

CHAPTER 1

Dialogue of the Deaf

What to Do About It

*Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?*

—T. S. Eliot

Two decades ago, during ski season, I had the pleasure of spending a weekend in the Alpine chalet of Bill and Pat Buckley near Gstaad, Switzerland. For those of you who don't remember, the late William F. Buckley Jr. was the dean of American conservative politics, having founded the *National Review* and having hosted the conservative talk show *Firing Line* for three decades. At lunch we were joined by his close friend Ambassador John Kenneth Galbraith, the celebrated Harvard economics professor who was as liberal as Bill was conservative. Despite their sharply contrasting views on many topics, the two carried on a civilized discourse in which each put forth and defended his views intelligently and rationally. Even better, they ended up achieving a modicum of consensus in their views via the dialectic of step-by-step reasoning. Of course, such behavior was once expected, and the lack of it was seen as "bad manners." Those days are long gone.

What a contrast their dialogue offers to today's deafening Dialogue of the Deaf between Left and Right. This can take the form of shouting matches on cable news talk shows, or stale

cross fire between liberal op-ed writers at the *New York Times* and conservatives at the *Wall Street Journal*, or debates in the U.S. Congress—even in the Senate, which was once known for its bipartisan courtesies. Today's Dialogue of the Deaf treats us citizens to an endless repetition of predictable views by commentators and politicians—views that rarely if ever change. The predictable partisanship of most pundits suggests that they are completely unaware of an arresting new scientific discovery:

PQ is inverse to IQ

Where PQ refers to a person's Predictability Quotient, and IQ refers to his or her "effective" Intelligence Quotient.

That's right: The more the reader can predict the conclusion of a column by reading its first two sentences, the lower the effective IQ of the columnist. The reason why is simple: The columnist stopped wanting to learn long ago, even if he is reputedly brilliant and possessed a high IQ at age six. A new Nobel Prize in Remedial Logic should be awarded to those researchers who unearthed this important new relationship.

Almost everyone in the establishment media is now assumed to be either on the Left or on the Right, in varying degrees, and their views are highly predictable. The fact that Left and Right are categories that have ceased to be meaningful does not seem to bother anyone. The possibility that a compelling middle ground might exist seems to have evanesced into thin air. And once you are tagged as on the Left, then you must remain on the Left, and vice versa. Even entire think tanks are now regularly tagged "Left of center" or "Right of center." When I made this point to the head of a very prestigious research institute, he explained to me that the identity bestowed by such labeling was "very good for the funding of contract research." To be sure, there are a number of commentators who do not fall into these categories. Nonetheless, the tenor of the times is the crossfire between Fox News and MSNBC. The result is that we are all losers.

The Price Paid: Policy Gridlock

Perhaps the most serious price we are paying for this polarization is policy gridlock on issues ranging from global warming to

national energy policy, to our stance toward Islamic radicalism, and to entitlements reform—health-care reform in particular. Everyone on both sides of the aisle concedes that there is gridlock and that little, if anything, is being done about our most pressing problems. But there is widespread misunderstanding about the true cost of policy gridlock. This cost can take two very different forms.

First, it can mean that nothing is done about a problem when arriving at a consensus is impossible. Social Security reform to date offers an example of this form of gridlock. The can is forever kicked down the alley and nothing is done to improve matters. The problem with procrastination is that the longer-term cost of remedial action skyrockets.

Second, gridlock can be broken and legislation passed even when there is no consensus, provided that a veto-proof majority exists. This is exactly what happened when the Democratic majority in the House, under Nancy Pelosi's whip, rammed ObamaCare through Congress in the spring of 2010. The most significant piece of legislation in a generation passed with no Republican support whatsoever. Gridlock was broken, but watch what you wish for. Highly partisan majority rule victories of this kind can and usually do backfire. This will certainly happen in the case of the health-care reform bill, an all-important piece of legislation that was a bad one, as will be proven in Chapter 3.

To anticipate, the ObamaCare reforms are almost exclusively focused on “more demand,” with little thought to “more supply.” Indeed, several of the new bill's provisions will cause shrinkage of supply as doctors choose to exit a system mandated to pay them less each year for standard procedures. The point is that, while the reform bill did break policy gridlock, it did so in a very biased manner that will cause access to health care to be much more restricted than intended, and cost growth to be far higher than is necessary. My own question is: How did the level of thinking about this crucially important issue degenerate to such a point that a demand-centric set of policies could ever have been considered in the first place—by either party? My Labrador retriever knows this is the wrong way to reduce total expenditure. So did the Australians when they expanded health-care coverage in the early 1970s under Prime Minister Gough Whitlam.

How different it was when policy differences in Washington were ironed out *in camera*, and indeed in civilized discourse

between such journalists of yore such as James “Scotty” Reston and Walter Lippmann. Their writings conveyed the impression that they themselves were often as confused by policy dilemmas as their readers were, and that they were attempting to discover answers for themselves as well as for their readers. Such commentators showed little interest in ridiculing the views of those who disagreed with them, as Rush Limbaugh on the Right and Paul Krugman on the Left regularly do today. Readers learned from and alongside these wiser men.

As a result, our own personal views about complex issues were forged over time via an ongoing learning process, a dialectic of the sort endorsed by Plato. And these views often changed over time. All of this went hand in hand with the reality that, while there were indeed sharp policy differences between political parties, there was little policy gridlock in today’s sense. Compromises were regularly ironed out. I cannot recall either the Democratic or the Republican Party ever being described as “the Party of No,” much less being proud of such a label, as many Republicans are today.

What Went Wrong: Origins of the Dialogue of the Deaf

At least five developments over the past half-century have contributed to today’s Dialogue of the Deaf. These range from the culture wars of the 1960s and 1970s, to the triumph of inductive logic, to significant changes in lifestyle, and to the advent of extensive Congressional gerrymandering. It will be helpful to review the role played by each.

The Culture Wars

To a certain extent, the “culture wars” of the late 1960s and 1970s hastened the end of civilized discussion as the gulf between the Left and Right grew, and as the attacks of the one on the other grew ever more vitriolic. Much of what happened reflected the way in which political debate expanded to include very personal concerns such as the obligation to serve in a much-hated war (Vietnam); or the probity of having an abortion; or the true purpose of public education; or the rectitude of child discipline; or the validity of “deference” to any authority, whether Einstein or God; or the quest for sexual liberation; or the relativism of all forms of “morality”; or the deconstruction of reason, rectitude, and scientific truth. Given this turmoil, who could

have been surprised by the infamous *Time* magazine cover in April 1966: "Is God Dead?" The absolutism of arguments in these culture wars forced many bystanders to choose sides in a binary manner, and the politics of the late 1960s and 1970s became nasty indeed. Civilized debate in this environment became almost impossible.

Decline of the Classics and of the Dialectical Method

One particular casualty of the culture wars was interest in the classics—a field of study that was already waning by 1965. After all, the authors of the great books were dead white males, so how could they be expected to lead us toward any concept of the truth? The greatest of the dead white males was arguably Plato, and the Socratic *Dialogues* that he promulgated set forth the *process* required for truth seekers to bridge their differences and arrive at the terra firma of common ground. The timeless graphic image of this particular pursuit of truth is the cave of ignorance central to Plato's *Republic*. The voyage of life was a lifelong learning process guided by deductive reasoning that gradually led us from the flickering shadows of ignorance in the interior of the cave toward the daylight of truth on the outside. To Plato, learning is a lifelong struggle in which sound bites play no role.

Indeed, the dialectical method found in Plato's *Dialogues*, such as the *Crito*, requires the participants to progress via primitive rules of deductive logic from Proposition A to B, then from B to C, and ultimately to the common ground of the conclusion Z. By contrast, in today's Dialogue of the Deaf, one side keeps repeating "It's F, idiot," whereas the other retorts "No, it's H, idiot." Note that there is no Proposition G linking F and H. Moreover, the origins of propositions F and H are never clear, much less questioned. As for the idealized terminus Z, well, it is neither sought nor reached. After all, when each side starts off knowing the truth, who needs the hassle of reasoning? This is as true on cable news as it is in Congress or at the dinner table at home. Patience, along with a belief in logic, is required for the dialectic to work, and both traits are largely absent from dialogue today.

Studying the dialectical process in classical Greek as a young person fundamental altered how I would pursue truth-seeking throughout my own life, and how I expected others to reason in attempting to convert me to their views. It was a process that required a measure of mutual respect, humility, patience, and

most important, opinion modification. A commitment to reasoned debate used to be instilled at school by the teaching of the classics, ancient Greek and Latin in particular, and by instruction in those lost arts of rhetoric and debating. But most students today are not exposed to these disciplines. What they have lost is not simply the ability to reason and debate more clearly but also, and equally important, the awareness of the *fun* of doing so.

The Triumph of Inductive Logic

If the painstaking process of deductive logic enshrined in Plato's *Dialogues* has fallen into disuse, the reverse is true of the other form of logic: induction. When using the term *inductive logic* I mean the use of real-world data to arrive at a conclusion, a public policy, or whatever. Yet policy analysis today often refers to a partisan process in which those on each side of an argument cherry-pick facts to support their own case. The invention of the Internet with its voluminous and easy-to-access data has facilitated this process. This is of course a bastardization of the inductive process, which traditionally was presumed to be objective in the sense made clear by the symmetry conditions taught in any course in statistics. But when participants in a debate have never been taught to recognize and distrust the illogic of bastardized induction, inductive arguments can be very persuasive. The person with more dramatic factoids almost always wins.

Additionally, adducing supporting facts and examples is much less time-consuming than deducing truth from persuasive premises, the process of starting at A and ending at Z. No room for sound bites or tweets here! The difference between deduction and induction in a public policy context will be discussed at greater length in the next chapter, partly because this distinction is central to the argument in this book, and also because it is rarely discussed. For the moment, it suffices to acknowledge the triumph of induction in amplifying the Dialogue of the Deaf. It is a form of logic ideal for politicians and commentators who know that their audience is very impatient, and wants answers *now*. It is the ideal form of logic for a sound-bite era. This relates to my next point.

Lifestyle Changes and New Technologies

If the culture wars played a pivotal role in the advent of the Dialogue of the Deaf, so did technological change and associated changes in

lifestyles. With the invention of TV and then the Internet, life sped up. Audiences exploded in size. Talk-show hosts and columnists became celebrities. And incomes exploded with audience size and with celebrity. Given ever-declining faculties of valid reasoning along with increased impatience with laborious truth-seeking, commentators and politicians now “brand” themselves by adopting increasingly polarized identities. Indeed, it was economically rational to do so. Would Rush Limbaugh be as rich as he presumably is had he adopted a Socratic approach to political discourse? Moreover, once branded, how better to preserve one’s brand and augment one’s income than to become ever more expert in trashing the opposition, a pastime that spectators seem to love? “Gotcha” has become the game of our times.

Congressional Gerrymandering

During the past 30 years, states have been involved in a significant effort to gerrymander a large number of congressional seats. Doing so makes them “safe seats” controlled by one party. By extension, congressmen end up being pulled to the Left if they are Democrats, and pulled to the Right if they are Republicans. This is because they are much more vulnerable to influences from the extreme flank of their own party than to the rhetoric of the opposite party. This development in turn has widened the gulf between Left and Right and thereby amplified the Dialogue of the Deaf.

Alas, the Media Was the Message

As these developments unfolded, Marshall McLuhan’s perceptive prophecy was fulfilled: The media did indeed become the message. What he missed is that truth-seeking proper would become the victim of a media-centric world, and that political gridlock would emerge with all of its attendant carnage. In a world of “Gotcha” and of black-and-white truths, who has time for those fine shades of gray in which truth actually resides?

An End to the Dialogue of the Deaf and an Exit from Gridlock

There are two main problems to be solved if this nation is to get back on track. First, win-win policy solutions must be identified for the five real-world problems addressed in Chapters 2 through 6. Second, the Dialogue of the Deaf must come to an end, policy gridlock with it,

and these solutions must be implemented. A central premise of this book is that one and the same approach can be utilized to resolve *both* of these problems. More specifically, by utilizing somewhat advanced forms of reasoning that have been developed during recent decades and that are not widely appreciated (e.g., game theory, the economics of uncertainty, the theory of endogenous risk, incentive structure logic, and axiomatic ethics), we can arrive at compelling bipartisan policy solutions to today's problems and mute the Dialogue of the Deaf at the same time.

The Surprise

How can it be possible to kill these two birds with one stone? The answer is that truly persuasive policy analysis will, by its very nature, narrow the divide between Left and Right, thereby forging a new middle ground. This in turn is true because the kinds of logic required to solve many important policy problems *persuasively* are all branches of deductive logic—Socratic logic in a new guise, as it were. But by its very nature, this kind of reasoning shifts disagreement back from policy *conclusions* where it is easy to disagree (“Higher taxes on the rich—yes or no?”) to policy *premises* that are much less contentious, and that most everyone can find “reasonable.”

It is no accident that people tend to agree on premises, when properly introduced. For throughout history, premises (axioms in science) were supposed to have the property of being transparent and noncontroversial. In mathematics, consider the axiom: For any integer n , there is a next integer, $n + 1$. Try doing number theory without this helper! Analogously, in health-care reform, consider the two premises that a good system must permit much greater access to citizens than at present, and that the growth of total expenditure must not only slow, but decline as a share of GDP. Apple pie and motherhood, anyone? Who could question the desirability of either? In political theory, consider the opening lines of the U.S. Declaration of Independence: “We hold these truths to be self-evident. . . .” Nonetheless, it can be a long way from premise to conclusion, and this is where the necessity for deductive logic enters in.

There are many forms of deduction, from sloppy to rigorous modes. In the ideal case, the logic guiding us from Basic Assumptions introduced in step A to the conclusion in step Z will be rigorously deductive in nature. If this is the case, then there will be virtually

no disagreement about the outcome Z (e.g., the policies required to achieve the twin health-care goals) since, once the premises are granted, the outcome follows naturally and without disagreement. A principal goal in what follows is to demonstrate that surprisingly powerful forms of logic now exist to guide us quite noncontroversially from acceptable premises to win-win solutions across a wide array of contentious policy problems. Given the importance of the points being made here, a little history of logic should prove helpful here. Moreover, the story is interesting and not well known.

The Axiomatic Method

This refers to the idealized kind of deductive logic described previously in which theorems (conclusions) result from axioms via mathematical proof. It is known as the axiomatic method, and this is the gold standard in how to think through difficult problems and solve them. Students first encounter this when they study Euclidean geometry, to the extent that this is still taught. They witness how the ancient Greek mathematician Euclid postulated a set of “elementary truths” or “axioms” at the start of his treatise. For example, one celebrated axiom postulates that between any two points lying on a plane, there is one and only one straight line connecting them. Who will disagree with this? Well, when taken with Euclid’s other simple axioms, this implies that the sum of the angles in every triangle will equal 180 degrees.

This is not someone’s opinion. Rather it is an irrefutable theorem. No money need be spent by ideologically driven think tanks on studies to find counterexamples of triangles where the angles do not add up to 180 degrees. No Dialogue of the Deaf arises here, since the method of analysis puts an end to it. As a matter of interest, Euclid was so revered in the past that in America in 1900 there were reputedly as many streets named Euclid as there were streets named Jefferson or Washington. I was told this in Miami’s South Beach, where I once spent a week on Euclid Avenue, a street only blocks from Jefferson and Washington avenues. Today, however, most young people have never heard of Euclid. I know this because I ask them.

Extension from Pure Mathematics to the Social Sciences

For two millennia, rigorous premise-to-conclusion reasoning was largely restricted to pure mathematics, although Aristotle’s *Politics*

tackled political problems in a somewhat axiomatic manner, as did Dante's *Monarchia*. But this situation changed dramatically in the twentieth century. Quite suddenly, the axiomatic method began to be used in physics in the 1920s, and subsequently in the decision sciences, starting in the late 1940s. The central figure in introducing the axiomatic method both to physics and to the social sciences was the mathematician "Johnny" von Neumann who spent the last decades of his life at the Institute for Advanced Studies at Princeton. Einstein and he were among the first permanent members of the institute, and were regarded as perhaps the most brilliant two men of their era.¹

In 1932, von Neumann startled the physics community by showing how the new formulas of quantum mechanics could be deduced mathematically from five axioms, or "first principles." While this was hardly the first use of the axiomatic method in physics, it was perhaps the most spectacular one to date. Then in 1944, von Neumann with his Princeton colleague Oscar Morgenstern published *The Theory of Games and Economic Behavior*. The book made extensive use of axiomatics. The *American Mathematical Society Bulletin* announced, "Posterity may regard this book as one of the major scientific achievements of the first half of the 20th century." And so it was. Within a few decades, this gold standard of clear thinking would revolutionize political science, economics, sociology, evolutionary theory, and even political and moral theory.

I was trained in this area by several of the founding fathers of axiomatic social science, and I would end up using this method to help solve a very difficult problem in the foundations of ethics: What exactly do we mean when we say "to each according to his or her needs?" Is there a formula for determining a needs-based allocation in any situation? If so, is it unique, or could there be rival formulas implying different needs-respecting allocations? The answer is yes. There exists a unique allocation formula for a broad class of problems that satisfies seven reasonable axioms. The well-known attorney Kenneth Feinberg needed precisely such a formula when he was mandated by the government of New York State to allocate several billion dollars in relief money to survivors of the 9/11 disaster "in accord with families' relative needs." But no formula for doing so had been discovered at that time. All this is relevant to Chapter 6 on ideal societies.

This result drew heavily upon John F. Nash's axiomatic theory of bargaining. Nash, best known as the subject of the biography

A Beautiful Mind, had shown at Princeton in 1950 that five simple axioms imply a unique solution to the problem of which player gets how much of the pie as the result of bargaining over it. John Harsanyi, a colleague of Nash's who shared with him the 1994 Nobel Memorial Prize, would draw upon this theory and arrive at a unique formula for measuring political power in a multilateral bargaining context involving threats and coalitions (see Chapter 5). As a result, the previously fuzzy concept of "relative power" became crystal clear and quantifiable in the form of a power index.

In a third direction, Nash's Princeton colleague Lloyd Shapley laid down three simple axioms in 1953, and demonstrated the existence of a unique formula making it possible to allocate goods in accord with "to each according to this relative contribution." Years later, Peyton Young would show axiomatically that there can be no other formula than Shapley's for capturing the concept of relative contribution. These and many other advances would have startled and pleased Carl Friedrich Gauss in the early nineteenth century, arguably the greatest mathematical genius in history. He wrote:

There are problems to whose solution I would attach an infinitely greater importance than to those of mathematics, for example touching ethics, or our relation to God, or concerning our destiny and our future; but their solution lies wholly beyond us and completely outside the province of science.

It turned out that Gauss' speculation was wrong. The all-powerful method of deduction from first principles is now as much at home in the social sciences as it is in physics and mathematics. Yet the impressive progress that has been achieved along these lines is altogether unknown by the wider public, and even by today's most thoughtful commentators.

The Illogic of Policy Analysis Today

Extremely sloppy logic is partly responsible for the Dialogue of the Deaf, as we noted previously. But let's dig deeper. Exactly how does contemporary policy analysis ride roughshod over the demands of the logical gold standard introduced previously? Exactly why is it that any high school debating coach in 1900 would be shocked by the illogic of the policy debates on cable news? What has gone wrong?

Lack of Clearly Articulated Basic Assumptions

Consider traditional textbook microeconomics, such as the study of supply, demand, and efficiency in competitive markets. The main result here is that, under particular assumptions such as perfect competition, the resulting allocation of goods and services will be efficient. This simply means that the inputs available for creating and baking the pie are transformed into the biggest pie possible. There is no waste. The “invisible hand” of the price system will magically lead to an efficient allocation of resources. This result was first conjectured in a very fuzzy manner by Adam Smith in 1776 in his *Wealth of Nations*. During the next two centuries, it was clarified, and was finally proven to be true in an axiomatic manner with all the i’s dotted and t’s crossed by the economists Kenneth Arrow and Gerard Debreu in their landmark 1954 paper (see Chapter 6).

We finally knew what “capitalism” really meant, and under what conditions it actually does deliver the goods. Conversely, we learned to identify those conditions under which the invisible hand of the price system will not function optimally, resulting in “market failures” requiring aggressive government intervention. The contribution of Arrow and Debreu was to clarify up front exactly what was being assumed. Their use of the axiomatic method *required* such clarity, by its nature. As a result, much of what had been viewed as contentious no longer was.

Before the true nature of capitalism was understood, it was possible for Karl Marx 150 years ago to misinterpret and refute capitalist dogma, to press the case for communism, and to win converts. This might not have happened had the remarkable virtues of *true* capitalism been understood. The same held true, but in reverse, in the case of communism. When we finally looked at communism through the prism of modern game theory, we learned theoretically what was being proven true in reality in dozens of failed political experiments worldwide: Due to “incentive structure” problems at its roots, communism was a bad form of resource allocation that would not work well anywhere (see Chapter 6). Is this merely academic? Not when over 80 million people died on the ideological altar of badly confused thinking about rival kinds of resource allocation systems, and what each kind could in fact deliver.

Another example of how a lack of clear assumptions and sloppy thinking can imperil the general welfare can be found in today’s debate over how to avoid a Lost Decade in the United States

between 2011 and 2020. At the time of this writing, politicians and analysts are bitterly divided over the question of whether to increase the already huge government deficit (running at about 10 percent of GDP per year), or to shrink it. This division between Right and Left has paralyzed fiscal policy and has amplified today's Dialogue of the Deaf in the process. *New York Times* columnist Paul Krugman outdid himself by deeming anyone who believes in cutting the deficit during this sputtering recovery to be "clueless and heartless." As we shall see in the next chapter, the truth is that the very concept of deficit lying at the heart of this policy divide is fundamentally misconceived. When this is clarified via superior logic, much of the disagreement between today's two camps disappears, and today's stentorian Dialogue of the Deaf on this issue can be muted.

What superior logic? Whose superior logic? In 1970, the two eminent Stanford University economists Kenneth Arrow and Mordecai Kurz revolutionized theoretical macroeconomics in a way that made this progress possible. In particular, by incorporating the theory of public finance into macroeconomics, a wholly new interpretation of government spending and of deficits became possible—one very relevant to today's deficit debate. Regrettably, their book was very mathematical and was not widely read. Yet despite its extreme importance, it is never cited within the policy community. An application of the Arrow-Kurz logic to solving the Lost Decade problem will be the subject of the final part of Chapter 2. Not surprisingly, their logic is deductive in the extreme.

Enjoining an Argument at the Wrong Stage

Another manifestation of sloppy logic practiced in contemporary policy analysis is the tendency to introduce logic of sorts at the wrong stage of the debate, typically far downstream from the initial step in which Basic Assumptions or axioms *should* have been introduced. By enjoining the debate at any arbitrary stage downstream, the step-by-step procedures required by convincing deductive logic can never materialize. The force of any logic that is brought to bear gets watered down, if not lost altogether. The more the all-important chain of reasoning from premises to conclusion breaks down, the more irrational both parties become in pressing their claims.

In practice, the further downstream politicians and their staffers enjoin the debate, the more they tend to substitute their own biased policy conclusions for proper arguments, leading to a biased

conclusion. As a result, a meaningful dialectic becomes almost impossible, poor policies ultimately get adopted, and members of the Left and the Right continue to shout at each other.

Using the Wrong Kind of Logic

As was stated previously, we are living in an age when inductive logic has run amok. It is widely assumed that almost any problem can be solved by enough data crunching. Students today believe that if they are equipped with a powerful database and the appropriate spreadsheet program, the truth will reveal itself. Their belief is strengthened by the ever-increasing power of analytical models, and the ever-growing size of databases. This is as true in finance as it is in policy analysis. In economics, it has reached the point at which many students do not know the difference between economic theory proper and econometrics! To be sure, data analysis is crucially important in any scientific endeavor, but only if it is the right kind of analysis and if it is utilized at the right stage of an argument.

Traditionally, the search for scientific truth implied a two-step process. First came the development of a testable theory—preferably via the axiomatic method of deductive logic, when possible. Second came the testing of the theory via inductive logic. Thus, Newton and Einstein deduced their two theories of gravity from first principles, with data playing a surprisingly small role in their deductions. The same can be said of the theory of supply and demand in economics and its myriad implications, of the theory of multilateral bargaining and “power politics” axiomatized by John Nash Jr., and John Harsanyi, of the modern theory of information developed by Claude Shannon, and of fundamental advances in moral theory. The minimal role of data and data analysis in the derivation of these theories is truly remarkable.

Once such theories were deduced, scientists would utilize inductive logic to test and, if possible, to falsify them. Perhaps the most famous example of this two-step process was Einstein’s 1916 discovery through deduction of his general theory of relativity, and its subsequent testing in 1919 by Sir Arthur Eddington. Eddington was chairman of the Royal Society in London, and held Isaac Newton’s Chair in Mathematics at Cambridge University. To test Einstein’s prediction that light would be bent by the gravitational force of the

sun, Eddington sent an expedition to Somalia to photograph the behavior of light during the 1919 solar eclipse there.

When the photos were taken, they fully confirmed Einstein's predictions, and Einstein overnight became the most famous person on earth. When Eddington offered to send the heavy photographic plates that confirmed relativity to Einstein in Berlin, the latter politely declined the offer, given its expenses and the turmoil of the end of World War I. He is reported to have written, "You see, Sir Arthur, I do not need to see the plates. The theory had to be right, for it satisfied the principle of relativity." Such is the confidence of a genius who derived his theories and their predictions from extremely sound axioms. Were the theory not supported by the facts, then the axioms would have been wrong. But Einstein's axioms were Ivory Snow pure, and his theory proved correct.

Today, across a wide array of disciplines, the traditional emphasis favoring deductive versus inductive logic in the search for truth has been inverted. This is even true in physics where the triumph of logical positivism has sanctioned the formulation of sloppy theories created to make sense of empirical observations. Given this situation, it is no accident that, after six decades of trying, the "standard model" of quantum field theory in modern physics has still not been extended to incorporate gravity, largely for the reasons Einstein had correctly pointed out. Yet the claim that gravity must be "quantized" is still being flogged, with ever more expensive super-collider experiments ending in disappointment, like those currently being carried out at CERN in search of the Higgs Boson particle. As for the ever-so-trendy string theory, it has yet to generate a single falsifiable prediction. The little known truth is that, for all its mystique, theoretical physics is in complete disarray, as the physicist Mendel Sachs has shown mathematically, and as a millennial essay in *Scientific American* pointed out over a decade ago.²

Precisely the same is true in financial economics where an army of practitioners endlessly mine data to unearth statistical correlations in hopes of identifying new trading opportunities. Few such correlations endure long enough to be profitable, partly because correlation is often mistaken for causation, and partly because correlation structures change rapidly, due to ongoing structural changes in the economy and in the data it generates.

Logic of the “Is” versus the “Ought”

Interestingly, when we turn to public policy analysis, the nature of deductive logic in public policy analysis is deeper and more demanding than in many other sciences. In particular, the identification of an optimal policy requires the utilization of *two* quite different forms of deductive logic: the logic of what I shall call the “is” versus the logic of the “ought.” Physics by comparison usually only requires the logic of the “is.” Let me explain this important distinction.

First, there is *explanatory* deductive logic whereby we deduce how the world really works. For example, we deduce in physics that Force equals Mass times Acceleration, or $F = ma$ (Newton’s second law) and that Energy equals Mass times the square of the Speed of Light, $E = mc^2$. And we deduce in game theory that two rational players in a simple bargaining game end up agreeing on a division of the pie in inverse proportion to their degrees of relative risk aversion. I call such logic the logic of the “is,” as it describes and often explains reality.

Second, there is the *normative* deductive logic of the “ought.” This logic focuses on what decisions we *ought* to make if our behavior is to be optimal and consistent with the laws of the “is.” Consider two examples of this kind of logic at work. The first stems from engineering, whereas the second stems from public policy analysis.

In the first case, an engineer might ask: What is the best trajectory for sending a man to the moon and back—where “best” means the most fuel-efficient trajectory? The particular logic needed to answer this question is known as the calculus of variations in pure mathematics, and was discovered in the mid-eighteenth century. It permits engineers to determine the total amount of fuel required by each and every possible trajectory from the earth to the moon and back. It then identifies the particular path that is most fuel efficient. This kind of logic is completely different from the underlying logic of the “is.” Yet this kind of logic *presupposes* knowledge of the “is” if it is to be successfully implemented.

For example, without first understanding that the constraint that $F = ma$ must be satisfied, rather than some erroneous constraint such as $M = fa$, there is no way to determine the least-fuel trajectory that *ought* to be selected. Note that the logic of the “is” is primary here: The physicist discovering the true laws of nature does not require the help of the engineer, whereas the engineer fully depends upon using the right laws of nature when he calculates a best policy.

The second application lies within public policy analysis. Which forms of taxation ought we to adopt in order to maximize future growth? How large a fiscal deficit ought we to run so as to restore growth? These questions about the “ought” cannot be answered without first understanding the underlying “is,” in this case the true laws describing how different kinds of taxes and/or different sizes of deficits impact economic growth. Regrettably, the logic typically utilized in establishing both the “is” and the “ought” in policy analysis is sloppy in the extreme. In establishing the “is,” analysts are either too lazy or too ignorant to determine the economic equivalent of whether $F = ma$ or $M = fa$ or $A = mf$. They merely cling to their prejudices. When we get such laws wrong, man does not return from the moon, and economies do not recover as they could.

As for deducing the “ought,” that is an optimal economic policy that ought to be adopted, the process is usually so politicized that optimal policies rarely get adopted. For example, building upon the laws of the “is” in macroeconomics, President Obama’s former White House chief economist Christina Romer had established in important research with her husband, John, that the government “ought” to cut taxes rather than increase spending as the better way to revive today’s economy. Yet regardless of her position in the White House, the Obama administration increased spending and proposed back-door tax hikes for small business proprietors who already confronted soaring health-care premiums. I am not making a Right-wing versus a Left-wing point here, as Republican administrations often follow suit. Rather, I am pointing out how a simple law of the “ought” can get trampled by politics.

Using Unconditional Modes of Forecasting

One natural way to bridge policy differences is to convince people that they are not nearly as far apart in their views as they think, which is often the case. What often causes unnecessary disagreement is the failure of each side to *condition* their forecast on meaningful scenarios. For example, consider the disagreement between two economic analysts, Tim who believes inflation will run at 7 percent over the next three years, and Betty who thinks it will average only 2 percent. In making their forecasts, both know that the U.S. Federal Reserve has pursued a policy of extreme “quantitative easing” during the past three years. That is, it has “monetized” U.S. debt by buying in

over \$2 trillion of government and mortgage securities, and holding them on its balance sheet.

Tim views this monetization (or “printing of money” as he thinks of it) as a guarantee of future inflation. Betty does not. For she is better trained in economic theory than Tim (both admit this) and she understands that, while monetization of deficits may be a *necessary* condition for future inflation, it is certainly not *sufficient*. In particular, she knows that the large increase in bank reserves created by monetization need not trigger any inflationary growth in the money supply under certain conditions.

For example, suppose the public undergoes a shift in its belief structure from one of collective optimism about the future to one of collective pessimism (just as is happening today), and suppose as a result that people no longer want to borrow and spend as they used to. In this case, Betty knows that banks will not be able to transform their excess reserves (stemming from monetization) into new loans to you and me. Rather, banks will simply sit on their reserves. If this happens, then no new money enters the system, and the economy does not experience “a lot more dollars chasing the same number of widgets.” Betty knows that, *conditioned on this scenario of household pessimism*, there will be no inflation despite monetization.

Now, Betty happens to run into Tim at a finance convention. They chat at lunch about inflation. She finds that Tim was ignorant of the various conditions (including consumer pessimism) under which quantitative easing need not result in inflation. Once she has explained these realities to him, she asks Tim for his forecast of the borrowing behavior of consumers. It turns out that they share the same view on household behavior—the role of collective pessimism in particular. As a result, they end up sharing the same forecast of inflation itself. Their initial disagreement was a bogus conflict, which disappeared when proper scenario-conditioning took place.

The more general point here is that many of today’s disagreements that are contributing to American gridlock are bogus conflicts, upon closer inspection. But unless there is a person like Betty who takes the time to explain her view, these disagreements remain in place and further polarize public debate. *Who today has the incentive to play Betty’s role?*

To conclude, we live in a society where faulty logic of many kinds affords policy makers much too much “wobble room,” which

allows them to adopt highly partisan policies. Moreover, there is no one to expose the illogic of their policies.

What Must Be Done to Raise the Level of Debate

Let me now propose four strategies that could raise the level of national debate in a manner that facilitates the adoption of better policies.

1. Demonstrate that Win-Win Solutions Actually Exist

The remainder of this book is a step in this direction. As already indicated, higher-order levels of deductive logic are utilized to derive solutions to the prospect of a Lost Decade, to the entitlements spending crisis lying ahead, to excessive financial market instability, to the problems of dealing with thugocracies, and to the question of distributive justice—or “fair shares” of the social pie. The unfamiliar logics utilized will be the levers and pulleys used to identify new solutions to contentious issues. In all cases, it should be possible to reduce polarization and arrive at common ground.

2. Government Must Reform Itself

Can Congress credibly reform itself from within, at least to a certain extent? I am cautiously optimistic here. To begin with, politicians on both sides of the aisle are in trouble, and for the same reason: growing outrage by citizens of all political stripes at American gridlock. In poll after poll, people acknowledge gridlock to be the principal reason why government is unable to offer solutions to *any* of the principle problems impacting their lives, and their future living standards. Politicians are keenly aware of this, and will have an ever greater incentive to seek superior policies lest they be voted out of office. Necessity is indeed the mother of invention, and the policy failures resulting from today’s gridlock could morph into those win-win policies I believe to exist.

Indeed, the very existence of such policies could become “answered prayers” for politicians facing the wrath of the voting public in what the historian Simon Schama has called “an age of rage.” But for all this to happen, a necessary condition is that win-win policies actually exist. A principal motivation for this book is to demonstrate that they do.

3. Media Must Shame Washington into Reforming Its Modus Operandi

I want to help create a new game of “Gotcha” whereby the media expose the malfeasance of politicians to such an extent that they are shamed into changing their way of doing business. Imagine a world where the press sponsors ongoing “logic audits” aimed not only at exposing the illogical underpinnings of many proposed policies, but also of making crystal clear the price that taxpayers pay for such illogic—the price in concrete terms of foregone income and reduced living standards.

As part of such a logic audit strategy, why not introduce an “irrationality index” for scoring politicians’ degree of mendacity and bad logic? Their scores should be publicized far more than their financial or sexual peccadilloes, or their rankings as “true” liberals or conservatives. Indeed, now that almost everything else has been quantified, why shouldn’t costly policy illogic have *its* own index? Isn’t this what really matters?

Recall how the intelligentsia laughed at the folksy presidential campaign of Texas businessman Ross Perot in 1992. Yet when Perot went on TV and held up large cards that graphically illustrated what burgeoning deficits would do to the lives of average citizens, the public responded very favorably. Indeed, Perot ended up winning a much larger percentage of the vote than most pundits expected. Why was anyone surprised? After all, most of the points he was making came right out of the Common Sense 101 syllabus.

If Perot’s strategy was successful 20 years ago, when the issue of fiscal red ink was minor league compared to today’s, just think of the fodder a better educated press could reap by focusing on the policy illogic of individual politicians when the nation has lost its triple-A credit rating for the first time, and when national solvency may be at stake. Once again, our new game of “Gotcha” must be designed to expose the huge costs to individuals of each politician’s policy irrationality, and not to expose whether a candidate knows how to spell Vladivostok, or once made an “inappropriate” remark. National policy should not be a game of Trivial Pursuit. We absolutely must up the ante in this new game of “Gotcha.” With a push of this kind by the media, the incentive for politicians on the Left and Right to put their heads together and to identify common ground and win-win policies would be much greater than it is today.

4. The Educational System Must Perform Its Own Role in Instigating Reform

To begin with, institutions of public policy such as the Harvard Kennedy School could inaugurate programs aimed at educating both politicians and media representatives on the *meaning* of logically deduced win-win policies, on the potential role of new higher-order logics in helping us to identify them, and on how to sell them politically. Fascinating case studies of the application of new logics and of political progress would be prepared and distributed to schools nationwide. Students of such schools and programs would then go out and ensure that our new game of “Gotcha” would be constructive rather than nihilistic. For they would know what they were talking about. In some ways, this proposal reprises traditional civics courses that were designed to make students politically aware. But it goes much further.

The ultimate goal, of course, would be better policies, and who better to press for these than idealistic youths whose own futures are now being devalued at every turn? The young would join a growing chorus of people of all ages demanding serious debate about critical issues. Moreover, the students would have been trained to demand meaningful *n*-step arguments rather than one-step sound bites from politicians and policy wonks alike.

But why stop with schools of public policy? What about a role for departments of political science? Don’t we need political scientists and theorists far more than those retreaded “administration economists” and financial pundits who dominate the news and say ever less of any value? Finally, what about the agenda of the Aspen Institute’s “thinker” program, and other such high-profile venues? We need all interested parties on board. All this may sound idealistic, but the price paid by *not* attempting new approaches is rising rapidly. So is the extent of public rage, and today’s angst must be channeled to drive reform.

Indeed, I want the proposed new game of “Gotcha” to become positively trendy. I want students and junior faculty to develop computer games dedicated to chastising if not ridiculing named politicians and named media figures alike for the insulting vapidness of their opinions and policy proposals, if and when this is appropriate. By extension, I want a higher level and more demanding state of national debate aimed at shunning those who indulge in bad reasoning at our expense, Amish style. And speaking of debate, I want

debate *proper* to be restored to its rightful place in the high school and undergraduate curricula. Debating must become very trendy, with heaps of esteem and money bestowed on the best debaters. Cheerleaders and linebackers, move over. Make way for tomorrow's neo-rationalists.

Conclusion

The overall goal of this agenda is to shrink the wiggle room politicians currently have to dodge responsibility, to lie to us, and to further mortgage our future. The advent of cost/benefit analysis was a first step toward reducing such wiggle room. New procedures were implemented for making the stewards of the public interest more accountable to the public. Analogously in the business world, the advent of double-entry bookkeeping five centuries ago narrowed the wiggle room for business managers to embezzle money from their investors. In one form or another, it is always logic audits of some sort or another that have set us straight. After all, human beings are thinking creatures. Sadly, such audits do not exist today.

The optimism that permeates this chapter stems from my own conviction that the application of superior forms of logic really can lead us to identify win-win solutions to our most pressing problems—solutions occupying a nonpolarizing middle ground in the policy arena. In the next five chapters, I press this case strongly. If I succeed, then the first of my four strategies for muting the Dialogue of the Deaf will have been implemented. But strategies two, three, and four will remain to be addressed.