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Introduction

One who is to act for another with special competence, superior to that of his principal, and with fidelity, must be picked for competence and trustworthiness by some intuitive process, and must then be trusted. Sanctions of the sorts found in every society no doubt help in securing trustworthiness. About all these matters we have little knowledge, and the one thing that can be said with assurance is that (peace to the shade of Jeremy Bentham!) no machinery of sanctions can conceivably function without very large aid from moral forces.

Frank Knight (1947, pp. 29–30)

1.1 Introduction

The twenty-first century is surely the century of consultants, advisors, and experts. We listen with great interest to pundits who make predictions about an election, the World Series, or the Super Bowl. When we rebalance our portfolio, buy a house or a car, or adopt a healthier lifestyle, we visit websites where experts advise us about how best to proceed. Consultants are hired at every turn. In higher education they offer advice on bringing in a class at the appropriate discount rate; developing a strategic plan that will please multiple constituencies; or planning for a capital campaign. Academia is not unique in this regard; throughout the for-profit and the nonprofit world we seek and rely on the advice of experts – those outside the organization who will independently verify our thinking or point us in a new direction. Sometimes, this is a simple process of validation: we on the inside have a hunch that, for instance, higher rates of discount will yield greater retention rates at a college; the consultants we hire collect the data and perform the analysis that yields the advice we were looking for in the first place.

And this specialization and division of knowledge are good.[1] We want doctors and dentists to be experts and we rely on the engineering expertise of those who design our cars and the rides at Busch Gardens. No one who has visited a dentist in the last few years would wish to return to the dental practices of even ten years ago. If we decide to put a new policy in place – for instance to increase a discount rate for superior students at a college – we need reliable estimates of the costs and benefits associated with this change.

It is straightforward to observe and appreciate the benefits associated with access to expertise. There is, first, the simple fact that our lives have been greatly improved as a consequence of experts who made living easier by building bridges, discovering new medical techniques, and producing washing machines and countless other devices. In part for this reason, we typically defer to the experts. We put them on TV, YouTube, blogs, and the radio. Experts testify in court cases and before Congressional and Senate hearings. Political leaders and judges defer to them. Doctors – themselves experts – read evidence of the efficacy of a treatment and they rely on the expert scientists who conducted the trials. Experts rate securities, and firms and individuals base investment decisions on these expert-backed ratings. Experts tell us at what rate China and India are growing, what the balance sheet at the Federal Reserve looks like, and whether to expect high winds with the storm that promises to come through our region soon.

But another aspect of expertise has now burst into public attention, the failure to replicate a large number of results reported in scientific journals.[2] Marcus Munafo, the coauthor of a 2015 *Science* study that could replicate fewer than half of the results reported in a hundred articles in leading psychological journals,[3] explained the problem in terms of motivation and he pointed to the incentives facing the researcher:

[1] As Nathan Rosenberg, L. E. Birdzell, Jr., Deirdre McCloskey, and many others have shown, living standards in the West have increased dramatically in a matter of a few hundred years. Although the increase in human thriving has not been uniform and there are distributional issues to consider, much of the overall increase in well-being is attributable to engineering and other scientific discoveries (Rosenberg and Birdzell 1986; McCloskey 2010). To this, McCloskey adds the language of commerce. We will return to this in Chapter 2.

[2] An instance that has received a good deal of attention recently is the high school student's disreplication of a claim published in the *Oxford Journal of Social History* (Jensen 2002) that signs saying "No Irish Need Apply" did not exist, despite the widespread belief to the contrary. Rebecca Fried demonstrated (Fried 2015) that in fact "No Irish Need Apply" was a commonplace in the newspaper advertisements of the period.

[3] http://science.sciencemag.org/content/349/6251/aac4716. The authors cite the work of John P. A. Ioannidis whose model of the search for statistical significance predicted the problem

If I want to get promoted or get a grant, I need to be writing lots of papers. But writing lots of papers and doing lots of small experiments isn't the way to get one really robust right answer. What it takes to be a successful academic is not necessarily that well aligned with what it takes to be a good scientist.[4]

Unfortunately, the consequences of such motivated inquiry have occasionally been severe. Perhaps the best-known example followed a 1998 article published in *The Lancet* that asserted that childhood vaccines against measles and other diseases led to higher rates of autism. We now know that the author concealed his financial interests and the biased estimation procedures that strongly influenced his results. Obviously the editors, who had no such interests, were not aware of the concealment. Had the private goals of the author and the statistical procedures been obvious to the editors, or even suspected, there is no reason to believe the article would have been published. Experts – and here we simply defer to authority – claim that this widely diffused result has led to a disastrous fall in the vaccination rates.[5]

In what follows, we focus on experts in economics because it is easier for us to read the technical literature in economics than in other fields. Thus, our attention is confined to those who have a claim to scientific authority in economics and who use their expertise to influence policy, broadly construed. Such experts have attained great stature over the last century, and some notoriety recently.[6] The influence of the Chicago School of Economics in creating a neoliberal world is controversial in large part because their

(Ioannidis 2005). http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0020124

4 https://www.theguardian.com/science/2015/aug/27/study-delivers-bleak-verdict-on-validity-of-psychology-experiment-results

5 A Wikipedia article "Alexander Wakefield" attempts to keep up with the studies evaluating the impact. http://en.wikipedia.org/wiki/Andrew_Wakefield.The retraction is in http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(97)11096-0/abstract. This belated retraction was important enough to make the major news outlets, for example the *Wall Street Journal*, February 3, 2010. "The Lancet's Vaccine Retraction: A Medical Journal's Role in the Autism Scare" and *NPR*, "Lancet Renounces Study Linking Autism and Vaccines," http://www.npr.org/sections/health-shots/2010/02/lancet_wakefield_autism_mmr_au.html.The study's impact is asserted widely: Jeanne Whalen and Betsy Mckay, "Fifteen Years after Autism Panic, a Plague of Measles Erupts Legions Spurned a Long-Proven Vaccine, Putting a Generation at Risk" *Wall Street Journal* June 19, 2013. http://www.wsj.com/articles/SB10001424127887323300004578555453881252798.

6 The motion picture, *The Inside Job* documents a good deal of embarrassing economic advice in the period before the 2007 financial crisis. Jonathan Gruber's statements about the private benefits of nontransparency demonstrated the power of YouTube. Gruber's apology for casual usage of the principle of rational ignorance was that he was not an expert on politics. http://radio.foxnews.com/2014/12/11/jonathan-gruber-to-congress-im-not-an-expert-on-politics/

claims of expertise seem to have overruled democratic institutions.[7] In that context, Chicago School experts in economics are viewed by some as akin to physicians who prescribed the bitter medicine of "shock therapy" with the admonition, "take this, we know what's good for you."

Economists were concerned with questions such as the motivations of economic experts and the replicability of their results long before the "shock treatment" characterization of economic advice.[8] These misgivings, largely out of the public eye, have gradually reformed submission policies for academic journals in economics. Publication of applied statistical articles is now often contingent upon submission of the data as well as the computer commands to implement the statistical procedures. This is a remarkable change from the era in which data sharing was voluntary, motivated only by scientific duty, as an editorial in the *Journal of Political Economy* in 1975 informed its readers (Stigler 1975).

In line with such concerns, we hold that all inquiry is motivated. This follows from our presumption that all experts have at least some private (as opposed to purely public) motivations. As is well known, throughout his career James Buchanan made the simple but important claim that policy

[7] Juan Valdes examines the role of economists in Pinochet's Chile (Valdes 2008). Andrew Farrant and Edward McPhail and Leonidas Montes discuss new evidence on Milton Friedman's role in Chile (Farrant and McPhail 2013; Montes 2015). Valdes focuses on the University of Chicago's economics department and offers the view that their advice was inspired by the teaching of Frank Knight: "The community of economists risen to a Platonic category as 'the scientific community' was also seen in Knight's writings as the appropriate model for the 'free society'. The Chicago School, then, developed a vision of itself as the community of true economists, 'having the gift of faith, steadfast witnesses to the social glory and redemptive power of the market system'. More than economists in the restricted sense, they became social or moral philosophers; they tended to form – to use a Weberian concept – 'a rational sect'" (Valdes [1995] 2008, p. 80). A variation on this is found in Klein (2007, pp. 60–61) who views Knight's 1933 contribution as teaching his students to treat economic theory as above discussion. Valdes misses Knight's discussion of the collective-action problem among economists in a democracy, an issue A. C. Pigou addressed the following year. We discuss that in Chapters 2 and 9.

[8] Thomas Mayer used the replication criterion to ask whether economics is a science: "Neither originality, logical rigor, or any other criterion is as ranked as 'essential' by so many natural scientists as was replicability" (Mayer 1980, p. 170). Such concerns were the background for the replication project of the *Journal of Money, Credit and Banking* (Dewald, Thursby, and Anderson 1986; Feigenbaum and Levy 1993). In Chapter 4 we return to Mayer's attempt to replicate the body of empirical work linking current consumption to anticipated income (Mayer 1972). Chapter 11 addresses the question of motivated nontransparency. The history of concerns as well as the state of econometric replication as of 2015 is described by Duvendack, Palmer-Jones, and Reed (2015). There is now a replication network to help establish connections among researchers and to help the interested keep up-to-date. http://replicationnetwork.com/

makers are neither more nor less public spirited than the public.[9] We have used the phrase "analytical egalitarianism" to describe the presumption that people are all approximately the same messy combination of interests. In our view, it is now time to apply this homogeneity claim not only to policy makers but also to the experts who influence policy.[10] This book extends analytical egalitarianism to economic experts who influence policy, and this explains our cautionary approach to expertise: If one suspects the expert has a point of view not fully in line with that of society writ large, then one might be well advised to take precautions against the uncritical adoption of the expert's advice.

It is important to emphasize at the outset that we do *not* claim that experts in economics are untrustworthy or greedy, at least no more so than the rest of us. Instead, our position is that they are humans and like the rest of us they are subject to motivations to do good for all and to do good for themselves. Sometimes, by contrast (and sometimes to our peril, we suggest), people presume that experts pursue *only* the truth or that bias is costly for them because their only interest is the pursuit of truth. But when experts' models have alternative uses, when they are instruments for policy or to please those with whom they are connected, the motivations become more complicated. Our main concern in the book is how to ensure that the public obtains the best insights of experts in economics while avoiding the pitfalls associated with uncritical deference.

1.2 Discussion

The vision described in section 1 of the Chicago School economist as a physician, is actually antithetical to the teaching of Frank Knight, a founder of Chicago economics, for whom democracy is *government by discussion*. In Part II we offer a reconstruction of Knight's view in which expertise is constrained by democratic consensus. Most important, independent of the "school" of economics in which expert advice originates, this book advocates for an alternative account in which the economist as expert is constrained by discussion and transparency. Such a constraint, we argue, may prevent policy disasters such as those detailed in Part III. Discussion works

[9] See Buchanan's 2003 essay, "Public Choice Politics without Romance."

[10] This is consistent with Erik Angner: "Economists-as-experts are overconfident, I would argue, not because they are different from everyone else, but because they are just like everyone else" (Angner 2006, p. 7). The insistence that economists are subject to the same biases and limitations as everyone else is stressed by W. Kip Viscusi and Ted Gayer (Viscusi and Gayer 2015). We thank William Shughart for the reference.

both ways: by ensuring that results can be discussed and checked, it leads to the publication of trustworthy results; by allowing for results to be discussed and checked, it helps foster a healthy amount of skepticism.

We recognize in Part II and again in Part V that it is both messy and quite difficult to constrain experts by discussion. Our point in Part II is that the benefits associated with discussion may be great. There we shall read J. S. Mill's explanation of how moderation in expression is important for those who dissent from social conventions. Mill put this view into practice, and as a consequence his views on contraception expressed in his definitive *Principles of Political Economy* were considered at the trial that led to a de facto legalization of the dissemination of contraceptive information in a form that poor women could afford. The larger context of the trial is considered in Chapter 5. In the context of our examination of the benefits of discussion, Chapter 2 also reviews experimental evidence on how cooperation is enhanced by discussion.

In Part III we suggest that the costs of neglecting fuller discussion may be quite high, and they include the trampling of human desires and well-being through the adoption of sterilization policies to prevent births that experts deemed unwanted. Part V offers some recommendations for obtaining consensus and constraining experts that are less costly than discussion among an entire polity. Perhaps not surprisingly, given the obvious difficulties associated with discussion among large numbers, Knight drew attention to these. Chapters 11 and 12 offer ways to overcome the intractability of discussion among large numbers by relying on a random draw from the full public.

1.3 Linear versus Cyclical Policy Goals

A key question in this book is whether policy goals are determined once and for all and then implemented by experts (what we call the linear model) or whether they are determined in an ongoing process of review and discussion (what we call the cyclical process). The dominant point of view about the role of (economic) experts in a democracy uses the linear model. In this formulation, society articulates ends through a process of democratic discussion. Experts are then tasked with finding the means (optimal solutions) to achieve those predetermined ends in something akin to an engineering calculus. A second point of view, which we defend, takes ends and means as determined simultaneously. Ends are articulated and means are proposed but these proposed means and even the ends are subject to

continued review and discussion. The ends and means are then refined and the process continues.[11]

Unfortunately, all too often the role for review and discussion is minimal in the process of implementing policy. Indeed, once a decision is made, the overwhelming temptation for those in charge is to *avoid* continuous review and discussion. We argue that the separation of democratically established goals and means is costly at best and dangerous at worst. The linear model depends on experts being both trustworthy and effective. It neglects the temptation associated with power, with having the means to achieve an end that, once chosen, becomes disassociated from the people who apparently chose it. There is no guarantee that those who implement a policy are trustworthy or effective or that they are impervious to the temptations associated with power. Nor is there any reason to believe that they will choose the means that best serve the articulated goals of the group instead of the means that best serve their private goals.

The linear model presupposes that experts are faithful servants of society's goals, that they have no goals other than those of the group. But that is precisely what analytical egalitarianism warns against: experts, like the rest of us, are not *only* faithful servants of society's goals. Like the rest of us, they have and pursue their own goals and sometimes at the expense of the public.[12]

This problem associated with the linear model is known in the economics literature as "regulatory capture." After goals are agreed on, those who implement them may use their authority to achieve their own, private goals. Charles Wolf coined the helpful term "internalities" to describe the private goals of those entrusted with implementing public policy (Wolf 1979). Regulatory capture by those with such private goals is now seen as a central explanation for government failure.[13] A theme of this book is that, like the policy makers themselves, experts who provide advice to policy makers and

[11] In Chapter 2, we consider Amartya Sen's analysis of the different approach to the problem of social choice taken by Kenneth Arrow and James Buchanan in the early 1950s in which "government by discussion" is the central question. Arrow took for granted that policy cycling is undesirable, whereas Buchanan disagreed. What was the basis of their disagreement? In his essay on ancient logic, Adam Smith warned that the coherence of many doctrines "of abstract Philosophy … have arisen, more from the nature of language, than the nature of things" (1982, p. 125). In this context it is worthy of notice that Ariel Rubinstein recently pointed out how our language is crowded with transitive relationships to indicate direction (Rubinstein 2000).

[12] The source of William Easterly's "technocratic illusion" that he combats in his masterful study (Easterly 2013) is the linear modeling approach to policy.

[13] See Schuck (2014, pp. 109–10); Levy and Peart (2015a).

who design the means of implementation may also be subject to regulatory capture.

1.4 Exogenous versus Endogenous Goals

The question of whether it is generally appropriate to take group goals as exogenous will be central in what follows, because if goals are exogenous there is nothing to discuss. Of course, this is not a new insight. We shall see in Chapters 2 and 3 that the question has a long history in the economics literature. And, in 1961 James Buchanan explained to Kermit Gordon[14] that the difference between the economics tradition in which he participated, that of Knight and his students, and the orthodox economics tradition to which he thought Gordon adhered, was that Knight, Buchanan, and their followers did not take group goals as exogenously determined.

The temptation to take goals as exogenous is simple: exogenously determined goals offer tractability. The temptation of tractability allows us to link our work with Philip Tetlock's research on alternative styles of reasoning. Following Isaiah Berlin's use of the fragment of the Greek poet Archilochos, Tetlock distinguishes between "hedgehogs" and "foxes" (Tetlock 2005). Hedgehogs know one big thing, the trick that always works, and foxes know many things that rarely work.[15] As Tetlock explains it, the problem with hedgehogs relative to foxes is that they are not equally open to disconfirming evidence:

> … hedgehogs bear a strong family resemblance to high scorers on personality scales designed to measure needs for closure and structure – the types of people who have been shown in experimental research to be more likely to trivialize evidence that undercuts their preconceptions and to embrace evidence that reinforces their preconceptions. (2005, p. 81)

Such trivialized evidence was apparent in the treatment of Soviet growth by some economists. When predictions of Soviet growth failed to materialize, a wealth of confounding factors was provided to "explain" the failure of the prediction. We offer a detailed study in Chapter 6.

Without knowledge of personality type or the ability to look back at events of earlier decades, how might economists use Tetlock's insight? The

[14] Gordon shortly after would become a member of President Kennedy's Council of Economic Advisors.

[15] Guy Davenport provides an interpretative translation of the fragment: "Fox knows eleventythree tricks and still gets caught; Hedgehog knows one but it always works" Davenport (1980, p. 57).

issue of whether group goals can be taken as exogenous may provide the means by which to move from hidden psychological traits to observable models. If group goals are taken to be exogenous, the implementation of policy is fundamentally an engineering calculus. But once the goals are taken as endogenous in an ill-understood process, as those in the tradition of Knight suggest, then implementation is contingent on the shifting goals, and ambiguity pours into the analysis. Yet perhaps ambiguity is the preferred, if previously unheralded, alternative: this book examines the consequences of succumbing to the temptation to escape from the messiness of democracy and defends another – perhaps lost – tradition of review and discussion as checks to the temptation to impose a policy choice, despite strong and perhaps valid objections. Thus, the problem of deferring to experts in the absence of discussion and transparency looms large in what follows.

Vernon Smith has described an additional problem associated with experts, how experts in one area gain credibility outside their immediate sphere of specialization:

> … experts often get their reputations in narrow specialties and are no better in solving problems outside their area of expertise than a random citizen off the street. But we expect them to have an absolute advantage over less accomplished people on all topics.[16]

The puzzle is how those without disciplinary competence can view themselves, and be viewed by disinterested spectators, as having the weight of scientific authority behind their recommendations.[17] We consider this issue in Chapters 5 and 6, when we examine how those outside the immediate problem of interest accepted the recommendations of the specialists, and in Chapter 10, when we examine Michael Polanyi's discussion of how scientific authority can be uniform given the limitations of time and specialization. Polanyi described a plausible condition of overlapping competence by which those in neighboring competence examine the claims of those in nearby areas. Gordon Tullock compared economics with the science that Polanyi described and concluded that economics was not a science in Polanyi's sense because concealment persisted in economics. Without

[16] Smith (2008, p. 186). We thank Jonathan Wight for the reference.

[17] Perhaps this explains why a single article in *The Lancet* poisoned sensible parents' decisions not to vaccinate their children. They must have known that the leading antivaccination advocate is a television performer rather than a physician, but the article, published in such an esteemed journal as *The Lancet*, carried great authority. Retracting the article did not restore vaccinations to the status quo prior to publication. This is the problem of stickiness when models are instruments for beliefs and leadership positions.

transparency there is no reason to believe that Polanyi's secondary experts – those without the competence to actually check the assertions of primary experts – will all have the same views. What is more plausible is clusters of secondary experts around each group of primary experts. What is needed to dissolve such factions, Tullock argued, is the complete lack of concealment, complete transparency.

1.5 Transparency

Secrecy is a central theme of the chapters in Part IV. We begin with contemporary reactions to John Law's monetary reform that led to the Mississippi Bubble. But contemporary images and texts from 1719 and 1720 assert that Law was involved in an alchemical fraud that depended critically on concealment. The episode, discussed in Chapter 7, illustrates how worries about transparency and expertise are very old, indeed.

Life is finite, so people cannot check everything they believe, even if they knew how far back to go. Thus, deference, like expertise, is inevitable and generally a good thing. How then to deal with the associated nontransparency? At least two possible approaches exist. First, one might accept the nontransparency as fact and attempt to find a second opinion from an independent source. Second, one might appeal to Francis Galton's information aggregation theorem of median estimates (or the generalization thereof) and infer truth from consensus.[18] Unfortunately, people often neglect the independence assumption these both require and, if so, this creates a nontransparent nontransparency. They depend on some unknown party whose work is endlessly repeated as if in a cosmic echo chamber, and they think all the voices are independent. And they let down their guard. They fail to see the stickiness and focus only on the consensus. Even as great a statistical economic thinker as George Stigler made this mistake, moving from consensus to truth without checking whether the consensus was obtained independently (Levy and Peart 2008b).

One of the systematic themes we shall develop in the book is that transparency is a complicated concept. It is often idealized as a binary state, where an institution is conceptualized as transparent (state 1) or not (state 0). This idealization makes transparency akin to truth: 1 if true and 0 if false. But we will argue that transparency is fuzzier than this; it allows some

[18] See Francis Galton (1907a, 1907b), reprinted in Levy and Peart (2002) and generalized in Peart and Levy (2005). In Chapter 12 we return to Galton's example of a jury deliberation as an instance of democratic procedure.