that are

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23   Warren, *supra* note 10, at 9.

24   *See e.g.*, Edward J. Kane, *Impact of Regulation on Economic Behavior: Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation*, 36 J. FIN. 355, 355 (1981); Merton H. Miller, *Financial Innovation: The Last Twenty Years and the Next*, 21 J. FIN. & QUANTITATIVE ANALYSIS 459, 461 (1986).

25   *See* Kane, *supra* note 24, at 355; *see also* Nathalie Martin, *1,000% Interest—Good While Supplies Last: A Study of Payday Loan Practices and Solutions*, 52 ARIZ. L. REV. 563, 590 (2010) (identifying ways in which payday lenders tweaked or repacked their financial products to avoid consumer protection regulations).

26   *See* Margaret Z. Johns, *Informed Consent: Requiring Doctors to Disclose Off-Label Prescriptions and Conflicts of Interest*, 58 HASTINGS L.J. 967, 1011–12, 1020–22 (2007) (detailing requirements that doctors disclose conflicting interests to patients).

27   FED. R. CIV. P. 26(a).

28   17 C.F.R. § 240.10b–10 (2009).

theoretically available to patients.[29] Realtors who undertake to represent both the buyer and seller in a transaction are required to notify the clients that "[r]epresenting more than one party to a transaction presents a conflict of interest since both clients may rely upon [the realtor's] advice and the client's respective interests may be adverse to each other."[30] Such disclosure mechanisms can serve two purposes: protecting laypersons' autonomy to make informed choices and improving the quality of the choices they make.[31] However, recent economic modeling and empirical research suggest that disclosure mandates may be counterproductive to the layperson's own welfare if they worsen the quality of advice given or undermine trust, and yet fail to improve layperson performance.[32] Still, many laypersons say that they want disclosures,[33] and policymakers continue to institute new and broader disclosure mandates.[34]

Another policy response is to proscribe the conflict by banning those who advise laypersons from also having conflicting interests.[35] For example, federal law prohibits doctors from receiving kickbacks for referring patients.[36] Likewise, the FDA "permits financially *dis*interested physicians to promote off-label indications . . . but forbids other physicians" who have ties to the

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[29] Arlene Weintraub, *New Health Law Will Require Industry to Disclose Payments to Physicians*, KAISER HEALTH NEWS (Apr. 26, 2010), http://www.kaiserhealthnews.org/stories/2010/april/26/physician-payment-disclosures.aspx (describing various laws that require physician–patient disclosure).

[30] ILL. ASS'N OF REALTORS, FORM 335: DISCLOSURE AND CONSENT TO DUAL AGENCY (2000), *available at* http://www.ppreservices.com/forms/dualagencyconsent.pdf.

[31] Dennis F. Thompson, *Understanding Financial Conflicts of Interest*, 329 NEW ENG. J. MED. 573, 575 (1993) ("An advantage of disclosure is that it gives those who would be affected, or who are otherwise in a good position to assess the risks, information they need to make their own decisions."); *see also* Johns, *supra* note 26, at 1015; Marc A. Rodwin, *Physicians' Conflicts of Interest*, 321 NEW ENG. J. MED. 1405, 1406 (1989).

[32] Daylian M. Cain, George Loewenstein & Don A. Moore, *The Dirt on Coming Clean: Perverse Effects of Disclosing Conflicts of Interest*, 34 J. LEGAL STUD. 1, 18 (2005); Ming Li & Kristóf Madarász, *When Mandatory Disclosure Hurts: Expert Advice and Conflicting Interests*, 139 J. ECON. THEORY 47, 48–50, 60, 62–63 (2008).

[33] Christine Grady et al., *The Limits of Disclosure: What Research Subjects Want to Know About Investigator Financial Interests*, 34 J.L. MED. & ETHICS 592, 597–98 (2006).

[34] Troyen A. Brennan & Michelle M. Mello, *Sunshine Laws and the Pharmaceutical Industry*, 297 JAMA 1255, 1256 (2007).

[35] *See* Troyen A. Brennan et al., *Health Industry Practices That Create Conflicts of Interest*, 295 JAMA 429, 431 (2006) ("[M]any current practices should be prohibited and others should be more strictly regulated to eliminate potential sources of unwarranted influence.").

[36] 42 U.S.C. § 1320a–7b(b) (2006); *see also, e.g.*, United States v. Goss, 96 F. App'x 365 (6th Cir. 2004) (applying the anti-kickback statute in the context of diagnostic referrals).

pharmaceutical industry from undertaking those same promotions.[37]   In the field of human subjects research, where clinicians induce their patients to join clinical trials, there are widespread calls for additional limits to create "financial neutrality between treatment and research, thus ensuring that a physician's decision to conduct clinical research, as well as his or her decision to recommend that a particular individual participate in a clinical trial, is grounded in reasons unrelated to investigator compensation."[38]   If these policies succeed, they convert conflicted advisors into non-conflicted advisors. They do so by forcing the advisor to choose between her advisory business and her alternative source of business.

An alternative policy option concedes that primary advisors may be biased but mandates that particularly vulnerable laypersons be given independent unbiased advice, before acting on the advice provided by conflicted experts. Some states require that senior citizens get a second opinion from an independent advisor before agreeing to a reverse mortgage on their homes.[39] Medicaid, Medicare, and private health insurers have required that patients get second opinions before acting on advice from physicians with conflicting interests.[40]   Likewise, under Oregon's Death with Dignity Act, a treating physician may recommend assisted suicide, but a patient seeking to end her life must get confirmation from a consulting physician, who may approach the case more objectively.[41]   The federal requirement that clinical research studies using human subjects must first be approved by an institutional review board (IRB) may also reflect this insight, because one primary function of the IRB is to independently assess the risks to layperson participants and provide some advice about those risks in an "informed consent" form.[42]   There are also

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[37]   Gregory Conko, *Truth or Consequences: The Perils and Protection of Off-Label Drug and Medical Device Promotion*, 21 HEALTH MATRIX (forthcoming 2011) (manuscript at 15), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1677609.

[38]   KATHLEEN M. BOOZANG ET AL., SETON HALL UNIV. SCH. OF LAW, CTR. FOR HEALTH & PHARM. LAW & POLICY, CONFLICTS OF INTEREST IN CLINICAL TRIAL RECRUITMENT & ENROLLMENT: A CALL FOR INCREASED OVERSIGHT 1 (2009), *available at* http://law.shu.edu/ProgramsCenters/HealthTechIP/upload/health_center_whitepaper_nov2009.pdf.

[39]   *E.g.*, MASS. ANN. LAWS ch. 167E, § 7 (LexisNexis 2009).

[40]   Susan P. Shapiro, *Bushwhacking the Ethical High Road: Conflict of Interest in the Practice of Law and Real Life*, 28 LAW & SOC. INQUIRY 87, 238 (2003); *see, e.g.*, Damare v. Occidental Petroleum Corp. Med. Care Plan, No. 92-1779, 1993 WL 92503, at *3 (E.D. La. Mar. 24, 1993) (quoting the second-opinion policy of one health insurer).

[41]   OR. REV. STAT. § 127.820 (2010).

[42]   *See* 21 C.F.R. § 56.109 (2010).

various ombudsperson programs, in which a purportedly independent advisor is assigned to protect the interests of a vulnerable class of persons.[43]

Some policies nudge laypersons toward independent advice, without actually mandating it. For example, lawyers are prohibited from entering into business transactions or settling malpractice claims with their own clients, unless the client is first "advised in writing of the desirability of seeking and is given a reasonable opportunity to seek the advice of independent legal counsel on the transaction."[44] Likewise, realtors who propose to serve in dual agency relationships must advise their clients "to seek independent advice from [their] advisors or attorneys before signing any documents in this transaction."[45] This sort of policy is something more than a disclosure of a conflict, but less than a mandate for a second opinion.

A related policy response is for the regulator itself to provide independent advice, or at least user-friendly information, to laypersons. In the litigation setting, courts have long had the power to bring their own expert witnesses, as an antidote to the biases of hired-gun expert witnesses.[46] With few exceptions, the courts have generally declined to do so, however.[47] In the market, government-mandated vehicle rollover ratings, gas mileage ratings, appliance efficiency standards, and annual percentage rates can be useful alternatives to the cheap talk of a salesman.[48] These interventions can be viewed as providing alternative sources of unbiased advice, or they can be understood as more fundamental solutions that reduce the level of epistemic asymmetry between advisor and client, by raising the abilities of the client.

Another policy solution is to do nothing, to assume that the market will itself resolve this problem. If laypersons need unbiased advice to make

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[43] *See, e.g.*, 11 U.S.C. § 333 (2006) (Bankruptcy Code provision providing for appointment of "patient care ombudsman" when health care provider declares bankruptcy); DEP'T OF HEALTH & HUMAN SERVS., EFFECTIVE OMBUDSMAN PROGRAMS (1991), *available at* http://oig.hhs.gov/oei/reports/oei-02-90-02122.pdf (surveying six such programs in the nursing home context); Maxwell J. Mehlman, *Medical Advocates: A Call for a New Profession*, 1 WIDENER L. SYMP. J. 299 (1996) (describing such programs in nursing homes and managed care programs).

[44] MODEL RULES OF PROF'L CONDUCT R. 1.8(a)(2), (h)(2) (2010).

[45] ILL. ASS'N OF REALTORS, *supra* note 30, at 1.

[46] FED. R. EVID. 706.

[47] *See* Christopher Tarver Robertson, *Blind Expertise*, 85 N.Y.U. L. REV. 174, 199–201 (2010).

[48] *See generally* ARCHON FUNG ET AL., FULL DISCLOSURE: THE PERILS AND PROMISE OF TRANSPARENCY (2007) (reviewing the history of informational disclosure mandates). On the other hand, in the financial industry, the pages and pages of legalese disclosures seem to simply present an opportunity to hide the most unscrupulous needles in a haystack of verbiage. *See* Warren, *supra* note 10, at 11–12 (describing the increasing length and complexity of credit card contracts).

decisions for their own welfare, then there should be a market of such advisors; laypersons could simply buy the advice that they need, paying a premium for unbiased over biased advisors, if necessary. For example, given the inaction of the courts to address the hired-gun problem in litigation, I have developed the concept of "blind experts," which would be brought by litigants themselves acting in their own self-interests.[49] Or in the health care setting, if one is concerned about the conflicts of interest inherent in a fee-for-surgery practice, one can instead join a managed care organization, though these surgeons may have the opposite biases.[50] In the financial markets, there are brokerages who are compensated on a fee-per-trade basis (which thus creates an incentive to churn the accounts), and there are others compensated on the basis of the amount of assets under management (which thus creates an incentive to perform, or to invest money in advertising for more clients at least).[51] There are other tradeoffs to be made; it may not be possible to perfectly align incentives, and laypersons may fail to appreciate and appropriately value non-conflicted advice over conflicted advice.[52] Whether laypersons actually do so is an empirical question explored below.

So a range of potential policy responses exists. Unfortunately, the comparative effectiveness of these multifarious policy alternatives remains poorly understood. Through a series of behavioral experiments in a laboratory setting, the present study tests these policies against each other and advances the hypothesis that the production and provision of unbiased sources of advice is the most promising policy solution to this problem of biased advice in contexts of epistemic asymmetry.

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[49] Robertson, *supra* note 47, at 179–80.

[50] *See* Howard Brody, *The Physician–Patient Relationship*, *in* MEDICAL ETHICS 75, 93 (Robert M. Veatch ed., 2d ed. 1997) (describing conflicts between patient welfare and obligations to health care plans in managed care situations).

[51] Craig J. McCann, *Churning*, 9 J. LEGAL ECON. 49, 49 (1999).

[52] *See generally* Saul Levmore, *Commissions and Conflicts in Agency Arrangements: Lawyers, Real Estate Brokers, Underwriters, and Other Agents' Rewards*, 36 J.L. & ECON. 503 (1993) (explaining why solutions to these sorts of agency problems are not found in practice as frequently as one might expect based on economic theory).

I.   HOW A MANDATORY DISCLOSURE POLICY CAN HURT LAYPERSONS BY DEGRADING THE ADVICE GIVEN

A. The Cain, Loewenstein, and Moore Study (CLM)

Only recently have scholars begun to test empirically how mandated disclosures about experts' conflicting interests actually impact layperson decision making. One might worry that such disclosure policies are useless, as several studies have suggested.[53] However, in 2005, Daylian Cain, George Loewenstein, and Don Moore published a study (CLM) concluding that disclosure mandates can actually be deleterious.[54] A disclosure mandate may actually hurt the very laypersons it is designed to protect.[55]

The CLM study merits extended discussion here not only for its intrinsic interest, but also because its methods are the basis for the present study. CLM put students at Carnegie Mellon University in either of two roles, "estimators" and "advisors," with the task of ascertaining the values of assorted coins in each of six jars.[56] This estimation task served as a proxy for real-world tasks that laypersons face, such as deciding how much a house is worth, how much a company stock is worth, and whether a surgical procedure is worthwhile given

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[53] For example, in one survey-based study, Lindsay Hampson and colleagues found that "[m]ost patients in cancer-research trials were not worried about financial ties between researchers or medical centers and drug companies and would still have enrolled in the trial if they had known about such financial ties." Lindsay A. Hampson et al., *Patients' Views on Financial Conflicts of Interest in Cancer Research Trials*, 355 NEW ENG. J. MED. 2330, 2330 (2006). An experimental study by Kevin Weinfurt and colleagues randomized human subjects considering whether to participate in a hypothetical clinical trial into three conditions: one where there was no disclosed conflict, one where the researchers disclosed that they had an equity stake in an interested business, and one where the researchers disclosed receiving a per-participating-patient payment from an interested business. Kevin P. Weinfurt et al., *Effects of Disclosing Financial Interests on Participation in Medical Research: A Randomized Vignette Trial*, 156 AM. HEART J. 689 (2008). Subjects in the equity group expressed significantly less willingness to participate than in the other two conditions, though the causal mechanism for this preference between the two forms of conflict was unclear. *Id.* at 691. Since there was no way to specify the optimal participation rate in each condition, the Weinfurt study provides no way to assess whether, on net, the disclosure mandate helped or hurt the participants.

    The disclosure problem also arises at a higher level, where physicians are the relative laypersons relying on the expertise of scientists advising them through biomedical journal articles. Gabriel Silverman and colleagues tested physicians reviewing biomedical journal abstracts that reported the efficacy of a new drug, with and without disclosed conflicts of interest. Gabriel K. Silverman et al., *Failure to Discount for Conflict of Interest When Evaluating Medical Literature: A Randomised Trial of Physicians*, 36 J. MED. ETHICS 265 (2010). The study found that the disclosures had no significant impact on the physicians' reliance on the study, as measured by the physicians' likelihood of prescribing the drug. *Id.* at 265.

[54] Cain et al., *supra* note 32.

[55] *Id.* at 22.

[56] *Id.* at 9.

its apparent benefits and costs.[57]   Although contrived and stylized, the coins task allowed the researchers to specify a concrete measure of accuracy, and thus provided a mechanism for judging layperson performance that may be analogous to real-world measures of utility (such as health or wealth), where the layperson's practical decision turns out to be objectively good or bad for him.

   To create epistemic asymmetry, CLM gave the estimators only glimpses of the jars of coins at a distance, but the advisors were given some expertise in the task, as they had more time to hold and examine the jars and were told a range of potential values.[58]   CLM also created conflicting interests.   The CLM estimators were always compensated on the basis of the accuracy of their estimates, while the advisors' compensation varied across the three conditions of the study.[59]   In the first condition (labeled "accurate"), the advisors were compensated based on the accuracy of the estimators, thus aligning their interests, and the estimator was advised of this fact.[60]   In the second ("high/disclosed") and third ("high/undisclosed") conditions, the advisors were told that they would be compensated based on how high the estimator's guess was. This fact was disclosed to the estimators in the second, but not the third, condition, and the advisors knew whether their conflict would be disclosed.[61] Thus, CLM was able to test the comparative effectiveness of the disclosure mandate in the high/disclosed condition versus the high/undisclosed condition, to determine which one best approximated the performance of the accurate condition.

   CLM found that estimators performed best in the accurate condition and somewhat worse when receiving biased advice in the high/undisclosed condition, as would be expected.[62]   More surprisingly, across the two conditions where a conflict of interest existed, the estimators did *worse* in the mandatory disclosure condition (high/disclosed).[63]   This occurred for two reasons. First, the advisors gave significantly worse advice in the disclosed

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   [57]   *Id.* at 20.
   [58]   *Id.* at 9–10.
   [59]   *Id.* at 10.
   [60]   *Id.* After receiving the substantive advice, the estimators were told: "Note: The advisor is paid based on how accurate the estimator is in estimating the worth of the jar of coins."   *Id.*
   [61]   *Id.* The conflict was disclosed as follows: "Note: The advisor is paid based on how high the estimator is in estimating the worth of the jar of coins."   *Id.* No such disclosure was given in the third condition, even though there was a conflicting interest.   *Id.*
   [62]   *Id.* at 17.
   [63]   *Id.*

condition than in the undisclosed condition.[64] The advisors apparently felt that the disclosure gave them a "moral license" to be even more biased, since the layperson was on notice that the advice may be biased and they could take it or leave it.[65] *Caveat emptor*. Second, the estimators failed to effectively use the disclosure to adjust for the inaccuracy of the given advice, presumably because they had little independent way to assess whether and to what extent the advisors were actually biased and because they had no other source of advice to rely upon instead.[66] When you are told that your only advisor is conflicted, it is not precisely clear what you should do with such information.

B. *The Present Experiment's Replication and Extension of CLM*

Like the CLM study, the present study involved layperson estimators relying on advisors for a coins-in-jars estimation task with incentives for accuracy, but this Article's study was conducted online. The specific methods for recruiting human subjects and running the experiment are described in the notes and the Methodological Appendix.[67] The study focused only upon the behavior of the estimators, here called laypersons, across twelve experimental conditions. Unbeknownst to the participants, the expert advice was simulated based on the results of the CLM study, using the means for reported advice given in the accurate, high/disclosed, and high/undisclosed conditions.[68]

Table 1 in the Appendix presents results on the comparable conditions in the CLM study and the present study. To measure the effectiveness of disclosures, the CLM study and the present study used "virtual errors," which are defined as the absolute value of the difference between the layperson's estimate and the expert's personal assessment in the accurate condition,

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[64] *Id.* at 13.

[65] *Id.* at 7.

[66] *Id.* at 17.

[67] This study used the same values of coins in six jars as the CLM study, though subjects were shown small, low-resolution photographs of such jars rather than actual jars. The jars photographed had the same total value as each of the CLM study's jars but likely consisted of different combinations of quarters, dimes, nickels, and pennies. The photographs were 359 by 336 pixels in size. See the Methodological Appendix *infra* for more information about the jars' values and photographs thereof.

[68] As in the CLM study, participants were told that they would receive advice from "advisors who have actually held those jars, who had several minutes to examine them, and who have been told the range of potential values." *Cf.* Cain et al., *supra* note 32, at 9 (discussing experimental methods). The participants were given the advice and other prompts depending on the experimental conditions, and were then asked to render estimates of the value of the coins. After each estimate, the laypersons also disclosed their confidence in the accuracy of their estimates. Once answers were submitted for one jar, participants then repeated the task for another jar and were not able to go back and change their answers.

averaged across the six jars.[69] This provides, as a benchmark, a measure of what an independent, well-informed observer thinks. If the laypersons performed as well as an expert, then one might assume that the advisory relationship was working perfectly.[70]

It is worthwhile to attempt to replicate the CLM findings.[71] Doing so confirms the essential relationships shown by the CLM study. First, as one would expect, laypersons performed worse when receiving biased advice. In the high/undisclosed condition (called 1BN here, for one expert who is biased but with no disclosure), their errors were larger than when relying upon unbiased advisors in the accurate condition (called 1UA here)—a difference of $1.29, or 36%.[72] More interestingly, just as in the CLM study, laypersons with biased advisors but no disclosures (1BN) did much better than those who had biased advisors who gave mandated disclosures of the conflict (1BC)—a difference of $1.64, or 34%.[73] All of the point estimates in the present study are statistically indistinguishable from those in the CLM study.[74]

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[69] *See* Cain et al., *supra* note 32, at 13 n.7 (defining virtual error); *id.* 16 tbl.6 (disclosing estimators' personal estimates).

[70] Still, a more obvious dependent variable would be to measure the absolute value of the difference between the layperson's estimate and the true value, and these results for "actual error" are reported in the Appendix. Following the CLM study, virtual error is instead used in this Article to account for the fact that both laypersons and experts systematically underestimated the value of the coins in the jars, and to avoid the peculiar finding that the advisor's upward bias due to a conflicting interest does not harm layperson accuracy, but instead helps correct for the natural bias. When absolute error is analyzed rather than virtual error, both the CLM study and the present studies found no statistical difference in *layperson* performance between those with accurate advisors and those with undisclosed conflicted advisors, even though the *advisors* gave significantly more biased advice in the latter condition. The difference in means is only $0.07 in the present study (p = .94). Although this is certainly a possible circumstance in real-world situations of epistemic asymmetry with conflicting interests, this would be a special case, and the study has greater external validity once that anomaly is resolved by reference to virtual error instead. Thus, henceforth this Article simply uses *layperson inaccuracy* as the primary dependent variable, but refers to virtual error in doing so.

[71] Ramal Moonesinghe et al., *Most Published Research Findings Are False—But a Little Replication Goes a Long Way*, 4 PLoS MED. e28 0218, 0218 (2007), http://www.plosmedicine.org/article/ fetchObjectAttachment.action?uri=info%3Adoi%2F10.1371%2Fjournal.pmed.0040028&representation=PDF ("As part of the scientific enterprise, we know that replication—the performance of another study statistically confirming the same hypothesis—is the cornerstone of science and replication of findings is very important before any causal inference can be drawn.").

[72] M_{1BN} = 4.85 (SE = 0.40), M_{1UA} = 3.56 (SE = 0.42), $t(80)$ = 2.20, p = .03, r = .24; *see* Cain et al., *supra* note 32, at 16 tbl.6 (reporting this data from the CLM study); *infra* Table 1 (providing statistical comparisons).

[73] M_{1BN} = 4.85 (SE = 0.40), M_{1BC} = 6.49 (SE = 0.30), $t(157)$ = -2.93, p < 0.01, r = .23; *see* Cain et al., *supra* note 32, at 16 tbl.6 (reporting this data from the CLM study); *infra* Table 1 (providing statistical comparisons).

[74] *See infra* Table 1 (reporting statistical comparisons).

As in CLM, a mandatory disclosure policy does not seem to help laypersons adjust their reliance on the advice received. Instead, it may only cause the expert advisors to become more biased.[75] Policymakers should thus be wary about the value of the disclosure mandates as a solution to conflicting interests.

Further study is necessary to understand whether and how to improve disclosure policies, and to explore alternative policy mechanisms to help laypersons in these situations of epistemic asymmetry and conflicting interests. The researcher fielded nine other experimental conditions for this purpose.[76] These conditions are discussed in the Parts that follow.

II. WHEN A DISCLOSURE, OR EVEN A BAN, MIGHT WORK, DEPENDING ON RELATIVE EXPERTISE AND DEGREE OF BIAS

A. Measuring Epistemic Asymmetry and Bias

A layperson–advisor relationship involves two distinct factors that impact layperson performance in context-dependent ways. First is the degree to which the advisor has expertise compared to the layperson, and second is the degree to which the advisor is subject to biases caused by conflicting interests. Each of these dimensions must be accounted for in policy making and experimental design.

The first factor is the difference between the estimation skills of the estimator (given his situation) and the advisor (given her situation); the advisor's comparative expertise is the very reason why the layperson may be tempted to place his reliance on the advisor. Alternatively, this factor could be called "epistemic asymmetry."[77] In the law of evidence the notion of being an "expert" is defined by a witness having "knowledge, skill, experience, training, or education" that the layperson jurors lack, and which would "assist" the jury in deciding the case.[78] In some situations, there will be a great disparity

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[75] To emphasize, this study does not retest the performance of the advisors (instead only assuming that they will perform as they did in the CLM study), but does replicate the findings showing how laypersons react to disclosures of conflicted interests.

[76] *See infra* Table 3.

[77] The term *information asymmetry* is widely used in economic bargaining theory. *See, e.g.*, Hadfield et al., *supra* note 15. *Epistemic asymmetry* is somewhat broader, since it also includes the skill, experience, training, or education that allows a party to make practical sense of the information that may be available to that party.

[78] FED. R. EVID. 702.

between the skills of the layperson and the advisor, who is truly an expert. In other situations, the advisor will have no real epistemic advantage. For example, expert testimony is not necessary to prove that a surgeon should remove his instruments and surgical sponges before sewing up a patient.[79] As the Federal Rule of Evidence 702 Advisory Committee noted:

> There is no more certain test for determining when experts may be used than the common sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute.[80]

Epistemic asymmetry is thus a relative measurement.

The same is true for conflicting interests. There are two potential concerns with conflicting interests—they can create biases in the advice given, and they can decrease the layperson's trust in his advisor, if the bias is disclosed or observed. For now, let us focus on the first problem.[81] There will be cases in which the conflicted expert has such extreme biases that his opinion will be almost worthless, even if he is highly skilled.[82] In other cases, the conflicted expert will have no discernable biases and thus be quite likely to provide his best estimate.

Thus, expertise and bias are two different dimensions of accuracy. Measurement of epistemic asymmetry was not possible given the design of the CLM experiment,[83] but the present study allows such measurement and thus allows more calibrated policy recommendations. In the present study, condition NoAdvisors asked the layperson to perform the estimation task without any expert advice at all. Laypersons in the NoAdvisors condition erred by $11.65 on average.[84] CLM reports that, in the accurate condition, the

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[79] *See, e.g.*, Burke v. Wash. Hosp. Ctr., 475 F.2d 364, 366 (D.C. Cir. 1973) (explaining that when a surgeon leaves his tools in a patient, it "appears to be that rare sort of case in which the type of harm itself raises so strong an inference of negligence, and the physician's duty to prevent the harm is so clear, that expert testimony is not required to establish the prevailing standard of care").

[80] FED. R. EVID. 702 advisory committee's note (quoting Mason Ladd, *Expert Testimony*, 5 VAND. L. REV. 414, 418 (1952)) (internal quotation marks omitted).

[81] The latter point is explored in Part IV *infra*. It is also worth noting that conflicting interests are not the only source of biases. Other biases are beyond the scope of this paper.

[82] *See, e.g.*, *In re* Silica Prods. Liab. Litig., 398 F. Supp. 2d 563, 627–28, 640 (S.D. Tex. 2005) (excluding expert testimony in part because compensation bias was prominent).

[83] Cain et al., *supra* note 32, at 16 tbl.6 (showing that lack of NoAdvisors condition in the CLM study).

[84] *See infra* Table 4 (reporting actual errors rather than virtual errors).

advisors personally estimated that the jars held $15.62 on average,[85] but the jars actually held $18.16 on average,[86] which means that the experts themselves erred by $2.54 on average (the difference). When one compares this $2.54 actual expert error to the $11.65 actual error of laypersons, we can compare the expertise of these two actors and see the epistemic asymmetry. Dividing these two average actual errors, one can conclude that in this experimental setting there is an epistemic asymmetry ratio of 459% between experts and laypersons. The errors of laypersons were more than four times the size of those of the unbiased experts.

One can likewise calculate a "bias ratio" to capture the inaccuracy of the advice offered when the advisor has interests aligned with the estimator, compared to when those interests are conflicted. First, to compute the bias when interests are aligned, subtract the advisors' personal estimates ($15.62) in the accurate condition from the average proffered advice ($16.48) in that same condition; this yields $0.86.[87] Second, to compute the bias when interests are conflicted, subtract the advisors' personal estimates in the accurate condition (again $15.62) from the average proffered advice in the high/undisclosed condition ($20.16); this yields $4.54.[88] As one can see, the discrepancy between the proffered advice and what advisors actually believe (that is, their personal estimates) increases from $0.86 to $4.54, when interests shift from aligned to conflicted. Dividing $4.54 by $0.86, we compute a bias ratio of 528%, which is the degree to which the inaccuracy of advice increases when interests are conflicted rather than aligned. In other words, in this study, advisors with conflicting interests give advice that is more than five times as inaccurate as advisors with aligned interests.

Thus, the CLM study and the present study explore a situation of large epistemic asymmetry of 459% and large bias of 528%. CLM found that a disclosure mandate did not help in this setting,[89] and this further analysis suggests that the reason may be that a layperson who rejected the biased advice would be left with his own poor estimates. Thus, regardless of whether the laypersons followed the bad advice or trusted their own bad estimates, the

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[85]   Cain et al., *supra* note 32, at 15 tbl.5.

[86]   *Id.* at 14 tbl.4 (averaging across row 1).

[87]   *See id.* at 15 tbl.5. It is not clear why there was any discrepancy between personal estimates and advice given in the condition where interests were aligned. It is possible that advisors were trying to offset systematic errors that they presumed that their estimators might make.

[88]   *See id.*

[89]   *Id.* at 6–7.

result was unlikely to be very good. This is the classic "out of the frying pan into the fire" sort of problem.

So, these ratios show that the estimates of the advisor and the layperson were both bad, just for different reasons. In this context, the disclosure mandate simply made the problem worse, since it worsened the advice given even further. The disclosure mandate essentially imposed a transaction cost on those laypersons who used the disclosure to switch their reliance from the advisor to themselves, with no real benefit.

B. Extrapolating to Real World Conditions to Test Policy Solutions

Can we generalize from the CLM study? It is important to emphasize that CLM constructed an artificial experiment in which the researchers created experts, who actually had privileged epistemic access to the truth (the value of coins in a jar). Yet, in the real world, not every advisor is an expert. Indeed, the CLM setting may be more the exception than the rule.[90] So, before extrapolating these findings, it would be useful to have a measure of the expertise ratio and the bias ratio in the specific setting where a disclosure mandate is proposed. Only if the ratios are comparable to those tested in the CLM study should we expect that the laboratory findings will have predictive value. What about real-world situations where "the experts" do not actually have much expertise? Or where the conflicting interests do not actually create biases? This section explores those variations.

Take the doctor–patient relationship. Plausibly, one might suppose that the epistemic asymmetry in the typical doctor–patient relationship is quite high (perhaps more than 459%), given the hard science underlying much of medicine, the extensive formal training physicians receive, and their individual and collective experience.[91] As for the bias ratio, one might hope that the

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[90] *See generally* DAVID H. FREEDMAN, WRONG 7 (2010) ("The fact is, expert wisdom usually turns out to be at best highly contested and ephemeral, and at worst flat-out wrong.").

[91] Carl E. Schneider & Mark A. Hall, *The Patient Life: Can Consumers Direct Health Care?*, 35 AM. J. L. & MED. 7, 31–34 (2009). Still, there are contexts where physicians have very little hard evidence to go on and may be proceeding on little more than trial and error. *See, e.g.*, Kevin A. Kerber & A. Mark Fendrick, *The Evidence Base for the Evaluation and Management of Dizziness*, 16 J. EVALUATION CLINICAL PRAC. 186, 189 (2010) ("Physicians rely on the medical literature to inform decisions, but our study suggests that the evidence base for dizziness evaluation and management is weak."); Christian Davenport, *Doctors Who Prescribe Oft-Abused Drugs Face Scrutiny*, WASH. POST, Jan. 1, 2011, at A01 ("Doctors 'don't get very much, if any, training in dependence, in addiction, in pain management' . . . ." (quoting R. Gil Kerlikowske, Director, White House Office of National Drug Control Policy)). And, evidence suggests that patients are increasingly turning to their own epistemic resources (such as WebMD or nontraditional healers), which may make the epistemic

professionalism of doctors will minimize the size of the financial biases in their advice, making it much smaller than CLM's observed 528%. Still, there is evidence that doctors (like all humans) respond to incentives, and incentives are often misaligned.[92] Moreover, even unbiased doctors may render biased advice if it is based on scientific findings that are themselves biased by the pharmaceutical industry.[93]

Therefore, in the particular setting of medical practice, CLM's findings may have relevance for policymakers—*if* the epistemic asymmetry and bias ratios are comparable. In other settings, where the epistemic asymmetry is smaller (because the advisors have little relative expertise), and the bias ratio is the same or larger (for example, if the advisor has few legal or social constraints on exploitive behavior), a disclosure mandate may be salutary. In that context, a disclosure mandate may cause laypersons to reject the biased advice and follow their own judgments instead.

Consider other contexts where it may be tempting to apply CLM's findings. One might suppose that the epistemic asymmetry in the retail stockbroker–investor relationship is relatively low for the task of selecting a stock or mutual fund, given the empirical research showing that performance of any particular investment is rarely better than random and almost impossible to predict.[94] Indeed, the efficient market hypothesis suggests that a random

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asymmetry better or even worse, depending on the quality of that information and the layperson's ability to use it. *See, e.g.*, Lisa Grossman, *The Net Doctor Will See You Now*, NEW SCIENTIST, July 25, 2009, at 20 (describing the increasing use of online medical resources in advance or in lieu of seeing a doctor). In principle, this overall asymmetry could be measured, for instance, by asking doctors and laypersons to each answer some context-relevant questions for which the answer is objective and scalar. For example, what is the one-year survival rate for patients with a given condition who go untreated? What is the one-year survival rate with the preferred treatment?

[92]   *See* sources cited *supra* notes 1–5.

[93]   *See generally In re* Zyprexa Prods. Liab. Litig., 253 F.R.D. 69, 106 (E.D.N.Y. 2008) ("The pervasive commercial bias found in today's research laboratories means studies are often lacking in essential objectivity, with the potential for misinformation, skewed results, or cover-ups."), *rev'd in part sub nom.* UFCW Local 1776 v. Eli Lilly & Co., 620 F.3d 121 (2d Cir. 2010); COMM. ON CONFLICT OF INTEREST IN MED. RESEARCH, EDUC. & PRACTICE, INST. OF MED., CONFLICT OF INTEREST IN MEDICAL RESEARCH, EDUCATION, AND PRACTICE 104 (Bernard Lo & Marilyn J. Field eds., 2009) ("Several systematic reviews and other studies provide substantial evidence that clinical trials with industry ties are more likely to have results that favor industry."); Christopher T. Robertson, *The Triple Blind: How to Stop Industry Bias in Biomedical Science, Without Violating the First Amendment*, 37 AM. J.L. & MED. (forthcoming 2011) (reviewing the evidence of industry influence in biomedical science).

[94]   *See* Laurent Barras et al., *False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas*, 65 J. FIN. 179, 181–82 (2010) (examining performance of various mutual funds and finding that very few reliably beat the market); Andrew Metrick, *Performance Evaluation with Transactions Data: The Stock Selection of Investment Newsletters*, 54 J. FIN. 1743 (1999) (finding that the stock picks of

walk down Wall Street is likely to be just as effective, and surely less expensive, than hiring an advisor for advice.[95] In that sort of situation, the advisor and layperson will do roughly equally well. Nonetheless, a conflicted advisor may exert a strong bias toward frequent trades, churning the account to maximize transaction fees.[96]

Likewise, real estate agents may have a relatively large bias toward advising their clients to buy (rather than rent) and pay more for a house, since the realtor is only paid upon a sale, and then as a portion of the sales price.[97] In these contexts, the bias of a conflicted advisor may be as large or larger than the 528% that can be derived from the CLM data.[98] Yet, the realtor might have very little real expertise for the task of predicting the appropriateness of a purchase for a particular family given its own needs and finances, nor will the realtor have any advantage in predicting *future* home prices.[99] One experimental study tasked both real estate agents and amateurs with appraising the market value of real houses, and found that both groups "were significantly biased by listing prices," a factor which seems to beg the question about the true value of the house.[100] The authors noted that the agents seemed less aware of (or less candid about) the role of listing price in their estimates.[101] Most importantly, the researchers found a "similarity of judgments" by both the experts and amateurs, and suggested that in such contexts where there appeared to be little epistemic advantage, "we might expect experts to talk a better game than amateurs, but to produce (on the average) similar results."[102]

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investment newsletters fail to outperform the market). *But see* Kent L. Womack, *Do Brokerage Analysts' Recommendations Have Investment Value?*, 51 J. FIN. 137, 137 (1996) (analyzing data and concluding that stock "[a]nalysts appear to have market timing and stock picking abilities").

[95] BURTON G. MALKIEL, A RANDOM WALK DOWN WALL STREET: THE BEST AND LATEST INVESTMENT ADVICE MONEY CAN BUY 24 (1996). *But see* Joshua D. Coval et al., *Can Individual Investors Beat the Market?* (Harvard Bus. Sch. Fin. Unit Research Paper Series, Working Paper No. 04-025, 2005), *available at* http://ssrn.com/abstract=364000 (presenting evidence that some skillful individual investors do appear to reliably beat the market).

[96] *See* McCann, *supra* note 51, at 49; Roni Michaely & Kent L. Womack, *Conflict of Interest and the Credibility of Underwriter Analyst Recommendations*, 12 REV. FIN. STUD. 653 (1999) (presenting evidence that stock analysts are biased by their relationships to the companies they rate).

[97] Mark S. Nadel, *A Critical Assessment of the Traditional Residential Real Estate Broker Commission Rate Structure (Abridged)*, 5 CORNELL REAL EST. REV. 26, 33 (2006).

[98] *See supra* text accompanying notes 86–88.

[99] Nadel, *supra* note 97, at 39–40.

[100] Gregory B. Northcraft & Margaret A. Neale, *Experts, Amateurs, and Real Estate: An Anchoring-and-Adjustment Perspective on Property Pricing Decisions*, 39 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 84, 95 (1987).

[101] *Id.*

[102] *Id.* at 95–96.

In these contexts, where epistemic asymmetry is low and bias is high, CLM's findings may be inapposite. A disclosure mandate that informs the layperson of the conflicting interest and drives the layperson away from such advice may be salutary, especially if it is strengthened in the ways discussed below. The efficacy of a disclosure mandate is thus highly contingent on context, as measured by these two ratios. Indeed, as the epistemic asymmetry ratio approaches zero and the bias ratio grows, other policy interventions, such as an outright ban on those with conflicted interests providing advice, will become more salutary. If the conflicting interests cause large biases, but the advisor has very little epistemic advantages anyway, then the net advice is unlikely to be helpful.

The NoAdvisors condition shows that this is definitely not the case under the present experimental design borrowed from CLM. When the layperson has no advisors at all, the layperson errs by $9.76 on average, which is much worse than the $6.49 error in condition 1BC, where a layperson is given advice from one expert with a bias and a disclosure of conflicting interests.[103] Indeed, the errors in the NoAdvisor condition are significantly worse than any other condition. Under this experimental setting, biased advice is much better than nothing.

This huge difference in layperson performance suggests that in contexts of epistemic asymmetry that are similar to the one tested here, it may be much more important to ensure that laypersons have *some* advice than it is to worry about whether that advice is biased (or not) or whether that bias is disclosed (or not). For example, in some regions in the United States, there is a severe shortage of primary care physicians, and thus many laypersons are not getting the preventative care they need.[104] Such persons may not be receiving efficient and necessary treatments such as prescription statins, which are shown not only to help patients but also to reduce net health care costs.[105] One could imagine a policy in which the pharmaceutical companies that manufactured statins sent their own health care professionals into underserved areas with the

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[103] $M_{NoAdvisor} = 9.76$ ($SE = 0.44$), $M_{1BC} = 6.49$ ($SE = 0.30$), $t(156) = 5.7$, $p < .001$, $r = .42$; *see infra* Table 3.

[104] Howard K. Rabinowitz et al., *Critical Factors for Designing Programs to Increase the Supply and Retention of Rural Primary Care Physicians*, 286 JAMA 1041, 1041 (2001) ("The shortage of primary care physicians in rural areas has been one of the most intractable US health policy problems of the past century.").

[105] Sheila Leatherman et al., *The Business Case for Quality: Case Studies and an Analysis*, 22 HEALTH AFF. 17, 20 (2003) ("Taking into account the clinical research literature on statins and statistical estimates of the longer-term costs of repeat heart attacks, the estimated ratio of cost to savings for effective treatment would be approximately 1:2.").

express goal of prescribing the drug, likely being biased in their decision making and thus overprescribing the drug compared to the optimal level. In such a context, if the cost of over-prescribing because of biased advice is less than the cost of underprescribing for lack of advice, policymakers might rationally prefer that laypersons receive such biased advice.

A ban on conflicted advice, on the other hand, can be dangerous in some contexts and helpful in others. Generally, where epistemic asymmetry is high, a ban on conflicted advice would be very bad policy, unless the policymaker can be confident that non-conflicted advisors would replace the conflicted advisors. Such replacement is not an obvious outcome of a ban on conflicted advice. To the extent that an advisor has a conflicting interest, the advisory services are being subsidized by some outside source.[106] Once that subsidy is removed by a ban policy, the layperson may no longer be able to afford the services of the advisor, who may instead find more lucrative work elsewhere. The conflict of interest may also be a function of the same relationship that creates the epistemic expertise. "For example, many both inside and outside the accounting industry have argued that an auditing firm is better equipped to handle a client's complex accounting tasks when the auditor also has deep consulting ties to that client."[107] Thus, policymakers must ask whether the asymmetry is greater than the bias ratio, and whether there is a viable alternative epistemic and economic relationship.

III. MAKING DISCLOSURES WORK BETTER THROUGH ANCHORING, INFORMATION TECHNOLOGY, AND PERSONALIZATION

Not all mandatory disclosures are created equal. This Part explores three potential ways to improve the efficacy of disclosures. First, policymakers might manipulate *when* disclosures are given, whether before or after the substantive advice. Second, policymakers might attempt to improve the *type* of disclosures given, to better enable laypersons to calibrate their advice. Third, policymakers can pay closer attention to *who* needs to receive disclosures, so as to maximize the benefits and minimize the harms of disclosure.

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[106] William M. Sage, *Some Principles Require Principals: Why Banning "Conflicts of Interest" Won't Solve Incentive Problems in Biomedical Research*, 85 TEX. L. REV. 1413, 1448–49 (2007).

[107] Moore et al., *supra* note 16, at 11.

A. When to Disclose

Prior behavioral research has shown that persons utilize an "anchor-and-adjust heuristic" to make decisions, one that is susceptible to undue influence from an initial prompt even after subsequent information is received.[108] If advice is provided first and a disclosure provided thereafter (as in CLM), the layperson may anchor on the bad advice before learning that it is unreliable. CLM speculated that such an anchoring problem may be a reason that disclosures fail.[109] Yet, this is a contingency that can be changed. I hypothesized that a disclosure mandate may work to improve layperson performance if the disclosure is given before rather than after the substantive advice. Condition 1BCF (<u>one</u> <u>b</u>iased advisor with a <u>c</u>onflict disclosed <u>f</u>irst) tests this hypothesis against condition 1BC, by simply putting the disclosure before the advice. This change does appear to reduce the laypersons' errors by about $0.24 in the experimental sample, but one cannot reliably extrapolate such findings since the estimate is far from statistically significant.[110]

Nonetheless, one might further hypothesize that the anchoring effect will be strongest during the layperson's first estimation task, and that as he proceeds through the second through sixth estimation tasks (recall that there were six jars), he has internalized the information, and thus performs quite like those in the control group of 1BC. This dilution effect would not occur in one-off transactions, and thus the current intervention may still have policy relevance for such situations.

This new hypothesis can be tested by examining only the laypersons' estimates on the first jar in the 1BC condition versus the first jar of the 1BCF condition. Indeed, when the disclosure is put first in 1BCF, layperson inaccuracy was improved by $1.06 ($p = 0.04$).[111] The more precise hypothesis is thus confirmed, and this evidence suggests that disclosure policies should, where practicable, target laypersons *before* they receive substantive advice from conflicted advisors. Disclosures seem to work better as a prophylactic than as a remedy.

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[108] Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1128–30 (1974).

[109] Cain et al., *supra* note 32, at 6.

[110] $M_{1BCF} = 6.25$ ($SE = 0.30$), $M_{1BC} = 6.49$ ($SE = 0.30$), $t(228) = -0.57$, $p = .57$. After initially finding a similar result, the researcher deployed conditions 1BC and 1BCF again in order to reduce the odds of incorrectly affirming the null hypothesis, thus resulting in double-sized samples. Even after these extraordinary efforts, the finding is far from significant.

[111] $M_{1BCF-Jar1} = 4.57$ ($SE = 0.28$), $M_{1BC-Jar1} = 5.63$ ($SE = 0.41$), $t(228) = -2.11$, $p = .04$, $r = .11$.

Nonetheless, this finding should be put in the context of condition 1BN, where there was <u>one</u> <u>b</u>iased expert, with <u>n</u>o disclosure given at all. For the first jars in 1BN, laypersons erred by $4.28 on average, which is statistically indistinguishable compared to a disclosure-first policy ($0.29 difference, $p = 0.6$).[112] Thus, putting disclosures first seemed to help ameliorate the problems with disclosure mandates in this experimental setting, but disclosure mandates were still worse than doing nothing about conflicting interests. An improved disclosure mandate thus appears to be a poor policy response to conflicts of interests, in this particular epistemic setting. Such a mandate seems to do nothing more than paper over a real problem for laypersons.

B. What to Disclose

Consider another method for improving the efficacy of disclosures. The CLM authors recognized that a disclosure of *conflicting interests* may not be particularly helpful to laypersons, because it does not provide information about whether the advisor is actually *biased* in her advice and, if so, to what degree.[113] Indeed, in 1BC (as in the CLM study), laypersons were merely told, "Note: The advisor is paid based on how HIGH you are in estimating the worth of the jar of coins."[114] Laypersons were left to speculate about how these interests actually impacted the advice given. In principle, this need not be the case; at least in some contexts, policymakers could provide better information to laypersons. This could be a practicable policy solution in the information age, where massive datasets and statistical methods may allow a regulator to monitor the behaviors of conflicted versus non-conflicted advisors (whether physicians, stockbrokers, or mortgage brokers), with resolution at a group level or perhaps individual level. Indeed, pharmaceutical companies already use such "datamining" techniques to customize their marketing efforts to low-prescribing and high-prescribing doctors.[115] Several states, and now the federal government, are developing databases of which physicians have relationships with pharmaceutical and device companies.[116] If such behavioral information were collected by a regulator, paired with conflicts information, analyzed in a useful way, and passed along to the laypersons who rely upon

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[112] $M_{\text{1BN-Jar1}} = 4.28$ ($SE = 0.50$), $M_{\text{1BCF-Jar1}} = 4.57$ ($SE = 0.28$), $t(155) = -0.53$, $p = .60$.

[113] Cain et al., *supra* note 32, at 20–21.

[114] *Id.* at 10.

[115] Robert Post, *Prescribing Records and the First Amendment—New Hampshire's Data–Mining Statute*, 360 NEW ENG. J. MED. 745, 745 (2009).

[116] Weintraub, *supra* note 29.

conflicted advisors, it would thereby allow the layperson to more precisely discount the advice given.

Notably, such a policy mandating disclosures of bias may have different effects on the *advisors'* behavior than a policy that merely requires disclosure of conflicting interests. Advisors may not even know that they are biased by their conflicting interests.[117] If advisors were simply told this information, then the social norming literature would suggest that the advisors might then change their behavior toward the norm.[118] Imagine, for example, that hospitals in McAllen, Texas, and other extremely high-cost regions were required to disclose to their patients that, even controlling for population health, they charge more than twice as much per person as other hospitals, yet the quality of care and patient outcomes are statistically indistinguishable from that of other hospitals. One might suppose that this sort of mandate would cause the physicians and other advisors to improve their behavior, so as to reduce or eliminate the need for such embarrassing admissions in the future. In principle, this sort of intervention could completely ameliorate the advisor-side problem with disclosures. On the other hand, one might hypothesize that this data would simply provide advisors with even more "moral license" to give even more biased advice, as CLM observed with regular disclosures of conflicting interests.[119] Perhaps this would be *caveat emptor* taken to the extreme. Resolving these competing hypotheses would be a fruitful avenue for future study. In any case, the present experiment does not measure the advisors' performance under this condition, but instead merely uses the advisor behavioral data from CLM's high disclosed condition, thus tacitly assuming that there would be no difference in advisor behavior.

Condition 1BCB (one biased advisor, with a disclosure of both the conflict and the average size of bias) tests this hypothesis, focusing just on how the strengthened disclosure would impact laypersons. In addition to a disclosure of conflicting interests (as in 1BC), condition 1BCB provides laypersons with more concrete information about the size of the conflicted expert's *bias* (rather than merely his conflicted interests). Specifically, in this condition, the

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[117] Moore et al., *supra* note 16, at 11 ("We argue . . . that doctors' advice is biased . . . and that they typically *believe* their biased advice is unbiased."); *see also* Gawande, *supra* note 1, at 40 (discussing how health care providers with a bias toward high-cost procedures treat patients without realizing the bias).

[118] *See* Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903, 930, 949 (1996) (considering how choices are based upon beliefs about facts, and how the communication of accurate facts can therefore change beliefs based on inaccurate facts).

[119] *See* discussion *supra* Part II.

experimenters told the subjects that "prior research has shown that advisors paid in this way tend to give advice that is $7.68 higher on average than the advice of advisors who are paid based on accuracy." This was a true statement, based on the data reported in CLM[120] and the prompts used in the present experiment.

Compare condition 1BCB against condition 1BC on the dependent variable of layperson accuracy. The addition of an average bias disclosure did not help layperson accuracy on average (but may have actually worsened it by $0.46 on average, although this is statistically insignificant, $p = 0.47$).[121] The hypothesis is rejected—a disclosure of the conflicted advisors' average level of actual bias does not appear to help the average accuracy of laypersons that rely upon those advisors. Another condition, 1BCBF, further suggests that it makes little difference when this bias information is disclosed, whether first, before the substantive advice, or thereafter. Like condition 1BCB, condition 1BCBF provided laypersons with disclosures about average advisor bias, but did so first, before providing the advisor's substantive advice. The slight improvement of $0.21 over 1BCB is not significant ($p = 0.81$).[122] Thus, the hypothesis that disclosing actual bias will help laypersons discount optimally must be rejected.

Although laypersons could have simply subtracted $7.68 from the advice they received, and thereby calculated (and used) the same advice received by laypersons with unbiased advisors (on average), they apparently did not do so. Why did this intervention fail? Participants were allowed to answer an optional final question, providing open-ended feedback on the study or describing their tactics, and some of the answers are relevant to this point. Although a few participants said, "I pretty much just subtracted the $7.00," as one would hope and expect, others receiving this bias disclosure said, "I pretty much ignored the adviser, they seemed like they were way off, and knowing they were biased meant there was no reason to take their word."[123] A significant number of respondents used the bias disclosure not as a mechanism

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[120] *See* Cain et al., *supra* note 32, at 15 tbl.5.

[121] $M_{1BCB} = 6.95$ ($SE = 0.64$), $M_{1BC} = 6.49$ ($SE = 0.30$), $t(170) = 0.73$, $p = .47$.

[122] $M_{1BCBF} = 6.74$ ($SE = 0.55$), $M_{BCB} = 6.95$ ($SE = 0.64$), $t(120) = -.247$, $p = .81$.

[123] A third subgroup of respondents in 1BCB and 1BCBF seems to have actually been misled by the disclosure of bias and provided even higher raw guesses than in the 1BC condition, drawing the average guess higher. Other than sheer confusion, or a failure to communicate clearly, no obvious hypothesis explains why this might happen. The increased standard deviation that comes with an average bias disclosure (3.28 in 1BC to 4.79 in 1BCB) suggests that there is more than simply a shift in means occurring in this data.

of calibrating their reliance more precisely, but rather as a strengthened warning suggesting that the advice is altogether worthless. Given the high levels of epistemic asymmetry in this experiment (measured in the prior Part), the tactic of ignoring the proffered advice turns out to be a very poor idea. Still, the findings in the prior section suggest that a specific bias disclosure may be more fruitful in contexts of low epistemic asymmetry (such as stock broker–client relationships or realtor–buyer relationships), as it would drive laypersons away from advice that had very little value in the first place. This deserves further study, in various epistemic contexts.

To disaggregate these trends, let us create a benchmark for layperson success in this task. Suppose that condition 1UA presents a decent benchmark for success, since it provides laypersons with <u>one</u> <u>u</u>nbiased advisor and a statement that interests are <u>a</u>ligned. The researcher constructed a proportional metric representing the percentage of participants in each condition whose guesses were as good or better than the $2.72 benchmark error of a median respondent in the 1UA condition. Let us stipulate that the participants more or less "succeeded" in the estimation task, if their inaccuracy was no worse than the laypersons' in the 1UA condition. By definition, 50% of the participants in 1UA performed at or better than their own median, but when the disclosed conflict is added in 1BC, only 11% exceeded the benchmark for success. However, when a policymaker added a mandate for disclosure of actual average bias in 1BCB, the "successes" increased to 21%. We have nearly doubled the number of successes.[124] As a matter of public policy, this could be a worthwhile investment, if it doubled successes, helping laypersons to overcome a given threshold and make better decisions (e.g., rejecting the gallbladder surgery recommended by their conflicted surgeon where there is no proven marginal efficacy).

The conclusions here are very tentative. It may be worthwhile to further pursue the concept of mandating disclosures of biased advisor behavior, perhaps with special attention to making the information useable to the laypersons who must rely upon it, so as to minimize confusion and maximize their ability to integrate the additional information into their process of weighing the advice against their own epistemic priors. At the end of the day,

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[124] This result is marginally significant at traditional levels. Using a chi-squared test comparing 1BC with 1BCB, $\chi^2(1) = 3.18$, $p = .06$. When 1BCB is combined with the statistically indistinguishable 1BCBF (where the only difference is that the disclosures are provided first, before the advice) and then compared with 1BC, the difference in success rates is significant, $\chi^2(1) = 3.82$, $p = .04$; the odds of "success" were 1.98 times higher in the (combined) 1BCB+1BCBF condition than in the 1BC condition.

this intervention may have a distributive effect, helping the savviest laypersons weigh the information they receive, but harming others who react poorly to the additional information. These effects may depend in part on the degree of epistemic asymmetry (i.e., relative expertise) in a given context. As discussed above, only in situations of high epistemic asymmetry will it be worrisome for a policy to drive a wedge between a layperson and her advisor. And, as discussed further below, in a robust marketplace for advice, a disclosure of bias may have the salutary effect of driving laypersons to better advisors—a choice that laypersons did not have in the present experimental conditions. The concept of bias disclosures (rather than conflict disclosures) thus deserves further study in other experimental and policy settings.

C. To Whom to Disclose

Consider a third potential way to improve disclosure mandates: by tailoring them to individual persons who need them while withholding them from laypersons who could only be harmed by them. Consider the likely real-world contexts in which a conflicting interest exists but some advisors remain unbiased—they do not change the advice that they give to some or all of their layperson clients, compared to the advice they would have given but for the conflict. Heterogeneity arises at two levels: (1) that of the individual advisors and (2) that of the individual laypersons who rely upon them.

First, advisors' professionalism—their technical training and ethical commitments—may prevent some of them from suffering biases, even when they have conflicting interests.[125] Even if the mean advice differs between conflicted advisors and non-conflicted advisors (as CLM reported, and we assume here), the distributions of the two groups are likely to overlap, such that a significant portion of the conflicted advisors will perform as well or better than the median non-conflicted advisor. The mere fact that an expert is conflicted does not necessarily imply that his advice is biased.[126]

The phenomenon repeats at the level of the individual layperson clients within each advisor. Even within the biased advisors, only some of their

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[125] *See* Robertson, *supra* note 47, at 193–95 (discussing the ways in which professionalism constrains the biases of experts, albeit imperfectly).

[126] *See, e.g.*, Pretty v. Prudential Ins. Co. of Am., 696 F. Supp. 2d 170, 189 (D. Conn. 2010) ("The mere fact that Prudential retained the medical experts to review the Plaintiff's file does not make their opinions unreasonable. The Plaintiff has also failed to provide any evidence of a history of biased claims administration by Prudential." (citation omitted)).

clients will receive biased advice compared to what they would have received from an unbiased advisor. This ratio will be particularly low where the advisor provides a binary sort of advice, as is often the case. For example, a doctor may advise either treatment S (surgery) or treatment L (lifestyle changes). Even if such an advisor becomes biased, this will just increase the frequency with which he gives the favored advice (S). Without the conflicting interest, a given doctor may have prescribed the surgery to 70% of his clients presenting with a given condition, but after succumbing to the bias, he then prescribes it to 85% of his clients. For most of the clients (aside from the marginal 15%), the substantive advice will be the same in either case, but the advice will now be accompanied by a warning about conflicting interests.

To simulate the performance of that majority group, participants in condition 1UC each received one u̲nbiased advisor (as in 1UA) but a disclosure of c̲onflicting interests (as in 1BC). As one might hypothesize, these laypersons suffered from the disclosure, having errors $1.21 larger on average than those in condition 1UA ($p = 0.049$).[127] Thus, these findings illustrate how, in the real-world settings of doctors' offices and mortgage brokerages, a disclosure mandate may often drive laypersons away from perfectly good advice. This is an important finding, identifying and demonstrating another way that disclosures may be deleterious to the people that they are designed to help.

From the perspective of layperson welfare, this is another piece of evidence that suggests that disclosure mandates are poor solutions for the problem of conflicting interests. The real solution would try to eliminate the conflicts in the first place. Still, if we continue to rely on disclosure mandates at all, as seems inevitable, it may then be best to narrow disclosure mandates to only those situations where we have some reason to believe that a particular advisor or set of advisors is actually biased (not merely exposed to a *potential* bias arising from a conflicted interest). Even better, we would further limit disclosure to those particular laypersons who are receiving the marginal advice that is different from what would have been given but for the bias. For example, as discussed above, there are extreme geographic disparities in health care costs across the United States, with health care providers in some regions charging for twice as many procedures compared to others, with no discernable improvement in quality.[128] In principle, a disclosure mandate could target only

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[127] $M_{1UC} = 4.77$ ($SE = 0.42$), $M_{1UA} = 3.56$ ($SE = 0.42$), $t(90) = 2.00$, $p = .049$, $r = .21$.
[128] Orszag & Ellis, *supra* note 5, at 1794–95.

the regions or institutions where costs are highest, where regulators expect that it is most likely that patients are suffering from biased advice. Thus, any benefits of a disclosure mandate can be captured without imposing the costs identified here. Or more particularly, depending on the resolution of the data, the mandate could be tailored to individual hospitals or even individual doctors.

In principle, targeted disclosures can work at the patient level. Scholars have found that doctors tend to practice quite similarly when the evidence and national guidelines are clear, but in some regions they exhibit biases for higher cost care when they make decisions under greater uncertainty.[129] Thus, to the extent that such situations can be identified *ex ante*, a disclosure mandate could be required for those situations but not others. As Margaret Johns has proposed, regulators could require physicians to disclose conflicts of interest when they write off-label prescriptions, but the regulators need not require disclosures when conflicted doctors prescribe on-label or in accordance with national practice guidelines.[130]

Putting aside this possibility of narrowly tailored disclosure mandates, the bottom-line finding of condition 1UC is important to emphasize. For another reason, crude disclosure mandates can be deleterious to the laypersons they are designed to help. Putting autonomy-based arguments aside, policymakers concerned with patient welfare should be careful not to force disclosures of conflicting interests unless they have credible evidence that the conflict actually causes a bias for the layperson, and evidence that the disclosure will make things better.[131] Furthermore, if they have such evidence of actual bias, the disclosure mandate should be tailored as narrowly as possible to specific groups of advisors and laypersons. Then, as discussed in Part III.B, the

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[129] Brenda E. Sirovich et al., *Regional Variations in Health Care Intensity and Physician Perceptions of Quality of Care*, 144 ANNALS INTERNAL MED. 641, 646 n.2, 648 (2006) (examining how doctors with poor communication with patients, restrictions upon autonomy, and a perceived scarcity of resources result in a higher cost of care).

[130] Johns, *supra* note 26, at 971. The FDA apparently prohibits physicians with industry ties from *promoting* a drug for an off-label use but allows industry-tied physicians to *prescribe* a drug for off-label use. *See* Conko, *supra* note 37, at 15.

[131] A fair question arises about the default rule. It may be a decent assumption that wherever there is a conflict of interest there is probably a bias in the aggregate advice rendered. The argument of this section has merely sought to show that there is a heterogeneity of advisors and a heterogeneity of laypersons, such that a statement about the aggregate cannot reliably be applied to each piece of advice individually. Such generalization would be an example of the ecological fallacy. *See generally* GARY KING, A SOLUTION TO THE ECOLOGICAL INFERENCE PROBLEM 3–17 (1997) (discussing ecological inferences and the ecological fallacy).

evidence of bias should perhaps be provided to laypersons themselves so that they can better assess the advice that they receive.

IV. CALIBRATING RELIANCE IN A MARKET FOR ADVICE

Part III explored ways to improve the efficacy of disclosure mandates. Even with such improvements, however, disclosures are likely to remain a suboptimal, or at least incomplete, solution for the fundamental problem of biased advice. One remaining hypothesis, not tested by CLM or the foregoing experimental conditions, is that disclosures may help laypersons choose amongst multiple conflicted and non-conflicted advisors if there is something like a market for advice. This Part applies several new experimental conditions to explore laypersons' baseline assumptions about advice, and whether affirmative disclosures may improve reliance and performance when interests are aligned. This Part also introduces several conditions in which laypersons are given multiple biased and unbiased advisors, with and without conflicting interests. Finally, by assessing the correlation between layperson confidence and performance, this Part concludes that market-based solutions are likely insufficient. Laypersons appear to have little self-awareness about their marginal performance with or without biased advisors, which thus makes more aggressive regulatory interventions appropriate.

A. Affirmative Disclosures of Aligned Interests

Almost two decades ago, scholars in biomedical ethics were already identifying a crisis in trust—patients had reduced their degree of reliance on their health care providers, to the detriment of both the patients' health outcomes and the esteem of the medical profession.[132] In dentistry, for example, the fee-for-service relationship creates deep conflicting interests, and there is even less oversight by insurers and government payors.[133] Dentists have begun to worry about polling data showing that the U.S. public trusts their honesty and ethics at a rate lower than that of nurses, pharmacists, and physicians.[134] The longer dentists have practiced, the more they are conscious

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[132] Edmund D. Pellegrino, *Trust and Distrust in Professional Ethics*, *in* ETHICS, TRUST, AND THE PROFESSIONS 69, 77–78 (Edmund D. Pellegrino et al. eds., 1991).

[133] *See, e.g.*, United States v. Talbott, 590 F.2d 192, 195–96 (6th Cir. 1978) (upholding rare convictions for mail fraud for unnecessary dental procedures).

[134] Barry Schwartz et al., *Perceptions About Conflicts of Interest: An Ontario Survey of Dentists' Opinions*, 71 J. DENTAL EDUC. 1540, 1540, 1548 (2007).

of the problems created by their conflicting interests.[135] Such lack of trust may mean that skeptical patients forego needed dental work.

Some scholars have suggested that disclosure policies may be part of the solution to this problem of diminishing trust in professional advisors.[136] Kevin Weinfurt, for example, hypothesized that in contexts of high epistemic asymmetry (as here), where a layperson does have an advisor whose interests are aligned, a disclosure of that fact may help the layperson become more accurate by making the layperson more trusting.[137] Condition 1UN of this study, which had <u>one</u> <u>un</u>biased advisor but <u>no</u> such disclosure, was designed to test this hypothesis against condition 1UA, where there was also <u>one</u> <u>un</u>biased advisor and laypersons were told, "Note: The advisor is paid based on how <u>a</u>ccurate the estimator is in estimating the worth of the jar of coins," as in CLM's accurate condition.[138]

The results were positive, showing that such an affirmative disclosure of aligned interests in 1UA improves layperson performance by $1.15 on average compared to the agnostic 1UN ($p = 0.05$).[139] This finding demonstrates that in our experimental setting at least, laypersons were naturally rather untrusting of the advice that came with epistemic advantages but without any information about incentives. The information about the advisors' aligned incentives seemed to overcome this natural distrust and increased reliance accordingly.

This condition also allows us to isolate the effect of a disclosure of conflicting interests, while holding the substantive advice constant. Let us construct a measure of the layperson's degree of reliance on the expert's advice, defined as the difference between the advice given and the estimate rendered. The larger that difference, the less the layperson appears to be relying upon the expert. In 1UA (where there was an <u>un</u>biased advisor and a disclosure of <u>a</u>ligned interests), laypersons' estimates were on average $3.64 away from the advice given, while those receiving a <u>c</u>onflicts disclosure in 1UC were on average $5.15 away from the advice given, a difference of $1.51 ($p = 0.02$).[140] In 1UN (where the <u>un</u>biased advice was the same but there was

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[135] *Id.* at 1548.

[136] Kevin P. Weinfurt et al., *Disclosing Conflicts of Interest in Clinical Research: Views of Institutional Review Boards, Conflict of Interest Committees, and Investigators*, 34 J.L. MED. & ETHICS 581, 581, 585 (2006).

[137] *Id.* at 581–83.

[138] Cain et al., *supra* note 32, at 10.

[139] $M_{1UN} = 4.71$ ($SE = 0.38$), $M_{1UA} = 3.56$ ($SE = 0.42$), $t(89) = 2.00$, $p = .049$, $r = .21$.

[140] $M_{1UA} = 3.64$ ($SE = 0.46$), $M_{1UC} = 5.15$ ($SE = 0.45$), $t(90) = -2.30$, $p = .02$, $r = .24$.

no information about the advisor's incentives provided), the layperson on average provided estimates that were \$4.94 away from the advice given. Thus, when no incentives information is provided, as in 1UN, laypersons seem to behave almost exactly the same as when a conflict is disclosed, as in 1UC (a difference of \$0.21, $p = 0.74$).[141] This is quite surprising, given that the experiment provided no prompting at all that would suggest that the advisor may have a conflicting interest or any motives whatsoever other than truth. Nonetheless, the disclosure that interests were aligned in 1UA improved reliance and accuracy significantly.

Thus, in real-world settings where advisors and clients have aligned interests, a disclosure mandate may help laypersons properly increase their reliance. Of course, if greater reliance is in the advisor's own interests, a mandate may be unnecessary. However, it is also possible that social norms or sheer habit will prevent overt discussion of the advisor's incentives. This failure is especially likely where the policy regime has not yet focused attention on those incentive structures. Thus a disclosure mandate policy, designed to help laypersons with conflicted advisors, may have spillover benefits to even those with non-conflicted advisors. This finding also holds promise for policies that explicitly attempt to align the incentives of advisors and laypersons, suggesting that laypersons would be quite appreciative of such reforms and that their behavior would exploit such an improvement, if they learned about it.

B. Using Disclosures to Select Advisors

A significant limitation of the CLM study was that laypersons receiving disclosures about conflicts had nowhere else to turn for advice. Each layperson had a single advisor, who essentially had a monopoly on the market for advice. If the layperson did not trust her advisor's opinion, she could only resort to her own inferior estimates. Instead, as CLM acknowledged but did not test,[142] one might hypothesize that a disclosure mandate will be salutary to laypersons when there are multiple biased and unbiased advisors available because it helps the laypersons decide where to place their reliance. Indeed, this selection effect may be the most important function of a disclosure mandate in real-world settings.

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[141] $M_{1UN} = 4.94$ ($SE = 0.44$), $M_{1UC} = 5.15$ ($SE = 0.45$), $t(103) = -0.33$, $p = .74$.
[142] Cain et al., *supra* note 32, at 21–22.

This logic seems to be the assumption behind rules that allow an advisor to proceed with a conflicting interest, as long as that interest is first disclosed to the client and the client gives informed consent.[143] As formal models predict, this layperson-choice dynamic might also then create an incentive for the expert to either eliminate the conflicting interests or credibly demonstrate to the potential layperson clients that he is nonetheless unbiased.[144] On the other hand, in specific contexts, such as the conflict created by attorney referral fees, scholars have argued that a ban may be more efficient than a disclosure mandate.[145] States are experimenting with both approaches,[146] but there would seem to be little means of assessing the success of these natural experiments.

The present laboratory experiment does not test the *ex ante* effects on advisors, but it does test the possibility of *ex post* benefits of disclosure mandates to laypersons in multi-advisor settings. Conditions 2N and 2D each have <u>two</u> advisors per layperson, one of whom is biased by a conflicting interest. In 2D, but <u>not</u> 2N, a <u>d</u>isclosure mandate is imposed, which worsens the advice of that advisor (as in CLM) but provides valuable information to the layperson. Thus, we have something like two miniature markets for advice, with a variety of both conflicted and non-conflicted advisors, and in one setting there is a disclosure mandate. Still, it is notable that, unlike a true market, the second opinion was automatically provided without imposing the cost thereof on the layperson.

Here, unlike in CLM's single-advisor experiment, the disclosure mandate has significant salutary results for the laypersons, improving accuracy by $1.22 ($p = 0.02$).[147] On net, the advice received in the disclosure condition was worse than in the undisclosed condition, but the laypersons did not blindly average them. Apparently, the laypersons effectively used the conflicted

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[143] *See, e.g.*, MODEL RULES OF PROF'L CONDUCT R. 1.7 cmts. 18–19 (2010).

[144] Joel Sobel, *A Theory of Credibility*, 52 REV. ECON. STUD. 557, 557–58, 570 (1985).

[145] John S. Dzienkowski & Robert J. Peroni, *Conflicts of Interest in Lawyer Referral Arrangements with Nonlawyer Professionals*, 21 GEO. J. LEGAL ETHICS 197, 235 n.181 (2008).

[146] *Id.* at 208 n.71, 210 n.79.

[147] $M_{2N} = 3.97$ ($SE = 0.42$), $M_{2D} = 2.75$ ($SE = 0.27$), $t(108) = 2.43$, $p = .02$, $r = .23$. As will be explained further below, there is also an effect for simply providing two advisors rather than one. If you compare 1BC against 2D—that is, one versus two advisors, with disclosures in both—estimators with two advisors do much better, $M_{2D} = 2.74$ ($SE = 0.27$), $M_{1BC} = 6.49$ ($SE = 0.30$), $t(98) = 1.47$, $p < .001$, $r = .15$. Interestingly though, there is no significant difference between using one versus two advisors if there is no disclosure (that is, comparing 1BN against 2N), $M_{2N} = 3.97$ ($SE = 0.42$), $M_{1BN} = 2.65$ ($SE = 0.40$), $t(98) = 1.47$, $p = .14$. In short then, with one conflicted advisor, laypersons do better with no disclosure, but with one conflicted and one non-conflicted advisor, they do better with disclosure. This interaction reaffirms the point that a disclosure is only useful to laypersons if laypersons have somewhere else to turn for advice.

advisors' disclosures to place their reliance on the non-conflicted advisors. Thus, when laypersons have access to non-conflicted advisors, a disclosure may be salutary.

C. *The Value of Second Opinions*

For policymakers then, a primary challenge is to get non-conflicted advisors to the laypersons who need them. One such mechanism is exemplified by regulations that mandate that patients or mortgage borrowers get second opinions before acting on the advice of conflicted advisors.[148] Is a second-opinion an antidote to biased advice, or are more radical remedies (such as a ban on the biased advice) necessary?

Comparing condition 2D with 1BC allows one to test such "second-opinion" policies. Laypersons receive biased advice with a disclosed conflict in each condition, but in 2D, the layperson also receives a "second opinion" from an unbiased advisor. This intervention dramatically improves layperson performance by 53% (a difference of $3.47, $p < 0.001$).[149] This is one of the starkest differences in layperson performance reported in this study. Indeed, this 2D condition becomes the new gold standard for layperson accuracy, marginally improving on even condition 1UA (CLM's "accurate"), where a single advisor has aligned incentives for accuracy (a difference by $0.81, nearly significant, $p = 0.09$).[150]

One might worry that second-opinion policies will be limited in their effectiveness if the layperson anchors on the first advice received and does not sufficiently adjust his estimate upon receiving the new advice.[151] Further experimental research, described in the footnotes, explores and rejects this hypothesis.[152]

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[148] *See supra* notes 39–41 and accompanying text.

[149] $M_{2D} = 2.74$ (*SE* = 0.27), $M_{1BC} = 6.49$ (*SE* = 0.30), $t(98) = 1.47$, $p < .001$, $r = .15$.

[150] $M_{1UA} = 3.56$ (*SE* = 0.42), $M_{2D} = 2.75$ (*SE* = 0.27), $t(90) = 1.70$, $p = .09$, $r = .18$. How can adding a biased-disclosed advisor (as in 2D) improve performance over simply receiving advice from an advisor with aligned incentives (as in 1UA)? It may be that the two pieces of advice were relatively coherent, compared to the layperson's own estimate (which we know from condition NoAdvisors is much further from the truth). Thus the biased, disclosed opinion communicated a rough scale of the epistemic asymmetry to the layperson, helping her to place closer reliance on the unbiased expert's advice. This effect may be peculiar to settings of high epistemic asymmetry and relatively low bias ratios.

[151] *See* Tversky & Kahneman, *supra* note 108.

[152] Condition 2DR was designed to test the hypothesis that laypersons would anchor on the first advice received. Condition 2DR is identical to condition 2D, except that the order of advisors is reversed, so that the layperson first receives advice from an advisor with aligned incentives (and a disclosure of the same) and then

Notably, the experiment assumed that the biased advisor would perform the same as he would under a condition of mandatory disclosure alone. In the real world, if a biased advisor knows that the layperson would likely receive a second opinion from an unbiased advisor, the biased advisor may perform differently, perhaps improving the advice she gave, making the net effectiveness of this policy even better. Future studies should test this potential improvement in *advisor* behavior.

The most important policy-relevant conclusion remains: the clearest remedy to the epistemic asymmetry with conflicting interests is to (a) force disclosures of the conflicts, but only if we also (b) ensure that laypersons also have access to, and actually use, non-conflicted advisors. Non-conflicted advisors are a complete antidote to conflicted advisors. Of course, second opinions have costs—someone must pay that second advisor to repeat the work of the first conflicted advisor. The present experiment did not impose those costs on the laypersons, but instead provided the second opinion for free. It is a context-dependent empirical question whether the additional costs will outweigh the biases imposed by the first conflicted advisor. Thus, policies that align incentives in the first place may be more efficient, if there are viable mechanisms for such alignment in a given market.

D. A Market for Unbiased Advice

The foregoing findings suggest that, to some extent, laypersons can themselves incentivize the production of unbiased advice, since in a regime of disclosure the laypersons tend to follow non-conflicted advice over conflicted advice. Therefore, if competition exists amongst advisors in something like a market, those who credibly avoid conflicting interests may demand a premium for their advice.

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receives advice from an advisor with conflicting interests (and a disclosure of the same). Surprisingly, laypersons in 2DR perform significantly worse than those in 2D, where the accurate advice is second (a $0.81 difference), $M_{2D} = 2.74$ ($SE = 0.27$), $M_{2DR} = 3.56$ ($SE = 0.29$), $t(103) = -2.04$, $p = .04$, $r = .20$. Thus, sequencing does seem to matter. A second opinion is apparently more influential, either because the first opinion's disclosure of conflicts primes the layperson to look for a more reliable source of advice, which then becomes particularly compelling once found, or perhaps simply because the second source of advice is more proximate in time to the decision task, which immediately follows. Nonetheless, even with this suboptimal sequencing and the inclusion of a biased advisor, the point estimate for layperson inaccuracy in 2DR is $3.56, precisely the same as in the previous gold-standard condition of 1UA (a single advisor with aligned incentives).

In some contexts, there may be market actors that will benefit from laypersons following unbiased advice and have a mechanism for providing such unbiased advice. If a producer truly does sell the better product, it will prefer that laypersons get non-conflicted advice that will help them choose the better product. That is why, for example, carmakers like to brag that a purportedly independent expert, such as J.D. Power and Associates, provides favorable advice.[153] Likewise, in litigation, attorneys often prefer to use treating physicians as expert witnesses, since they render opinions without influence by the lawyers, in contrast to hired-gun experts that were handpicked and coached by attorneys.[154] A law that mandates disclosure of conflicts may help create such a market for advice, if it draws laypersons' attention toward this issue, and if there are unbiased sources of advice available.

Nonetheless, a market mechanism would require laypersons to know what sort of advice they need and to be willing to pay for it. It bears emphasis that the experimental conditions with multiple advisors did not require the laypersons to realize that they needed a second opinion, or to pay for it. The second opinion just appeared alongside the first. In the real world, advice will always have a cost, at least in terms of time and inconvenience, if not in service fees charged by the advisor. Further, unbiased advice will tend to be more expensive to a layperson than biased advice, which a third party subsidizes.

Do laypersons have the necessary meta-knowledge, i.e., an understanding of their own epistemic strengths and weaknesses, in advisory situations? Do they know whether they need advice, and if so, whether they need non-conflicted advice, and at what price? The laboratory experiment allows us to approach these questions, albeit only indirectly. After seeing the photograph of each jar, receiving the advice and disclosures (if any), and rendering their own estimates, participants were asked, "How confident are in your estimate? (10 = very confident, 1 = not confident)."[155] The CLM study did not provide

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[153] *See, e.g.*, Cambridge PR Group, *Ford Surges in J.D. Power and Associates Initial Quality Survey*, READMEDIA, July 13, 2010, http://readme.readmedia.com/Ford-Surges-in-J-D-Power-and-Associates-Initial-Quality-Survey/1591858 (touting Ford Motor Co.'s "huge accomplishment" of ranking favorably in the J.D. Power and Associates survey).

[154] *See* Robertson, *supra* note 47, at 194–95. Indeed, litigants could use a blinding mechanism to more regularly bring unbiased experts to trials as a rational strategy for garnering extra credibility from the lay fact-finder. *See id.* at 215.

[155] This relationship between subjects' confidence and accuracy in an estimation task, which is known as calibration, has been extensively studied in the judgment and decision-making literature. *See generally* Claire

such a measure of layperson self-assessment, but it may be useful as a proxy for how laypersons will perform in a market for advice. When given incentives for accuracy, one might expect that laypersons would be willing to pay more to move to positions of higher confidence as their own best proxy for accuracy. For this proxy to be effective, and for the market to work, there must be a significant correlation between the accuracy of layperson estimates and their confidence in their estimates.

Such a hypothesized relationship is not apparent in this data. Across all conditions of the study, there is no relationship between the average accuracy of laypersons' judgments and their average expressed confidence in those judgments.[156] The participants apparently had no idea as to whether they were doing well or poorly. In contrast, one would have hoped that those in the inaccurate conditions, such as those with no advisor or an advisor with a disclosed conflict of interest, would express low confidence, such that they might be willing to pay a premium to move to a more accurate condition. This was not the case.

It gets worse when the participants are clustered into the twelve experimental conditions, as shown in Figure 1. There was significant variation in average confidence levels between conditions, ranging from 4.69 for condition 2D to 6.07 for condition NoAdvisors, a difference of 1.38 on the 10-point Likert scale.[157] Notably, the participants in the NoAdvisors condition are much more confident than participants in any other condition, even though they perform much worse than in any other condition. Indeed, there is a strong correlation between average layperson *inaccuracy* by condition and average confidence by condition.[158] To be clear, this would be a negative correlation between *accuracy* and confidence.
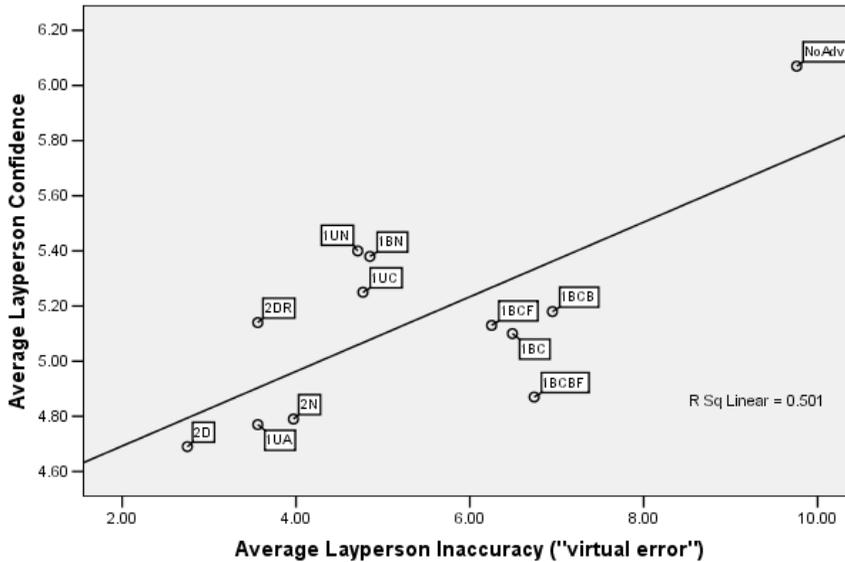

I. Tsai et al., *Effects of Amount of Information on Judgment Accuracy and Confidence*, 107 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 97 (2008) (reviewing this literature).

[156]   Pearson $r < 0.01$, p (two-tailed) = .95.

[157] $F(2, 611) = 1.99$, $p = .04$, $r = .17$; *see infra* Table 4.

[158]   Pearson $r = .71$, p (two-tailed) = .01.

Figure 1:
Layperson Inaccuracy and Confidence by Condition

This finding may be peculiar to the particular estimation task utilized in this study and in the CLM experiment. Since coins are a feature of daily life, laypersons may have a very high degree of confidence in their own abilities to render an accurate assessment, but they actually tend to systematically underestimate the value of coins. In the NoAdvisors condition, the laypersons may have been most confident because they received no information that would undermine their prior beliefs. In other conditions, when advice came from advisors with aligned interests (1UA) or from multiple advisors (2N and 2D), this advice was very persuasive to the laypersons, but it apparently created cognitive dissonance with the laypersons' prior beliefs and may have thereby undermined the laypersons' confidence. When the advice was even worse in the 1BC and 1BCB conditions, the laypersons could confidently disregard it as unreliable and proceed with their own estimates.

These findings illustrate the complexity of setting policy to improve laypersons' epistemic performance. One cannot blindly assume that

laypersons will pay for the quality of advice they need, or be able to assess accurately the quality of the advice that they receive.[159] Economists use the term *credence goods* for products, like expert advice, for which the buyer has little ability to monitor quality.[160] Unlike other products and services, the market for advice is defined by the layperson's own epistemic incompetence. This is especially true in the health care context. As Marc Rodwin explains, "[P]atients are particularly vulnerable. . . . They often have little opportunity to learn from personal experience, or the cost of doing so may be high. These constraints distort their choices as consumers and increase their reliance on the recommendations of their physicians."[161] In other real-world settings, laypersons do receive feedback about the decisions they make—for example, they watch as their 401(k) accounts soar or fall compared to benchmark indexes. The present study provided laypersons with no such feedback. Still, in the real world, the feedback may come too late to be actionable and may come in forms that are not particularly intelligible to the layperson, if there are no clear comparisons or baselines available.

These experimental conditions suggest that much will depend on which advisors happen to get to laypersons first, because once a layperson–advisor relationship is created, it is likely to be sticky. A layperson with a highly conflicted advisor would appear to proceed with a high degree of confidence and would be unlikely to switch advisors. Unfortunately, in a market setting, the most highly conflicted advisors likely have the greatest incentives to aggressively find and recruit layperson clients. At this point, policymakers may have few options. Once the layperson has a relationship with a conflicted advisor, a mere disclosure may not be enough to break that connection. This is especially true when the costs of the conflicted advisor are completely subsidized or already sunk, but the layperson would have to pay for a second opinion from an unbiased advisor.[162] Thus, the key task for policymakers is to find ways to get unbiased advisors to laypersons in the first place.

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[159] *See* Hadfield et al., *supra* note 15, at 144 ("The complex nature of information also requires careful analysis of the potential for market mechanisms to provide the information consumers might want and need. Information is a notoriously difficult commodity over which to contract. Potential buyers of information have difficulty determining, in their uninformed state, the value of the information and thus the price they are willing to pay for it. Sellers of information run the risk of revealing their information, and thus the commodity they hope to sell, by the very terms on which they offer to sell. . . . These observations counsel care in relying on market information intermediaries to resolve the problems of information in consumer markets.").

[160] *See* Winand Emons, *Credence Goods and Fraudulent Experts*, 28 RAND J. ECON. 107, 107 (1997).

[161] Rodwin, *supra* note 31, at 1406.

[162] *See* Hadfield et al., *supra* note 15, at 145 ("Information is costly and so consumers rationally make choices between being better informed and settling for a less informed but less (transaction) costly option.").

CONCLUSIONS—ELIMINATING BIASES WITH SOUND POLICY

In the modern capitalist society, reliance relationships based on epistemic asymmetry will only grow in importance as transactions become more sophisticated and the need for specialization grows. It seems clear that conflicts of interests and resulting biases will only proliferate as those with expertise, or the appearance thereof, seek to exploit those advantages. Thus, this Article has sought solutions.

Still, this study had several noteworthy limitations. First, the coins-in-jars estimation task may not be comparable to all (or any) real-world contexts faced by laypersons. Future studies should create more realistic decision situations, such as that facing a patient deciding whether to take a prescribed drug as his conflicted doctor recommends, or that of an investor deciding whether to buy the stock recommended by the conflicted advisor. The advantage of the coins-in-jars estimation task is that it was concrete (with a right or wrong answer knowable by the researcher), and it was conducted realistically (human subjects were not asked to pretend that they were actually a patient in a treatment situation). This study also lacked feedback for laypersons, which may be present in some real-world situations. Future studies should also employ a more nuanced model of the market for multiple sources of advice, allowing laypersons to choose whether to purchase second opinions, and impose transaction costs on those choices. Further studies should also explore the effects on *advisors* of the various policy mechanisms tested on laypersons here, including actual bias disclosures and second opinion mandates.

The present empirical study has yielded several important conclusions. First, it has added further credence to Cain, Loewenstein, and Moore's observation that disclosure mandates can makes matters worse, if they worsen the advice given but fail to help laypersons truly improve their own estimates. By measuring epistemic asymmetry (relative expertise) and the degree of advisor bias, however, the present study has revealed the contingent nature of such conclusions. This more nuanced account allows analysts to begin thinking more clearly about the contexts in which a disclosure mandate or even a ban on conflicted advice may be worthwhile. Although epistemic asymmetry is a pervasive feature of modern life, so too is epistemic charlatanism and biased advice. In these situations, a disclosure mandate may be salubrious, if it drives laypersons away from bad advice.

Still, the present study has explored several ways to improve disclosure mandates, even where expertise is real. For initial interactions with advisors, it

helped to provide disclosures before conflicted advice, but the effect diminished with iterative interactions with the same advisor.

The study also explored the possibility of implementing disclosure mandates that focus on actual biases, rather than mere conflicts of interest. The present study found, however, that disclosure of actual advisor bias did not improve average performance compared to disclosure of mere conflicting interests. Still, bias disclosures did help significant portions of the population outperform those in the conditions with mere conflicts disclosures. Further research is necessary to identify contexts in which biases can be calculated reliably, and to understand how to best communicate that information to laypersons so that it is useful to them.

This Article also explored mechanisms for tailoring disclosure mandates to particular subpopulations that actually receive biased advice. Analysis revealed that a mandate to disclose conflicting interests can hurt the potentially large proportion of laypersons who are nonetheless receiving accurate advice. Thus, disclosure mandates should not be imposed unless there is particularized evidence of an actual advisor being biased, and then disclosure mandates should be tailored to the particular laypersons receiving biased advice. On the other hand, the present study demonstrated that even when an advisor has aligned interests, a disclosure helps laypersons place their reliance and improve performance. Affirmative disclosures can help with a trust deficit.

A primary finding of the present study is that a disclosure mandate improves layperson performance when unbiased advice is available too, as may be true in many market settings. A second opinion from an unbiased advisor is a much better remedy for biased advice than disclosure. Indeed, disclosure of conflict plus a second opinion from an unbiased advisor helps laypersons perform as well or better than simply providing accurate advice in the first place. Still, it bears emphasis that this is just a complicated way of rectifying the problem that the original advisor had conflicting interests.

Notwithstanding the love for market-based solutions amongst both scholars and politicians, this study strikes a pessimistic note, given its findings about laypersons' self-assessments. This study found an inverse relationship between laypersons' accuracy and their own confidence in their performance. The present study suggests that policymakers should give increasing attention to policy mechanisms that align the interests of advisors and laypersons, and that channel laypersons toward unbiased advice, which is the strongest determinant of layperson performance.

METHODOLOGICAL APPENDIX

This Appendix provides details about the methods used in the experiments. Human subjects were recruited from e-mail lists and websites nationwide, including Craigslist, Facebook, and Amazon Mechanical Turk, to complete the study hosted on a third-party website.[163] Participants completed an online informed consent form approved by Harvard University's Institutional Review Board. The 198 participants recruited from Mechanical Turk were paid $0.10 to $0.15 each to complete the study, in addition to an accuracy-based $100 prize drawing. The remaining 545 participants received no payments for participation but were eligible for a $100 prize for accuracy. All the subjects were told: "The person who gets closest to the actual value most often wins the $100 prize. So try your best to be accurate."

As shown on Table 1, the present study has replicated the findings from CLM's classroom-based study, which thereby calibrates the present study's experimental design, making subsequent findings commensurate. Three experimental conditions were nearly identical to those tested in the CLM study, though the conditions were renamed for consistency with the other conditions tested here:

- 1UA (with one unbiased advisor and a disclosure that interests are aligned, corresponding to CLM's "accurate" condition);

- 1BN (with one biased advisor and no disclosure, corresponding to CLM's "high/undisclosed" condition); and

- 1BC (with one biased advisor and a disclosure of conflicting interests, corresponding to CLM's "high/disclosed" condition).[164]

Although the standard deviations are higher in the present study, the point estimates for the means are quite similar across the CLM study and the present

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[163] *See* Gabriele Paolacci et al., *Running Experiments on Amazon Mechanical Turk*, 5 JUDGMENT & DECISION MAKING 411 (2010) (describing the increasing use of Mechanical Turk by social scientists).

[164] *See* Cain et al., *supra* note 32, at 10. In addition to the methodological differences noted above (i.e., an online study versus a classroom study, and no participants assigned to the advisor role), there was one other difference between the CLM study and the present study. In CLM, the final three jars were "feedback rounds" in which the actual value of the jars was revealed to estimators after they rendered their estimates. CLM found no significant effects from this feature. *Id.* at 18. The feature was excluded here partly because of a concern that participants would communicate the right answers to future participants who might learn of the study through social networking sites.

study, with no more than a statistically insignificant difference of $0.33 for comparable conditions.

This cross-study comparison should lend additional credence to both the CLM study and the present study, and has methodological interest, since it helps validate these two different approaches to behavioral research. Cain and colleagues paid a relatively homogenous group of Carnegie Mellon University students an average of $10 each to participate,[165] while the present study recruited participants nationwide at an average cost of only $0.18 each, including both the per-person payments (zero to $0.16 each) and the $100 prize drawing. The fact that this study has replicated a classroom study, and has done so with arguably broader external validity at one-fiftieth of the cost per participant, is promising for the future of empirical legal studies.

The participants in the present study were 72% white/Caucasian. Approximately a third had "some college" for their highest educational level, and another third had graduated from college. The mean age was thirty-three, with only about a quarter being the college age of eighteen to twenty-two years. Thus, this sample is somewhat more heterogeneous and more representative of the American population than the CLM sample, though it is still far from a demographically valid sample.

Table 2 shows the photographs of six jars used in this study (at reduced size), along with the actual values of the coins in those jars,[166] the mean personal estimates rendered by advisors in the accurate condition,[167] the mean advice given in each condition,[168] and the mean estimates rendered by unadvised laypersons in each condition (from the present study).

Table 3 summarizes the conditions employed in this study, manipulated according to the number of advisors (zero, one, or two), the quality of the advice (accurate, biased, or even more biased because of a disclosure mandate), and the type of disclosure given (none, disclosure of conflicting interests, or disclosure of average bias). Table 3 also lists the number of participants in each condition (*n*), the primary dependent variable used in the study, which is the mean inaccuracy defined in terms of virtual error,[169] and the standard deviation (SD).

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[165]   *See id.* at 9.
[166]   *See id.* at 14 tbl.4.
[167]   *See id.*
[168]   *See id.* at 13, 15 tbl.5.
[169]   *See* discussion *supra* note 70.

Table 4 reports the actual errors, in contrast to the "virtual errors" discussed in the body of this Article, along with laypersons' self-reported confidence in their estimates, by condition.

Table 1:
Comparison of Layperson Virtual Error in CLM and Present Study

Condition	CLM Study			Present Study			Difference of Means (p value)
	n	mean	SD	n	mean	SD	
accurate 1UA	27	3.41	1.36	39	3.56	2.64	-0.15 (.78)
high disclosed 1BC	27	6.20	2.62	116	6.49	3.28	-0.29 (.67)
high undisclosed 1BN	26	4.52	1.58	43	4.85	2.65	-0.33 (.57)

Table 2:
The Experimental Stimuli

M	Actual Value:	$10.01
	Advisors' Personal Estimate:	$11.85
	Accurate Advice:	$12.30
	High-Disclosed Advice:	$17.20
	High-Undisclosed Advice:	$16.20
	Unadvised Laypersons' Estimate:	$3.22
N	Actual Value:	$19.83
	Advisors' Personal Estimate:	$16.73
	Accurate Advice:	$16.80
	High-Disclosed Advice:	$22.25
	High-Undisclosed Advice:	$18.90
	Unadvised Laypersons' Estimate:	$7.55
P	Actual Value:	$15.58
	Advisors' Personal Estimate:	$12.75
	Accurate Advice:	$14.00
	High-Disclosed Advice:	$25.25
	High-Undisclosed Advice:	$15.75
	Unadvised Laypersons' Estimate:	$6.95
R	Actual Value:	$27.06
	Advisors' Personal Estimate:	$18.39
	Accurate Advice:	$20.00
	High-Disclosed Advice:	$27.75
	High-Undisclosed Advice:	$24.90
	Unadvised Laypersons' Estimate:	$10.45
S	Actual Value:	$24.00
	Advisors' Personal Estimate:	$21.30
	Accurate Advice:	$21.50
	High-Disclosed Advice:	$28.25
	High-Undisclosed Advice:	$25.30
	Unadvised Laypersons' Estimate:	$9.64
T	Actual Value:	$12.15
	Advisors' Personal Estimate:	$13.07
	Accurate Advice:	$14.25
	High-Disclosed Advice:	$24.25
	High-Undisclosed Advice:	$19.90
	Unadvised Laypersons' Estimate:	$5.22
Average Across All Jars	Actual Value:	$18.16
	Advisors' Personal Estimate:	$15.68
	Accurate Advice:	$16.48
	High-Disclosed Advice:	$24.16
	High-Undisclosed Advice:	$20.16
	Unadvised Laypersons' Estimate:	$7.19

Table 3: Summary of Conditions and Results for Layperson Virtual Inaccuracy

Purpose of Experimental Condition	Label	# of Advisors & Advice Quality	Disclosure Type	Location of Disclosure	n	Mean Virtual Inaccuracy (SD)
calibrate online study with CLM; establish benchmark for layperson performance	1UA	1 unbiased	aligned interests	after advice	39	3.56 (2.64)
calibrate online study with CLM; test impact of bias on layperson performance compared to 1UA	1BN	1 biased	nothing	N/A	43	4.85 (2.65)
calibrate online study with CLM; test impact of disclosure mandate compared to 1BN	1BC	1 very biased*	conflicted interests	after advice	116	6.49 (3.28)
measure epistemic asymmetry, test potential impact of a policy that would ban conflicted advice	NoAdvisors	0 N/A	N/A	N/A	42	9.76 (2.88)
test sequencing of disclosure vs. 1BC to test anchoring effects	1BCF	1 very biased*	conflicted interests	first (before advice)	114	6.25 (3.18)
test disclosures of actual bias (along with disclosure of conflicts as in 1BC) as potential policy improvement	1BCB	1 very biased*	conflicted interests & average bias	after advice	56	6.95 (4.79)
test sequencing of disclosure of actual bias	1BCBF	1 very biased*	conflicted interests & average bias	first (before advice)	66	6.74 (4.50)
test disclosure mandate on laypersons receiving accurate advice; explore tailored disclosures policy	1UC	1 unbiased	conflicted interests	after advice	53	4.77 (3.03)
test effect of aligned-interest disclosure used in 1UA as potential mechanism for improving reliance	1UN	1 unbiased	Nothing	N/A	52	4.71 (2.75)
test second opinion as remedy for biased advice	2N	1 biased, 1 unbiased	nothing, nothing	N/A	57	3.97 (3.15)
test disclosure mandate in multiple advisors situation, compared to 2N	2D	1 very biased*, 1 unbiased	conflicted interests, aligned interests	after advice	53	2.75 (1.96)
test sequencing of advisors vs. 2D	2DR	1 unbiased, 1 very biased*	aligned interests, conflicted interests	after advice	52	3.56 (2.12)

* Advice given was equal to that given in CLM's "high-disclosed" condition; other biased advice was equivalent to CLM's "high-undisclosed" condition.

Table 4:
Actual Errors and Layperson Confidence

Condition	n	Layperson Actual Error (estimate minus truth)		Layperson Confidence	
		Mean	SD	Mean	SD
1UA	39	4.88	2.72	4.77	1.90
1BC	116	6.42	3.51	5.10	1.89
1BN	43	4.95	3.47	5.38	1.82
1UC	53	6.35	3.42	5.25	1.89
1UN	52	6.12	3.42	5.40	1.61
1BCB	56	6.67	4.00	5.18	2.17
NoAdvisors	42	11.65	3.84	6.07	2.01
2N	57	4.82	3.15	4.79	1.98
2D	53	3.47	1.24	4.69	2.21
2DR	52	4.24	2.46	5.14	1.96
1BCF	114	5.95	3.18	5.13	1.93
1BCBF	66	6.29	3.42	4.87	2.23