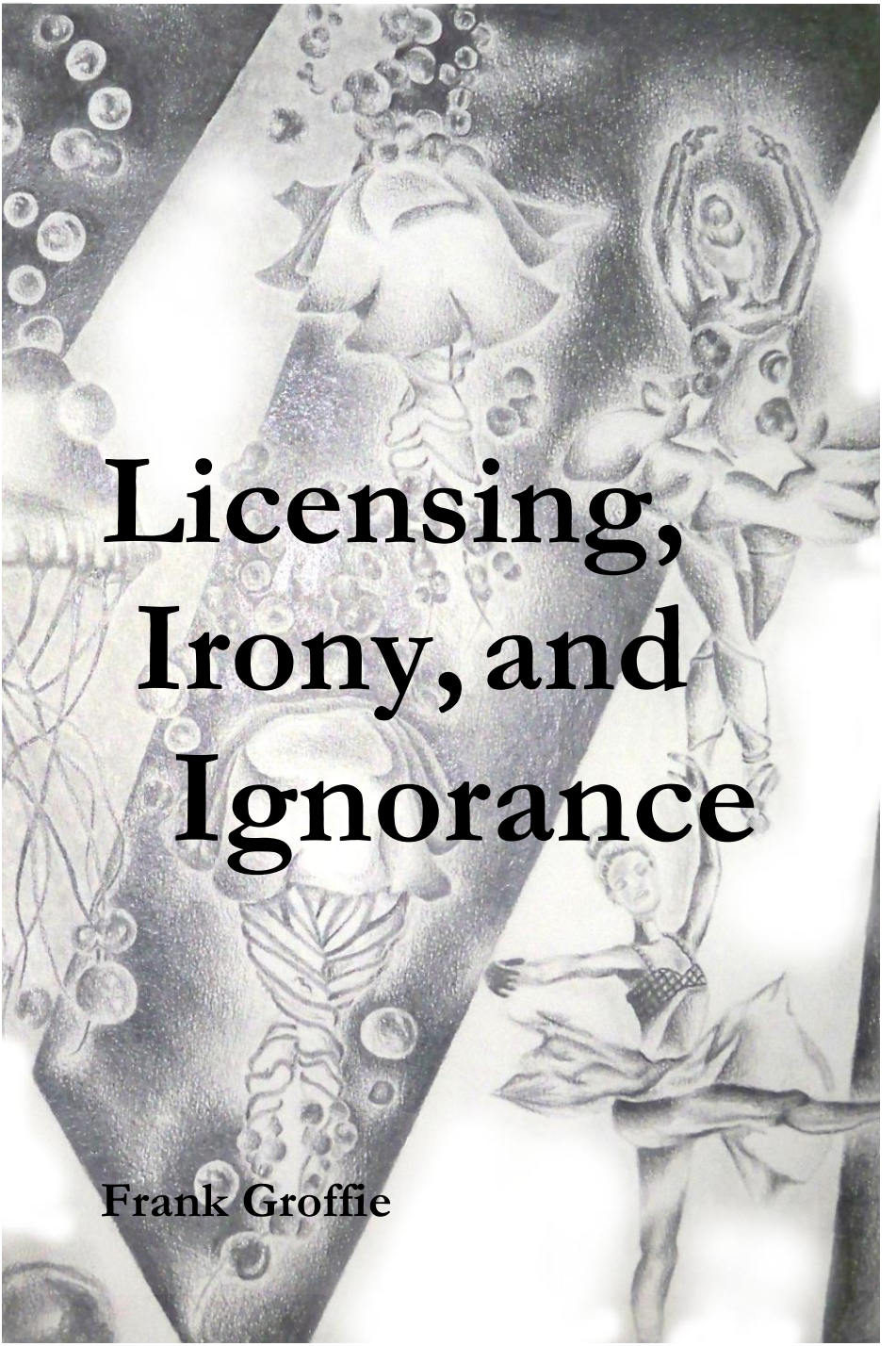

Licensing, Irony, and Ignorance

Frank Groffie

When the most insignificant person tells us we are in error, we should listen, and examine ourselves, and see if it is so. To believe it possible we may be in error, is the first step toward getting out of it.

JOHANN K. LAVATER

I would rather try to persuade a man to go along, because once I have persuaded him he will stick. If I scare him, he will stay just as long as he is scared, and then he is gone.

DWIGHT D. EISENHOWER

Don't just do something — stand there.

GEORGE SHULTZ

It is not in the nature of politics that the best men should be elected. The best men do not want to govern their fellow men.

GEORGE E. MCDONALD

The fox knows many things, but the hedgehog knows one big thing.

ARCHILOCHUS

All this has happened before. And it will all happen again.

UNKNOWN

Licensing, Irony, and Ignorance

by

Frank Groffie

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Contents

Preface

A mind once expanded to a new idea never returns to its original dimension.
OLIVER WENDELL HOLMES

Use soft words and hard arguments.
ENGLISH PROVERB

It's ideal when a book stands on its own and justifies itself without the expedience of a lengthy preface. I'm not clever enough to write such a book. So, I'll briefly explain where the thoughts in this book come from and how far they'll take us.[1]

This volume represents an attempt at something not yet tried beyond a small scale: to expose any interested members of the Association of Environmental and Engineering Geologists (AEG) and others interested in regulation of professions to a range of questions regarding the justification for professional licensing. It's a daunting task. It's difficult enough to get people to critically examine something familiar. We could ask a fish about the water around it. "Water, what water?" it might ask. It's harder still to then help people see that their ignorance of the familiar is in error. John Barron (1966, p. 640) expressed this sentiment well but in (rather dry) academic terms:

> It is reasonably well known that licensing programs can be, and often are, turned to the advantage of the licensing group, but such programs continue to go relatively unnoticed by the general public and their representatives. Although this may be due partly to the lethargy on the part of the public, it may also be because the effects of and alternatives to licensing are not clearly understood, so that the tendency is to accept without question the arguments advanced for licensing by those who seek it.

Probably one of the main roadblocks is that licensing is a grand *thing*, an actual *program* that is observable, palpable, and seemingly as old and solid as the hills. What its other opponents and I wish to leave in its place, as a sort of *status quo ante*, is seemingly some indefinable *nothing*. What would seem to be a great *nothing*, a gaping chasm (untrue, as we'll see), can seem inadequate when pitted against a lofty program.

My reasons for taking on this task, however, aren't what one might suspect. The issue doesn't appeal to me for emotional reasons. First, licensing has caused me little personal anguish. Years ago (1989), I passed the California exams to become a licensed geologist and a certified engineering geologist on consecutive days on my first attempt and with an average amount of effort. I've generally worked for employers who paid the biennial fees to maintain my state license and certificate.[2]

Also, I have no axe to grind with any licensing proponents. A good percentage of the hardiest proponents are fellow members of my local AEG section, whom I've interacted with regularly. These fine people have treated me and others around them well. So it's not with a light heart that I take a position putting me at odds with many of my colleagues.[3]

A few of my colleagues might even remember that I once helped promote licensing in the early part of my professional career (late 1980s).[4] All the while, though, I often wondered whether a preponderance of the evidence justified licensing, whether *it made sense*. I particularly wondered whether licensing made economic sense, since licensing tries to address an economic problem. The literature by geologists didn't supply the answer. Instead, I stumbled upon it elsewhere in the course of my readings, and the answer was no. I didn't go looking for objections to licensing. I sometimes find my fundamental views changed, but I don't change them often or capriciously. Simply, an open-minded reading of the abundant recent and historical literature critical of state intervention in voluntary exchanges and judgments convinced me my earlier position was in error. Upon reflection, I did find it unsettling to realize I had been left adrift to stumble upon and then do extra digging for this information. I simply wish that others won't have to go through this same process.

Nor is it a primary goal of mine to directly overturn or impede any licensing laws *per se*. If this were so, I might (seemingly) do better, rather than scribble these notes, to expend my energy directly imploring my state legislators to change those laws. There have been fine opportunities to do so recently in my home state of California that I haven't taken advantage of. I haven't, because it would be unsatisfying. The best arguments against licensing touch on core principles of philosophy and economics, which interest legislators very little. Sadly, to reach a legislator's heart, one must speak in the lexicon of politics: horse-trading, votes, campaign money, power, and ambition. These things interest *me* very little. Anyway, any efforts to undo licensing laws would stand little chance of succeeding: even when confronted with facts showing the wrongness of their policies, government simply will not let go.

Changing one licensing law would only give the proverbial hungry man a fish: he's been fed for a day. Better to teach him how to fish and feed him for a lifetime. This may be what is gained by unearthing and dragging the principles that underlie licensing out from under their rock and into the harsh sunlight for scrutiny. To do this, I'll try to impart some interesting basic concepts. These concepts can

become keys to seeing licensing and many other related features of the modern world in striking, valuable new ways. These concepts are accessed by turning off that football game telecast, cracking a book, and letting other minds speak to one by way of the printed page. The resultant delight and satisfaction in feeling one's understanding being altered and inverted in the process is something I want to share.

Lastly, I and others have watched a general unraveling of the American[5] social and economic fabric over the last 5 decades. Our standard of living has gone essentially sideways during that entire time, and crushing levels of sovereign debt guarantee that it can only go lower eventually. Polls show, experts claim, and the general zeitgeist says that few can expect decent retirements for themselves and future opportunities for their children. These facts of American life have been reported on widely enough that they need no elaboration here.[6] While occupational licensing is no more than a microscopic culprit in this outcome, the faulty concepts that undergird licensing are deeply intertwined with the primary factors responsible for this general deterioration in American life. I'd like to think that by offering sound concepts as replacements, I've at least raised a voice against certain unfortunate trends.

Chapter 1 of this book gives an introduction to the relevant literature and the general grounds of the discussion. I felt it worthwhile to devote a chapter to the grounds of the discussion, because up to now the licensing debate has been fought in the wrong arena. Questions regarding geological licensing are arranged in Chapters 2–6 in order beginning with, in my opinion, the more surprising, fundamental, and sturdy and progressing to the more accessory but still provocative. Chapter 2 concerns problems with licensing in terms of ethicopolitical philosophy. Probably the most startling finding is that licensing, in its attempt at enforcing principles of ethics, itself becomes an unethical act, something that is a feature of certain laws but not others. Chapter 3 summarizes the abundant evidence against licensing gathered by economists. Chapter 4 discusses clashes between licensing and the U.S. Constitution, some of which have been fought in the halls of the U.S. Supreme Court. Chapter 5 presents other problems with licensing and the arguments used by licensing proponents, including problems stemming from the practical and political effects of licensing and other miscellany. That chapter contains a sort of interdisciplinary blend of ideas and gives a glimpse into motives, serving as a bridge to the next chapter, Chapter 6, which argues that geologists harbor self-serving motives when favoring licensing. While self interest *per se* doesn't necessarily diminish the value of licensing (or the value of

anything, for that matter), people are nevertheless interested in motives: motives are important clues encouraging us to closely scrutinize the terms of any deal. Finally, Chapter 7 presents a few concluding remarks, which are followed by appendices, notes, and references. One needn't read in this order, however. For many readers, Chapters 3 and 5, on economics and other related questions, could be the crux of this book, where one could start from and work outward.

This book is part polemic and (I'd like to think) part sober diagnosis and part instruction. It's prescriptive, the references are eclectic, and I yielded to the temptation to insert an occasional rhetorical flourish. If there are errors in this book, I hope they're interesting, nontrivial errors and someone goes to the trouble to correct them — rigorously and at length.

Practically nothing in this book is original. To be more precise, most of the philosophy presented herein is borrowed from others, and the economics portion presents analyses published by others. Granted, I'd like to take credit for exposing the ironies and ignorance that lie behind professional licensing and for showing how the concept of informational asymmetry can pivot 180° and recoil back onto licensing. But I've performed no quantitative analysis of licensing myself. Thus, what you hold and will be reading is essentially a (mere) *meta*-analysis.

The scope of this project is to assemble in one place most of the conceivable objections to licensing of geologists. Many of these objections won't receive adequate discussion in some people's estimation. However, in defense of the project, it is hoped what is lacking in depth is made up for in breadth, enough to help spark critical analysis in the minds of at least a few thoughtful geologists. This breadth may give the appearance of a scattershot approach. So be it. The challenge for those writing about geological licensing is to contribute something original to what seems like an old, interminable debate. It is hoped this work meets that challenge. While I've tried to mention most arguments in favor of licensing and referred the reader to important sources to further explore these ideas, this book mainly presents the antilicensing viewpoint. The prolicensing viewpoint has already received abundant attention, as we will see.

The ideal would be a thorough, thoughtful, interdisciplinary dialog between economists, philosophers, and professional practitioners. Two fellow explorers of the geological licensing issue, Seena Hoose and Robert Tepel, bemoaned (1990) a lack of communication between physical and social scientists regarding professional licensing. This book isn't even the next best alternative: 280 pages of lecture

notes by several economists and philosophers delivered to pro-licensing physical scientists pointing out the errors of their ways. Nothing of the sort could ever happen, sadly, in this age of intense specialization and compartmentalization in academic discourse. The incredible power vested in politics and government, also, is a constant thermonuclear blast wave of inertia and ignorance that discourages any thoughtful, intelligent person from ever entertaining a glimmer of hope that their efforts might change society for the better.

What I've done is merely borrow some tools and data from philosophy and the social sciences and apply them to the issue of licensing of geologists. I'm not a social scientist speaking to physical science practitioners across the divide separating them. I'm a physical scientist listening in on the talk among the social scientists and returning to relay to my fellow physical scientists a fresher, richer way to view the issue. Perhaps the volume in hand together with the prolicensing literature will, collectively, give observers the balanced information required.

This book has been a long time in the making, so much so that I've had to change present tense to past in many places and update references and historical events to reflect current conditions. I began this project in the spring of 1996. It was about 45% complete by the summer. Another 25% chunk of material was added in a spurt in 1999–2000, when I had abundant time to spend in the fine academic library at Western Kentucky University, in Murray, Kentucky. Remaining bits and pieces were inserted here and there between then and now. Apologies for my tardiness.

Licensing has been debated in the wrong arena. It is a topic of philosophy and such social sciences as economics, history, and sociology. It's not a topic of the physical sciences which we practice. We must familiarize ourselves with the tools, principles, and customs of the social sciences if we're to make sense of licensing.

1. The Grounds of the Discussion

It is not enough that you should understand about applied science in order that your work may increase man's blessings. Concern for man himself and his fate must always form the chief interest of all technical endeavors, concern for the great unsolved problems of the organization of labor and the distribution of goods — in order that the creations of our mind shall be a blessing and not a curse to mankind. Never forget this in the midst of your diagrams and equations.

ALBERT EINSTEIN

Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.

JOHN MAYNARD KEYNES

The guilds are back.[7] The medieval craft, merchant, and professional guilds, which possessed quasi-governmental authority hundreds and thousands of years ago and were thought vanquished, have returned in our time in the form of occupational licensing and its tight relationships with the professional associations and regulatory codes. And licensing of geologists appears to have latched onto the body politic quite well. In 1956, Arizona became the first state to regulate geologists. In 1968 California became the second. Then in the 1970s, six additional states and in the 1980s nine more states joined the list (Anonymous, 1996a). This trend went unabated in the 1990s. In all, twenty-nine (out of fifty) U.S. states license geologists (Tepel, 2011).

Licensing is based on a queer *idée fixe*, that the preferences of state bureaucrats somehow supersede those of their neighbors, giving bureaucrats the right to wield power over their fellow human beings. It shouldn't be too surprising that this sort of notion flourishes in our postmodern environment, in which the hard power emanating from votes, poll numbers, focus groups, and money has replaced the soft power of ideas, values, and the lessons of history. Power has become ideology.

There are so many other ironies, absurdities, distractions, confusions, and profound errors and omissions buried under the foundations of licensing that their excavation and removal leave the overlying structure in ruins. One main irony is that licensing is not an issue of the hard, physical sciences, nor is it a matter for policy wonks to tinker with at the margins. Rather, it's an ethical, economic, and sociologic issue that directly affects thousands of people at any given moment in time and indirectly affects millions over longer time horizons. Proponents of licensing mostly manage to avoid studying the issue from these standpoints. Furthermore, they appear to have only a small inclination to raise their qualifications to study licensing from the point of view of economics and ethics, yet they're quick to make anyone jump several qualifying hurdles before they may practice geology. What licensing proponents do resembles the practice by the underqualified that they so readily scorn.[8]

What can we agree on, and where do our views diverge? (1) We can all agree that geologic study has value. And (2) that high-quality geologic service is often a better value than the low-quality alternative. (3) Many of us have seen or read about instances (e.g., Mathewson, 1990, p. 101–108), many predating licensing, where an outcome could have been drastically improved if we had the opportunity to alter a

crucial geologic decision. (4) I see nothing wrong with government dealing harshly with geologists who behave unethically toward consumers. (5) I can wholeheartedly agree that practice by geologists potentially affects many beyond the clients whom we directly engage. (6) I see nothing wrong, in and of itself, with professionals taking an exam to demonstrate a level of competence.

My only quibbles with each of these six preceding statements, respectively, are as follows: (1) Geology is valuable indeed; so what? (No quibble there, really.) (2) Exactly how high should quality be? And what about *quan*tity? (3) Exactly how do we extrapolate from knowing better in one specific instance to knowing better in many thousands of other instances? (4) Exactly what form does government regulation take? (5) How far into the socioeconomic fabric of society do we really wish to believe that our influence extends, and how far do we wish to disrupt it with naked force? And, finally, (6) exactly who does what with any exam results? Behind these seemingly overly nuanced quibbles lurk some dauntingly grave and complex issues.

Arguments in favor of geological licensing have been presented on a grand scale. Tepel has written at least seventy essays evaluating and defending licensing that were published in *AEG News* beginning around 1990 and continuing to the present.[9] Twenty-one of these essays were compiled in a single volume published by AEG (Tepel, 1995). Five years earlier, AEG published (Tepel, as editor, 1990) a collection of thirty-four papers given at a colloquium on regulation of geologic practice held at AEG's 33rd annual meeting. Among the published papers in both volumes, essentially all supported state regulation. Tepel continues to enjoy seeing his prolicensing essays published. The advocacy of licensing of geologists indeed has a splendid pedigree, although this advocacy is restricted to the insular echo chamber of the licentiate, as we'll see.

The Underworlders

Glimpses of counterarguments to licensing have occasionally appeared in AEG's forums of discussion. Some counterarguments have briefly shown up in the works mentioned above (notably those by Alan Stover [1990], Hoose and Tepel [1990], and Tepel [1995]). Later opposition from within the organization came from Fred Fox (1990, 1992, 1995) and Carl Savit (1990a, b). I (Groffie, 1994) joined the discussion with an essay that received support from Gennaro Avolio (1994).

Some of the expressions of antilicensing sentiment have seemed like the proverbial toss of the hand grenade into the latrine. This is partly because the subject isn't one that is wholly arid and abstract. If it were, we could approach it with a more measured tone. Also, impatient, vivid writing seems to be what naturally occurs or what is called for when the minority viewpoint must be compressed into the small amount of print space allotted to it. The voices of disagreement seem to have been marginalized in the discussion of geological licensing. This marginalization has been performed partly by keeping the discussion rather one-sided and partly by the one side, the prolicensing side, taking the discussion onto higher and higher planes of trivia, concerning such things as the best proportion of multiple-choice questions on the exam and fine tuning of enforcement. This gives the more fundamental questions an air of having been decided, a *fait accompli*.

A very similar sort of focus on fine tuning was seen in the sciences during the Victorian era. Scientists in several fields thought they had nailed down all the basic laws and all that was left was to refine the experiments, add more terms to the equations, and increase the precision of the constants. This was very much the case with physicists, who thought the equations of Newton and Maxwell had things pretty well covered, until Einstein jolted his peers out of their complacency in the first decade of the 20th century. Economics, too, around that time became quantitative and mathematical and was tightly focused on a sort of stately equilibrium. The fundamentals were seldom debated. This neglect had the effect of shushing those few who questioned the fundamental assumptions.

If you'll forgive my replacing the words *licensing* and *geologists* in brackets in place of the words *economics* and *economists* in the following passage by Robert Heilbroner (1986, p. 178–179), see how the same sort of *fin de siècle* sentiment and the resulting marginalization of dissent once present in economics is mirrored in recent events in the geology profession:

> Suddenly [licensing] was no longer seen as a fateful historic social vehicle, but as a tame, rather historyless, mode of organization. The driving propulsion of the system — the propulsion that had fascinated all its prior investigators — was now overlooked, ignored, forgotten.... And so, as a counterpart to this pale world of equations, an underworld of [geologists] flourished. There had always been such an underworld, a strange limbo of cranks and heretics, whose doctrines had failed to attain the stature of

> respectability.... [But] now the underworld claimed its recruits for a different reason. There was simply no longer ... tolerance in the stuffy world of Victorian correctness. ... And so the underworld took on a new life. ... It was a far more interesting place, this underworld, than the serene realms above.

So, on the whole there would seem to be an imbalance. Much material advocating geological licensing has been published, with little to counterbalance. The best explanation for this imbalance is that a majority of the geology profession favors licensing. John Gale et al. (1990) reported that of 1,350 geoscientists surveyed in British Columbia, 91% were in favor of regulation of the profession. James Williams (1990) reported support for licensing from the state geologists in most U.S. states. My personal observations bear out these figures. At a regular meeting of the San Francisco Section of AEG in 1995, licensing became a topic of discussion as it occasionally does. Section Chairman Rex Upp asked for a show of hands from those in favor of licensing. Enough hands were raised that Mr. Upp, for easier counting, asked for a show of hands instead from those against licensing. Mr. Upp finally phrased the question in a way that made for easiest counting: I recall that no more than one hand[10] was raised. Roughly sixty people attended the meeting. Although a nonsecret poll in a forum of one's peers can exert pressure to toe the party line, and San Francisco is located on, ahem, slightly leftward-dipping strata,[11] the roughly 60-to-1 margin in favor of licensing in this sample could be taken as an indicator of sentiments within AEG and perhaps the geologic community as a whole.

There seem to be few people in the geologic community interested in probing the structures supporting licensing at its base. Fewer still are those willing to walk into the stiff political wind that favors licensing. It seems this gale wind blows as hard now as anyone can recall. Some might infer from this situation that the basis is sound, but this reasoning would be fallacious. It would be based on the notion that an idea is correct simply because it is held by a majority of people. This myth should be dispelled.

The small number of geologic underworlders could also lead some to infer that a discussion of the subject would meet many yawns. Alas, this inference could be correct. If so, how wasteful and unfortunate. Everyone practicing in the geologic community is a scientist who should fight complacency and remember to consider more than one explanation for an observed phenomenon. This is especially important when the one explanation is a revered, old, hoary theory that

increasingly wheezes to explain new data. One might recall how Ptolemy's Earth-centered universe was confronted by Copernicus's sun-centered solar system, or how creationism collapses under the weight of data in support of Darwinian natural selection. It was once widely believed that the world was flat and that wages and prices could be controlled using government wage and price controls. It was once believed that a man could fly if provided with properly designed hand-held wings and that unseen spiritual forces were responsible for poorly understood natural phenomena such as volcanoes or earthquakes. It's still a widespread, ignorant, simplistic belief that a minimum wage level will help the poor, those hanging onto the lower rungs of the economic ladder, although this belief conveniently ignores the many low-wage workers who will be kicked off the lowermost rungs and replaced with machinery or by neglect in the form of filthy freeways or filthy supermarket floors. Geologists should remember to prize their tradition of tenaciously hanging onto multiple working hypotheses as long as possible when trying to explain, say, an odd outcrop pattern in unfamiliar country: fault, fold, facies change, or other?

Which brings us to a serious need in this discussion, that those who ponder this issue learn to reason anew and to question assumptions. Will Durant (1981, p. 30) advised:

> It is the simplest thing in the world to construct a philosophy out of our wishes and our interests. We must be on our guard against being communists because we are poor or conservatives because our ship is in. Whatever philosophy delights us best must be most suspected.

One of the greatest ironies in the debate over geological licensing is that the antiregulatory view, clearly the minority viewpoint in the geologic community, constitutes a majority view in economics, philosophy, and sociology. (Or, at a minimum, a plurality view or highly respected force, if one visits a carefully selected school or particular college department). Kenneth Clarkson and Timothy Muris (1980) said that "almost all economists agree that at least some forms of occupational regulation harm consumers." Xueguang Zhou (1993) ended his review of the sociological literature on licensing with the conclusion that "to date, the literature has been overwhelmingly one sided" in opposition to professional licensing. Hayne Leland (1980) recognized the same trend. Hoose and Tepel (1990) may have also but remained very quiet about it. Geologists observing the licensing debate have stayed blissfully ignorant

of this countervailing evidence for too long. Perhaps we geologists believe we can ignore all philosophic and economic questions surrounding licensing since they originate in the humanities and social sciences, while we're physical scientists doing physical science. This is plainly wrong.

The Philosophers

Philosophers and social scientists have much to tell us. Licensing is a complex issue. And the truest answers when addressing such an issue result when we apply to it the tools made available by philosophy, history, economics, logic, sociology, political science, and law.

Hence, the arguments to follow originate from a very different frame of reference for viewing the issue. This might seem to present a crisis to some. But every crisis also presents an opportunity. Like the breadth requirements we needed to hurdle to earn our baccalaureate degrees, these discussions will give one a taste of some very different thinking styles applied to the licensing issue, particularly philosophy and economics.

When philosophy is mentioned, geologists shouldn't reflexively slink away like Dracula from the sun or like (most) people who claim to have a math phobia. *Philosophy*, the term, is derived from Greek root words meaning the love of knowledge. Philosophy once was the sum of all higher thinking. It's sometimes called the queen of the sciences, with its offspring such as mathematics, physics, astronomy, chemistry, biology, et al. leaving the nest as they became better founded empirically. Durant (1981, p. 7), again:

> The sciences are the windows through which philosophy sees the world; they are the senses of which it [philosophy] is the soul. Without it, their knowledge is as chaotically helpless as sensations that come to a disordered mind, making an idiot's lore.

It's been said that philosophic questions are the most important type of questions that can be asked by anyone — except those asked by a child. As you read this, philosophers are actively engaged together with computer scientists to develop artificial intelligence.[12]

Even those geologists disinclined to tackle philosophy must enter this realm if they wish to better understand the underpinnings of licensing.[13] Reluctant as some may be to face this fact, the fundamental aspects of this issue lie within the purviews of ethics and political philosophy, which form two distinct branches of Western philosophy.

Tepel (1990, 1995) and Fox (1990, 1995) have already realized this. However, this isn't just because licensing is a legal attempt to codify professional ethics. Licensing intersects with professional ethics only on a superficial level. Licensing and general ethics positively *clash* at a far *deeper* level in that licensing is an action taken by people, and ethicopolitical philosophy is the study of what is good (and bad and right, wrong, and neutral) in human conduct. Here, at this level, is where things get interesting.

Nomenclature

A few words about nomenclature at this juncture: There are practice acts, which regulate who may practice a profession and, by extension, how it is practiced. This regulation is accomplished by way of licensing, which the Council of State Governments (Anonymous, 1952, p. 5) defined as "the granting by some competent authority of a right or permission to carry on a business or do an act which otherwise would be illegal." The term *licensing* is usually used when the practitioner has to jump through hoops to get a license, e.g., exams and years of experience, and thus to practice a trade. The terms *licensing* and *licensure* are equivalent and are seen in about equal proportions in the literature. I simply prefer the former.

Then there are title acts, which regulate who may call themselves by a certain title. This is called state certification. In California, whether one may call oneself a certified engineering geologist is regulated by a title act. One earns this title, *CEG*, on top of and only after first being licensed as a professional geologist, or *PG*. Also, in many writings, *certification* is used to mean certification by a private-sector organization, such as AIPG, which does privately certify geologists. Europeans, as we'll see later, tend to rely on certification only and know little of this thing we in the U.S. call *licensing*.

And there is registration, in which practitioners are required to register with the state without other restrictions on entrance into the practice. It's possible, however, to structure registration such that registrants can have their names removed from the roster and be denied certain rights by failing to observe practice guidelines. Therefore, registration can serve as a milder version of licensing. Take care to understand the meanings when these terms appear in the writings on the subject. In many writings, particularly older ones, the term *registration* is used to mean licensing.

Stover (1990), an attorney, and Simon Rottenberg (1980) and Tepel (1995, p. 6–7), other experts on the subject, have given more

expert, detailed explanations of these legal distinctions than I have here.

Practice Acts, Foundations

Sidney Carroll and Robert Gaston, in a footnote to a 1983 paper, said that for their purposes "all types of occupational restrictions are subsumed under the rubric of licensing here. The distinction is not worth the difference ... ." In contrast, in the work in hand, the difference looms very large. As the title of this volume suggests, we should concern ourselves with licensing, or practice laws, rather than certification (title acts) or registration. The problems with title acts and registration are trivial compared to licensing.

And we're to concern ourselves with the foundations of licensing — the question of whether it ought to exist — rather than the superstructure. The superstructure of a mansion can be roomy and pretty and nicely crafted, but if its foundation or the underlying earth won't bear the weight, the mansion becomes unlivable, as engineering geologists are well aware. Efforts to tinker with licensing by fine-tuning enforcement, the exam questions, the grandfather clause, etc., are like putting window dressing in our mansion with the distressed foundation. By distressed, I mean that licensing in practice doesn't achieve its stated purpose without causing other problems and violating basic rules people use to decide whether any course of action should be taken.

These rules are essentially the same two criteria used to assess whether a pharmaceutical drug is good: Is it safe? And is it effective? The main thrust behind licensing is that it purportedly improves geologic practice, thereby purportedly saving lives and dollars. To end all study and discussion there is to plod down the street like a draft horse fitted with blinders. Yes indeed, licensing might improve (or degrade) practice if the situation is viewed with tunnel vision, but there has been a failure to ask about the medication's side effects. Are these effects worse than the cure? Does it, on balance, cost consumers more? Does the medicine affect people's lives in still other ways that require hard work to quantify and put a dollar figure on but are nonetheless deeply disturbing to our sensibilities? As Garrett Hardin explained in depth in his 1985 book (p. 58), "we can never do merely one thing." All actions have more than one consequence, many of them unintended and unwanted.

Viewpoints

As the title of this book suggests, my critique has a viewpoint. No attempt is made to pretend otherwise. Nor is any apology offered or needed.

Indeed, most of the literature regarding licensing takes a stance, including the prolicensing literature cited earlier. In fact, for any written work in any field of science to be valuable it needs to present something original and use the findings to support a conclusion. In this sense then, almost every published work in even the driest scientific journals takes a stance of some sort. The only important way for such a stance to matter is how well-reasoned it is. If a researcher botches the reasoning process in arriving at his or her stance, say, by ignorantly dismissing important counterarguments, or placing attention on the people behind the arguments rather than the arguments themselves, or making inductive leaps worthy of some Olympic long-jump medal winner, then, yes, the stance looks foolish. But a work can favor one side of an issue while remaining solid work and playing fairly with its audience. It does so by presenting its conclusions clearly, employing sound reasoning, citing relevant and respected sources, and discussing where variables have been accounted for and controlled. It's done all the time. So, we needn't run away in fear from a stance per se, as Hoose and Tepel (1990) and Tepel (1995) warned, though we may turn up our noses at a poorly formed one.

As might be apparent this far, this volume is partly a response to the rich literature published by AEG favoring licensing of geologists. Some criticisms will be pointed directly at some of those works. Again, it's common in the social sciences to write in direct response to the works of others. Geologists needn't squirm at the sight of this. The terms *criticism* and *critique* are used here in the sense of careful analysis, evaluation, and study of documents as much as in the familiar sense of passing judgment. A distinction is important to keep in mind: at no point do I aim criticism at any individuals, only at the ideas that individuals have chosen to present for our evaluation.

Criticism (done properly and in good faith) is a principle method of operation in the social sciences and philosophy, where reasoned discussion and consensus are heavily relied on in the absence of the abundant empirical data available in the physical sciences. Controlled, repeatable experiments are difficult to devise in the study of social systems. Indeed, experiments on people are sometimes unethical (perhaps the licensing experiment, too?). As in Brownian motion, in which energetic molecules visibly jostle a grain of pollen, a philo-

sophical idea needs to be batted about from various sides to see where it heads, if anywhere. The progress of knowledge is a sort of marketplace of ideas, much like organic evolution: progress, markets, and evolution are messy and are unpleasant for certain individuals, but they're necessary to avoid stagnation. Actually, if we think about it, discussion and consensus play a significant role in the physical sciences, too. Rarely does a single study in a physical science make for an accepted new theory overnight. The results need to be duplicated by other researchers, additional data need to bolster the conclusions, skeptics have to be given time to come around (or die), and eventually a consensus forms.

Granted: viewpoints, critique, and paradigm shift don't make their way so overtly or often into geologic literature due to an abundance there of empirical data and general agreement on physical laws. This explains the discomfort a physical scientist likely feels entering the realm of the social sciences. But it may go a little too far to characterize our discussion as does Tepel (1995, p. 19) as leaving behind the "balanced, dispassionate approach adopted by physical scientists" and entering an "emotional" realm of "the highly opinionated viewpoint[s] of partisan advocates." Our initial discomfort can be lessened, as I hope I've shown, by recognizing that we physical scientists have been working with viewpoints all along and that criticism can be just a way of evaluating documents and exploring topics.[14]

For example, geologists Phyllis Camilleri and Kevin Chamberlain (1997) argued for substantial Cretaceous tectonic extension and contraction in the Sevier hinterland of Nevada. Geologist Jim Wise (1998) replied in disagreement. Leland (1980) argued that market failure calls for professional licensing. Leffler (1980) and many others before and since explained how the notion of market failure is mistaken. I don't perceive a great difference between published discussions in the physical sciences and the social sciences.

Also bear in mind and be assured that published papers in the academic literature in the social sciences are held to quality standards just as they are in the physical sciences. Tepel (1995, p. 3) erred when presenting his readers with this:

> [G]eologists who cite the studies of economists in support of their views of professional licensure may be citing studies that would not stand up to the scrutiny of any geological journal's peer reviewers. It is folly to cite such studies on the assumption that they represent thorough and unbiased scientific investigation such as we employ in the physical sciences.

If Tepel simply, truly believed this, then he was simply, thoroughly mistaken. If he meant to *suggest* this, leaning heavily on the qualifier "*may*," then he misled his readers. Tepel would imply that papers published in the *Geological Society of America Bulletin* are peer reviewed (which, of course, they are), whereas those in, say, *Journal of Political Economy*, *Econometrica*, *American Economic Review*, *Harvard Law Review*, or *Philosophical Quarterly* are not. As if their editors are asleep at the switch. Care to try your hand at following the mathematics and statistical analysis in a paper in *Econometrica*?

Thus, we have little to fear from any science, even what appears to be someone's perceived partisanship, if one has a good grip on sound methods of reasoning and knows how to filter out poor argumentation.

If fear isn't the entire reason that physical scientists avoid viewpoints, then perhaps indifference explains the remainder. Many people seem to think that disagreement and discussion resolve nothing. Some things are just matters of opinion: "I have my opinion and you have yours." Shrug. "There's a golf tournament on T.V." And somehow this is thought to end the matter. This is naked ignorance and a lazy unwillingness to think, another tendency for us to avoid.

In any case, it's necessary to recognize that the discussion of professional licensing must enter the realm of ethicopolitical philosophy and the social sciences: at a minimum philosophy, economics, and constitutional law. That means that if one wishes to enter this discussion, one must get used to the fresh ideas these branches of thought have to offer and must become comfortable with viewpoints (our own and those of others) and criticism. Better yet, let's revel in them.

Licensing is unethical. It runs counter to our Anglophone political heritage and violates concepts of Kantian ethics and classical liberalism. This is ironic, because certain of those same ethical axioms are unwittingly used as the basis for licensing and many of the statements of professional ethical principles. Licensing, then, collapses in on itself. In addition, concepts central to the argument for licensing, such as those of professionalism and the public, are fraught with such problems as digitization, mesmerization and reification.

2. Philosophical Voids in the Foundations of Licensing

The people never give up their liberties but under some delusion.

EDMUND BURKE

If you want to be free, there is but one way; it is to guarantee an equally full measure of liberty to all your neighbors. There is no other.

CARL SCHURZ

If you lose all respect for the rights of others, and with it your own self-respect; if you lose your own sense of right and fairness; if you lose your belief in liberty, and with it the sense of your own worth and true rank; if you lose your own will and self-guidance and control over your own lives and actions, what can all the gifts of politicians give you in return?

AUBERON HERBERT

Nothing is older than the idea that human wisdom is concentrated in a select few, who must impose it on the ignorant many.

THOMAS SOWELL

Ethics is more than a set of rules to decide how to conduct oneself toward others. It's the rational study into the best way to live. From Durant, again (1981, p. 13), we hear in rather breathy style that

> [In ethics] philosophy lifts her varied knowledge into living wisdom, and from her many mansions gathers guidance for mankind. ... Here if anywhere are vital questions, in which entire civilizations may find their fate involved; here are dilemmas that touch every state and every heart; problems by the side of which science, with its bookkeeping and its shorthand, its liquids and solids and gases, seems something remote and inhumanly cold, something not so much allied to life as unwittingly in league with death.

Durant's tone might lean a little too much to the mystical side, which could suggest to some readers that there will be religious overtones in the discussion that follow, that some ideas offered are to be taken on faith. Have no fear: ethics and religion are only good neighbors, not bedmates. You'll encounter nothing theistic or mystical as you read on.[15]

Licensing and Human Dignity

A perceived gap in any given professional's concern for the rights of others is cited as a major driving force behind professional licensing. Licensing is the way some (most) would choose to enforce ethical behavior with regard to professional geologists performing services for consumers, or at least to greatly reduce certain more-egregious unethical acts. Probably the most harmful of professional acts that licensing seeks to eliminate is that in which a geologist performs services for which he isn't qualified, thereby possibly placing the consumer and their neighbors in harm's way. Unqualified practice is an act that stems from the practitioner's willingness to give preference to his own desire for income over the desire of the consumer to receive at least minimally adequate (at least not subadequate, risk-riddled) services in return. The practitioner has an ethical duty to give the consumer's interests an importance equal to or greater than his own. Tepel (1990, p. 8) said that

> a registration [licensing] law, as are many other laws which govern human action and behavior, is based on fundamental ethical con-

> siderations because it defines, at least in general terms, when behavior is considered proper for certain individuals (qualified geologists, for example), and seeks to protect the public from harm by denying certain other individuals (defined as unqualified) from engaging in certain behavior, the practice of geology for others, for example.

Although licensing is touted as solving an ethical problem, licensing itself is unethical. This was the surprising and unfashionable assertion I put forth in 1994.

To understand how this could be so, let's begin at a familiar ethical landmark, AEG's code of ethics (Anonymous, 2006a). Once we understand the AEG code of ethics, we may be in a slightly better position to get a handle on the relationship between ethics and licensing. According to Tepel, licensing laws and a professional code such as AEG's share the same basis in ethics. He said (1995, p. 15–16),

> In a very basic way, licensure laws are directly tied to ethical principles. The preamble to almost every existing licensure law for geologists uses language very similar to the language found in many professional codes of ethics. ... Licensure laws are based on and justified by the same fundamental ethical consideration that appears, in one guise or another, in most professional association codes of ethics or codes of professional behavior.

The AEG code of ethics is a reasonably comprehensive yet concise (one-page) outline of what geologists should do to practice in an ethical manner. Its four main points are that an engineering geologist should act with regard toward (1) "the public health, safety and welfare," (2) clients and employers, (3) colleagues, and (4) the profession. These four areas are broken out into a total of twenty-one short numbered clauses. Most of us are probably familiar with this code of ethics. If not, a skim through it should create no surprise in any geologist. Most will find it to be a sensible, relevant, workable code. I concur, and I won't expend much energy pointing out its faults.[16] We should find that we've consciously and unconsciously been using (or trying as much as possible to use) its principles in the decisions we make every day of our professional careers. (Is it possible that some practitioners try to use some of the principles as *little* as can be gotten away with? I highly doubt it: we're a good bunch of folk.) For example, Clause 2.2 comes into play often: it urges us to "uphold the trust placed in [us] by the client or employer to practice with professional

and fiscal responsibility." Several times every hour while we're working we decide whether we'll act responsibly with our employer's or client's money. How? Simply by deciding whether we'll work efficiently and carefully any given moment. The struggle for integrity is a daily one.

Important questions to ask to begin to understand the code include the following: Where do the various clauses in the code come from? Is there some source from which they all flow? Can we find the "fundamental ethical consideration" that is said to be embodied in the code? Or is this code of ethics just a random hodgepodge of aphorisms?

If it were just such a random collection with no cohesion, then I think it would be wanting as a useful code. We could then ask Why should we "uphold the trust placed in us by the client?" Why should we try to live up to principles that have no explanation, that we can't make any sense of? The code would represent a dead end, and licensing, which shares ethical justification with the code, would then be dead with it.

I don't think this is the case, and I concur with Tepel. The code is more than noise, more than a mere random collection of homilies or the senseless ramblings of a patient in a mental asylum. The code makes sense; it coheres. There's a smaller set of principles common to the twenty-one items in the code. Because there is such a smaller set, the AEG principles could be said to be algorithmically compressible in the same way that a regular repeating pattern of musical notes or numbers can be simplified mathematically.

In compressing this information, we're doing what people usually do when faced with complexity: to try to see patterns in our surroundings, to create a model, to use inductive reasoning. The better the model, the better our understanding. With an analysis of the AEG ethics code, we could not only understand them better but we could add more principles to the existing list in the same way a cookie cutter can be used to make more cookies. Not that we necessarily wish to add more principles to the list. But we could (if we wanted to) stamp out more principles or statements if we were able to identify the mold or algorithm or philosophical basis for the existing principles in the AEG code.

A model, a general conceptual template, shows itself when we consider a different, two-fold division of the statements in the code of ethics in place of the four-part arrangement in which they're published. In this two-fold division there's a pattern that allows us to lump together Clauses 1.3, 2.1 through 2.8, 3.2, and 3.4. These princi-

ples urge us to *disclose*, practice fiscal *responsibility*, maintain undivided *loyalty*, *respect confidentiality*, *truthfully represent* one's credentials and capabilities, accept only those assignments one is qualified for, express only those claims that can be backed up, and avoid plagiarism. This first class of statements makes up about half the code, if we ignore the exhortations promoting public health (for reasons that will become clear later).

The remainder (again ignoring public health), what I'll call the second class of statements, concern a diverse conglomeration of exhortations. They lie scattered throughout the code, but let's pull them together: they are Clauses 3.1, 3.3, and 4.1 through 4.4. These tell us to do such things as *share* professional knowledge, set a good *example*, *upgrade* our capabilities, *encourage* others to upgrade their capabilities, and *encourage* people to enter the field of engineering geology.

The characteristic the *first* class of statements has in common is that they deal with integrity and honesty, which has an almost mandatory, obligatory feel to it. Most geologists probably will agree that, say, a failure to disclose conflicts of interest or failure to practice fiscal responsibility is ethically wrong. If there were a black–white, wrong–right scale to measure actions, then submitting phony receipts or inflated invoices, examples of fiscal irresponsibility, would always fall in the black zone. This is what was meant when the first group was called obligatory: it's obligatory, say, not to inflate charges. This holds true whether the amount is $10 or $10,000. To cheat by either amount is an action that falls in the black zone. Therefore, the following sentence in the preface to the AEG code of ethics seems incorrect:

> Because adherence to any statement of ethical behavior is recognized as a matter of personal choice, individual members should regard these Principles as a voluntary guide to their professional practice and conduct.

Incorrect, as I just said. Few of us probably regard the principles in the first group as voluntary or matters of personal choice. We wouldn't feel comfortable calling these matters of personal choice if the tables were turned and we were on the receiving end of another professional's treatment. We probably would all feel violated if, say, our doctor overcharged or falsified her credentials.

However, we would probably feel comfortable calling the principles in the *second* class voluntary. And this very voluntariness is what

places these principles together in a separate class. The second class of statements seems to involve professional excellence and growth, and these statements feel somewhat less mandatory than those in the first class. Should it be voluntary that geologists and doctors share professional knowledge, set a good example, upgrade their capabilities, encourage others to upgrade their capabilities, and encourage people to enter the field? The answer clearly is yes, it should remain voluntary rather than obligatory. These are all good things, but they aren't absolutely good in the white–black sense of the first class of statements. Excellence is good but not obligatory.

Keeping up with *important advancements* in the field is an interesting issue. Can your local medical center boast the latest, greatest, $1 million piece of imaging equipment? Perhaps not, out of financial considerations. Though we're all lay persons in terms of medicine, many of us may feel qualified to provide cardiopulmonary resuscitation (CPR) if the need ever arose. Yet, many of us may be unaware that best practices in CPR have been substantially revised in recent years regarding the best ratio of chest compressions to artificial respiration (in the case of infants, that ratio is infinity: ha, surprise). Are we negligent in our ignorance? No. We have no obligation to innocent bystanders in some out-of-hospital emergency situation to know this.

When we haul ourselves into the doctor's office for advice and treatment, however, we trust ourselves to professionals, and we trust that they're well versed on current best practices. In terms of cancer treatment, this may be the best ratio of slash to burn to poison (surgical removal, radiation therapy, and chemotherapy). We trust that our doctor at least reads some of her professional journals, collaborates with colleagues, and introspects on what has worked for her in the past and what hasn't. This sort of reflection and keeping up with important, well-known findings in one's field seems to be a nearly obligatory form of upgrading of a professional's capabilities. How long may those medical journals sit in the in-box unread before an implicit understanding between doctor and patient may be considered violated? We've entered a twilight zone.

Regardless, I do see a two-fold division of basic principles in the AEG code of ethics. This dualism resembles a pattern Jacquie L'Etang (1992) saw in many professional codes of ethics. She said (p. 741), "Kant distinguished between perfect duties, which are obligatory, and imperfect duties, which bind one only to adopt the maxim of developing talents and helping others but which leave one free to choose the method. Codes of ethics typically include both types of duty."[17]

Later we'll explore further what the ideas of Immanuel Kant (1724–1804) can tell us about professional licensing.

Let's focus for now on just the first class of statements in the AEG code of ethics and set aside the second class. And just to be clear, let's pause and summarize where we are at this point:

- First class, obligatory: Clauses 1.3, 2.1–2.8, 3.2, and 3.4.
- Second class, nonobligatory: Clauses 3.1, 3.3, and 4.1–4.4.

What makes the first class of principles obligatory and the second class voluntary? What makes the principles in the first class obligatory probably stems from their factor in common, their concern with integrity and honesty. It would seem we've found a first-order principle: don't ever lie. However, this won't quite do, since not all lying is wrong. Clearly it's not wrong to bluff in poker, lie in the game of liar's dice, or spin tales about Santa Claus, the Tooth Fairy, and the Easter Bunny for young children (although there are some overly serious parents who disagree). Most people consider it all right to tell a so-called white lie to spare a friend's feelings. And if an obviously crazed man were to bang loudly on one's front door one night and demand to know if any women were hiding in the back of the house that he could rape (and there were), we would probably agree that it's permissible for one to lie and reply no. So, *don't ever lie* isn't quite the basic principle being sought.

What about a principle focusing on the idea of harm? Dishonesty can lead to people being harmed. Tepel (1990) felt that the main role of ethics in licensing is to protect consumers from harm. It seems he might have been pointing to the protection of consumers from harm as a sort of general ethical principle to found licensing on. The problem, however, with seeking a general principle based on the concept of harm is that harm can be hard to define, making it hard to recognize when harm has taken place.

Imagine someone from a prescientific culture instantaneously dropped into an emergency room, surgical arena, or dentist's office and lacking any knowledge of modern medicine, watching the knives, drills, hypodermic needles, and saws at work, seeing blood spewed everywhere, hearing the moans and screams from patients, and witnessing the grinding, slicing, and sawing of body parts. Our otherwise highly intelligent and wise observer from a prescientific background would be instantly convinced that people are being harmed. In a sense, we could agree. Patients are being caused much pain. Yet we, imbued with a bit more knowledge, know that the patients have

elected to undergo the various medical procedures and endure the pain that's involved. They do so with the expectation, or taking the gamble, that their pain and harm are temporary: they are investments in a long-term lessening of overall illness and pain. There's another variation on this theme: some prescientific people have been of the belief that one is harmed by having one's photograph taken, as this robs a person of their soul. We know that photography involves no such harm, yet we would still be reluctant to take the pictures of such believers, at least not with their knowledge, since it would rob our relationship with them of something: of trust, of a tacit agreement. Harm is in the eye of the beholder.[18]

Harm is a probabilistic issue. We all weigh the potential for harm versus pleasure many times in a given day, year, or lifetime. We also employ our own weigh scales. We do so when undergoing medical procedures, selecting friends, selecting a spouse, choosing intimate relations with others, having children, moving residences, choosing careers or jobs, deciding between lying in bed to read *Tess of the Durbervilles* versus hiking to the top of Mission Peak on a day off, and deciding between watching a basketball game or getting a mechanic to look at those strange rattles and pulsations in the steering or braking systems of our car. We weigh such factors when deciding to watch a TV football game rather than correct a leaky toilet and nearby warped floorboards and moldy trim in our house. In choosing one path over another in these decisions, we could do harm to ourselves or others, or others could end up doing harm to us, or we could put ourselves in harm's way, or we end up spending more money in the long run.

It's also generally conceded that professional licensing boards typically spend little energy seeking out harm that professionals have directly done to consumers (in other words, enforcement). Instead, they spend most of their resources on the very distantly related task (see Chapter 5) of deciding which professionals may practice. One may, then, wonder, whether licensing qualifies as a program primarily justified on the principle of harm.

So far, *Don't ever lie* and *Don't do harm* looked promising but don't quite work for us as general ethical principles. We need to tweak them somehow or reach down to an even more basic level that will let us distinguish right from wrong dishonesty and right from wrong harm, and, ultimately, right from wrong action.

In an essay (Groffie, 1994), I said that an action is wrong when it requires the unwilling involvement of another individual, when it forcibly substitutes one person's judgment for another's.[19] That general statement of conduct, if I may be so bold, appears to work to

distinguish right from wrong dishonesty and to found a workable ethical system dealing with rights and obligations. Note how it allows us to distinguish good from bad lying and to see what is truly harm and what isn't. Someone bluffs (lies to us) in a game of liar's dice, yet we accept, indeed enjoy it, because we've voluntarily entered the game with the implicit expectation that this might be done to us and will promote enjoyment. Note also how the precept accounts for the wrongness of such varied things as murder, theft, rape, and fraud. Taking rape as an example and examining it more closely: we know why the English language contains the word *rape* in the first place, which is the word for the particular intimate act in which one of the individuals is unwilling. If not for this special condition of unwillingness, our language would only need to contain the term *sexual relations*. Under the precept I'm proposing, consensual sex is ethically neutral (permissible), whereas intimate relations involving the unwilling is ethically wrong, and it's unnecessary to draw on any religious or legal principles to see this.

The general statement of acceptable conduct I'm injecting into this discussion appears to adequately meet the criteria for a good (almost scientifically good) principle: It's elegant (simple), accounts for all particular instances (comprehensive), it's consistent, and it's useful.[20]

The general precept shows the wrongness of a failure to live up to each of the conditions in the first class of statements in the AEG code of ethics. For example, someone who fails to practice fiscal responsibility (Clause 2.2) with a second individual's money is forcibly substituting his judgment for the second individual's regarding the way the funds should be spent. Someone who betrays a confidence (Clause 2.3) is breaking an (often implicit) agreement to maintain some confidentiality and thus is involving the other party, unwillingly, in a relationship devoid of confidentiality. Someone who misrepresents his credentials and makes misleading claims of capabilities to a second party is involving the second party in a relationship with someone other than who he claims to be and, therefore, with someone he is unwilling to be involved with. And as a final example, a professional who accepts an assignment for which he is unqualified (Clause 2.6) is blindly leading, or in essence forcing, the consumer into a professional relationship with someone other than who he claims to be, in other words with an unqualified professional rather than with the expected qualified professional. This forcing is accomplished by the professional withholding crucial information the consumer would expect to have available in making a decision to hire. This appears to be the main ethical problem licensing purportedly addresses. In a very

limited way, it makes a certain amount of sense to say that practice by the unqualified is somehow wrong because someone could be harmed in the process. It's much clearer and more powerful to say that this process is wrong because this deceit is subsumed in a more general theory of what's unethical, i.e., that no one, including professionals, may forcibly substitute their judgment for that of another individual, including that of a consumer.

And just so we're clear before moving on, the judgment of an individual involves a few basic things: his or her life, body, freedom of movement and expression and interaction with others, and his or her possessions gained by exercising these freedoms and by yielding to all others exactly these same freedoms.[21]

Strangely, licensing itself violates the principle it's founded on. Here lies perhaps the greatest irony in the licensing debacle. Being the crude weapon it is, licensing goes much further than necessary in protecting consumers from negligent practice. It forces apart many consumers and professionals who would like to form professional relationships and makes it illegal for many professionals to offer their services for hire. It takes these judgments away from consumers and professionals and makes them the subject of administrative fiat. It makes consumers and professionals unwilling parties to decisions made by others. It treats adults as though they were children or the severely cognitively impaired.

Licensing is prior restraint; it's before-the-fact regulation. It presumes professionals to be unqualified and forces them to prove their innocence if they wish to practice their chosen vocation. This presumption of guilt is an insult and a crime in itself. It's as if all the hundreds of people residing within a three-city-block radius of a crime were hauled into court as guilty — simply because of their physical proximity to the crime — and were made to prove their innocence. The ethically permissible way to address practice by the unqualified is not to focus on people's qualifications at all but, instead, on actions and outcomes. If a professional gives advice riddled with errors and omissions that result in work below expectations, then make him compensate his victim, *after the fact*, after proving the case.

Criminal law has been built up over the centuries to prevent it from becoming self-contradictory in the manner of licensing. A suspected criminal isn't taken into custody unless there's enough suspicion. The accused is given a fair, speedy trial. He is appointed an attorney by the court if he can't afford one. He's given a right to appeal. He may not be tortured into confessing, and he's presumed

innocent until proven guilty (in the U.S.). Dozens of such safeguards are built into the criminal justice system to prevent, to the extent possible, an innocent man from having his freedom taken from him. These safeguards also prevent the system from becoming an injustice itself. If this system were to become unjust, it would cancel its own reason for being, which is to reduce injustice. Shouldn't all laws be held to this standard? Michael Bayles (1981, p. 128) raised this issue: "The significant question is whether applicants [for licenses] should be presumed to be likely to act in an ethical fashion, as average citizens are presumed not to have broken the law, or should they be [sic] required to present evidence of good moral character." It's incumbent on licensing supporters to explain how the laws they support don't need to have the same procedural restraints that are built into other laws.

A possible impediment preventing some people from seeing this problem in geological licensing is the very word *licensing* and the concept geological licensing seems to share with licensing of, say, automobile drivers. No one ever questions the licensing of drivers. In a crude sense the analogy seems to fit. However, the analogy quickly breaks down due to the fact that the driver's licensing authority is a sort of recognized legal agent of the *owner* of the road and therefore has a right to make requirements of drivers. Drivers carry licenses to gain the privilege of using the roads as part of an arrangement with the owners of the roads. (Who owns the roads? The city, county, and state, which hire the police, sheriffs, and state highway patrol, respectively: Get it?) In contrast, the professional licensing board doesn't legitimately own the professional, the consumer, nor their property.

I once went to court to fight a (lack of) seatbelt citation. I lost.[22] In the years that followed, I came to an accommodation with these events. Someone owns the roads that all of us drive on. I certainly don't. You don't. Interestingly, *we* don't either. One cannot point to any nebulous *we* that includes you or me that enjoys full ownership control of all the millions of miles of public roads around us. We could, however, single out that very distinct group of people that indeed does own the roads. They are the city or county or state (and their bureaucrats). They are (artificially) incorporated legal entities. And they, with their agents, the various local and state departments of law enforcement, prefer that all drivers wear seat belts. Highway patrol officers and local traffic cops would rather spend less time scraping bloody human carcasses from out of crashed vehicles and more time catching speeders and helping stranded motorists, and I can accept and respect that.

As a fall-back position, some will see licensing of professional engineers and geologists as removing a clear and imminent danger, like taking away the driver's license of a 92-year-old victim of dementia. However, it's rarely the case that professional licensing removes a clear and imminent danger. Licensing prevents innumerable professionals from practicing who have shown no inclination to do anyone harm or to practice poorly. Many people excluded from the profession are young and haven't been given time to show they are any threat. These people theoretically are prevented from ever practicing for the entire duration of their lives, if necessary, unless and until they pass that licensing exam.

Just to be clear on all things, let's review the argument used to reach this point. There are two branches to this argument, each consisting of a syllogism.

First syllogism, major premise: it is unethical to forcibly substitute one person's judgment for another's (there's that general ethical precept being advanced). Minor premise: the goal of licensing is to root out unethical behavior by professionals toward consumers. Conclusion: the goal of licensing is to root out behavior in which professionals forcibly substitute their judgment for that of consumers.

Second syllogism, major premise: to forcibly substitute one person's judgment for another's is unethical (there's that general ethical precept again). Minor premise: licensing is the forcible substitution of the licensing board's judgment for that of professionals and consumers. Conclusion: licensing is unethical, it violates the general ethical precept. This conclusion is disturbing.

In addition, we reach a distressing ultimate conclusion when the conclusion of the second syllogism — that licensing is unethical — is compared to the goal of licensing — reduction of unethical behavior. Licensing works at cross purposes to the given basis for its own existence. Licensing, then, collapses in on itself. It becomes a self-contradicting, self-swallowing system. It attacks the very thing it places value in, and thereby becomes self emptying, a pretty Victorian mansion crumbling inward due to faulty foundation construction. Licensing is a program at war with itself, much like the cast of mind of at least one (apocryphal?) American military officer in the Vietnam conflict who felt it necessary to "destroy the village in order to save it."

Several paragraphs back I said that the general ethical precept is comprehensive. Note how this precept covers (a) how charlatan behavior by geologists toward consumers is unethical and (b) how licensing of geologists is unethical behavior pointed at both geologists

and consumers. Licensing proponents have been unable, so far, to cite or develop any analogous or equivalent precept. They've been unable to extricate themselves from the muck of licensing, pull themselves up by their bootstraps, and develop an overarching principle that covers what's ethical and unethical among the various parties involved.

Licensing proponents have tried to gloss over this bootstrap problem and divert attention to a whole range of other trivial matters. To say that licensing shoots itself in the foot is the verbal equivalent of the scratching of fingernails on a blackboard to some of the Brahmins of the field of geology. Russel Slayback (1990, p. 29) dismissed any rights-based objections to licensing as "simply stubborn 'rugged individualism.'" Slayback gives no explanation and, ironically, leaves us to our own rugged, individual selves to interpret whatever he meant by *rugged individualism*. Perhaps he wants each of us to imagine ourselves as no more than some widower single-parent rancher living 3 miles outside of North Fork in the New Mexico territory in 1883 with just a specially modified rifle for protection. Perhaps Slayback (ironically) is just such an honorable, laconic, plow-pusher type and man of few words.

The system of civil liberties that Slayback so blithely brushed aside, however, doesn't necessarily strive toward this rugged end. A preferred term is *voluntarism* — it's ironic and alarming the ease with which licensing proponents shrug off the entire Anglophone social tradition that undergirds the free social and political climate they live, work, write, and flourish under. A tapeworm or other intestinal parasite may deny the existence of vision or hearing because it gets along without either. Its larger host organism, however functions well or better because it can see and hear and interact with the greater real world, well enough, even, to take measures to remove the parasite. Under voluntarism, anyone may voluntarily seek a rugged solitary existence or voluntarily join a sharing and caring socialistic commune, of which many have popped into (and out of) existence in U.S. history, or anything in between.[23] And, under voluntarism, if one voluntarily decides to hire an undocumented geologist, one may do so. Voluntarism (or *liberalism*, explained later) provides guidance for how we can live in harmony in a society, particularly as we crowd ever closer together, society becomes more complex, and technology offers us unimaginably complex choices in terms personal lifestyles and social interactions. Voluntarism is not in the least restricted in its application to just the wide open spaces of some Wild West frontier.

Some of Tepel's (1995) ideas appear to reply to the questions I posed (Groffie, 1994), the same ones discussed here. Tepel implied

that such critiques of the ethics of licensing amount to an "unsubstantiated personal declaration, perhaps a sort of Queen of Hearts fiat." I found myself puzzled. My so-called declaration comes with just a little bit of backing, is more than just personal, and has nothing to do with a certain Lewis Carroll storybook character and her favorite line, "chop off their heads." Ironically, licensing proponents are those who might like to sever some heads of households (professionals) from their means of livelihood and render them unable to provide for their families. In contrast, I'm trying to defend professional freedom.[24]

So, I'm not sure I fully understand the countercharge. It could mean any of several things. All of us are aware that little in philosophy is substantiated in that it can be directly tested by our five physiological senses. If this is what Tepel alluded to, then the countercharge contains little information. Perhaps he meant the precept in my 1994 essay wasn't explained at length, or wasn't explained to his satisfaction, or wasn't adequately substantiated. Tepel may be justified in his judgments (and, here, I'm only guessing).

Tepel, however, would have done well to supply us and his (Tepel, 1995) readers with more. If my (Groffie, 1994) precept wasn't explained to Tepel's satisfaction, his countercharge would be strengthened with an explanation of why not. Ironically, it's Tepel's declaration that remains unsubstantiated. A panel of jurists are fully within their right to render the two-word verdict *Not Proven* without embellishment, but it behooves an analyst writer to say just a little more.

Perhaps what was meant by "unsubstantiated" was that the precept I advanced (1994) was unreferenced or unannotated. This would be accurate, but there are valid reasons the statement wasn't referenced or annotated. It usually isn't appropriate to burden a mere essay in a news magazine (*AEG News*, in which the essay appeared) with many references. Nor is it necessary, since this sort of work isn't part of the formal academic literature. Still, the principal reason the statement wasn't footnoted is it expresses a commonsensical, old, and oft-stated idea that no one, to my knowledge, claims as their own. It is omnipresent and unreferenced in various forms throughout the works by philosophers who subscribe to liberalism in politics and ethics. I sense it in one form or another, for example, in works of Isaiah Berlin, Antony Flew, Tibor Machan, Joseph Raz, Will Kymlicka, Jan Narveson, Loren Lomasky, Douglas Den Uyl, Douglas Rasmussen, and the early Robert Nozick[25] (see, for example, these works: Berlin [1969], Machan [1989], and Nozick [1974][26]).

Reaching back a bit further, it is compatible with or paraphrases certain influential thinkers of the Enlightenment, mainly John Locke, Adam Smith, and Immanuel Kant. The liberalism many of these philosophers share goes under many labels including classical liberalism, Kantian liberalism, and revisionary liberalism. Such terms distinguish this strain of liberalism from its utilitarian variant, often connected with J.S. Mill in certain of his moods, and sometimes also from the very political, contentious, and contemporary use of the term *liberalism* (when speaking of, say, the late Ted Kennedy or Barack Obama). (See Sandel [1984], and Almond [1994] for good discussions of the transformations of liberalism.) Kantian liberalism spells out a framework wherein the right and the good in ethics are separate, with priority going to the right over the good. In this light, individuals are seen as their own ends rather than as a means to some end or as arbitrarily subordinate to government, church, patriarchy, or tradition. "In Kant's philosophy, the possession and exercise of strong private property rights is seen as an attribute of moral personality. Without the assured space of personal independence conferred on us by rights of possession, we cannot stamp our own personal signature on the world, as we can if we possess our holdings in full liberal ownership" (Gray, 1989, p. 157). These are a few of the core ideas of classical liberalism and liberalism in general. Many geologists might be surprised to learn how the ideas of so many dead men underlie many of our liveliest current political conflicts.

The concept of what is "right" in Kantian liberalism is deontologic, meaning it is nonconsequentialist: it isn't primarily concerned with outcomes or consequences. Rather, it's formal: it provides a form for recognizing and sorting ethical rules but isn't primarily concerned with the contents of such rules. Perhaps a good way to illustrate deontologic ethics is it's what one thinks when grumbling "It's the principle of the matter" when, say, one looks over a receipt and discovers one was overcharged a few dollars by a merchant and decides to drive back to the shopping mall and fight it. The consequences of being out of a few dollars are negligible. The desire to fight a violation of one's timeless rights is strong, and it may overshadow several other significant one-time consequences: the expenditures of time, nerves, fuel, and wear and tear on the car.

Wars have been fought over deontologic principles. By general consent, one of the earliest good foundations underlying deontologic, liberal human rights was provided by Locke (1632–1704) in 1690. One of Locke's (1960) main theses was that "every Man has a Property in his own Person" so that "the labour of his Body, and the Work

of his Hands are his," and therefore whatever "he removes out of the State that Nature has provided, and left it in, he hath mixed his Labour with ... and thereby makes it his Property." Locke's explanation of property rights and the role of government in securing them was seismic. His ideas enjoyed wide influence, notably with regard to certain principle actors in the American Revolution. His chain of reasoning — life, from this liberty, and from this possessions — made it whole or in part into two important American political and legal documents. An early draft of the Declaration of Independence by Thomas Jefferson contained the phrase "life, liberty, and property." The last word was changed to "the pursuit of happiness" to yield the now familiar phrasing. The wording "life, liberty, and property," nevertheless, went whole into the U.S. Constitution in its fifth and fourteenth amendments.

This was an idea powerful and axiomatic enough to send men onto battlefields. Why? Because it outlined what is meant by property rights. A woman goes out to the woods, crouches under an oak tree, and gathers acorns in a basket to make a meal; the acorns become her property because she has *mixed her labor with* them. By this act, the acorns become hers because her labor is hers, and her labor is hers because her body is hers. (Whether she might later barter her laboriously earned acorn mash in exchange for an earthenware bowl made by others in a small factory or for a deerskin is her decision.) This concept of property rights that I once presented (Groffie, 1994) matched Locke's ideas on the subject.[27] I tried to borrow from this concept of property rights to explain that licensing interferes with a consumer's and professional's rights to exchange their earnings and their labor, respectively, as they see fit. They legitimately own these things; a geological licensing board does not.

For a long while, a philosophical debate brewed between Kantian liberalism, with its deontologic focus on rights, and utilitarianism, with its teleologic focus on utility (typically, the greatest happiness for the greatest number). That debate has quieted down, with Kantian liberalism seen as having prevailed by general consent (Sandel, 1984). The fashionable debate to take its place in the last few decades or so has been between liberalism and communitarianism. Liberalism is often combined with or interchanged with universalism when placed in opposition to communitarianism. Universalism is the view that ethicopolitical norms are universal, that they transcend cultural and political boundaries. Its opposite, communitarianism, is the view that norms are based in and limited to communities defined by cultural and temporal boundaries, that we can but barely conceive of ourselves

as independent from our roles in a common life. Communitarian norms, in theory, are to be generated and tempered by programs of hermeneutics, rational discourse, or veils of ignorance. Although the term *communitarianism* is only a few decades old, the basis for it owes much to Aristotle and Hegel. (For good discussions, see Rasmussen [1990], Wellmer [1990], and Jeffrey Friedman [1994].)

What all this leads up to is this: most writings in favor of licensing of geologists appear to stem from a communitarian outlook or some other antiliberal outlook; call it, e.g., authoritarianism or technocracy. They seem to place great bearing on a community's right to pass laws restricting behavior of individuals, including contractual actions between consumers and professionals. They hold little regard for, and present little discussion of, individual rights, and what little there is in the context of administrative law, which is merely a political product of the community.

I feel that most major, long-standing ideas in ethicopolitical philosophy have at least a glimmer of merit or more and may be pieces of a puzzle. Communitarianism has its place in a framework of ethics and politics that also has room for universalism, contractarianism, natural law, utilitarianism, existentialism, civil law, intuitionism, emotivism, and common sense. But I think the place of communitarianism in this context is subordinate to universalism. Communitarianism, I feel, may have problems accommodating itself to spatial and temporal considerations. I've never seen a communitarian writer, in a publication (or anywhere, really), try to explain how a community numbering more than a few dozen or few hundred would (forcibly, no doubt) achieve an equitable distribution of love, friendship, caring, respect, and admiration, which are no doubt as critical to human flourishing as is monetary wealth.[28] I also see problems concerning knowledge and calculation, akin to the problem that economists of the Austrian school see in economic central planning (see Chapter 3). I think there are important aspects of human thinking and flourishing that don't have their sources in the community. Beginning with their earliest days and years after birth — this extends across all cultures, arctic to tropical — humans have a need to be loved and nurtured to develop properly and possess an innate ability to acquire language, grammar, and symbolic thinking with ease, in only a few years, just by listening, watching, and practicing. Sociobiologists have presented numerous possible associations between human behaviors and brain hardwiring that may date back to the Pleistocene or Pliocene Epochs (which gets the Marxist–Leninists and other communitarians tied up in fits).

It's quite possible for anyone to formulate an argument supporting licensing based on ethical grounds. We will probably never knock the question mark off the main question of ethics: How is one to live? Perhaps someone one day will give a justification for licensing of geologists citing principles of communitarian philosophy. There would be numerous respected sources to draw from. One good place to start might be with a bibliography by Michael Zilles (1990). Another might be with this passage by Paul Rosenberg (1994):

> [T]he long-term drift of social democracy is toward a ... society where needs are defined paternalistically by the state and not by individual choice. There are certain needs that are so vital to the possibility of individual freedom, of bodily and personal integrity, that their fulfillment should be not simply a right, but an inalienable right: individuals cannot be given the choice of neglecting these needs for the sake of some lesser purpose, as their future freedom is at stake. The paradigm for such a need is, of course, medical care. The industrial societies have taken a paternalistic attitude toward these needs since at least the late nineteenth century, as is shown by the practice of the monopoly licensing of the professions: individuals are not allowed the choice of going to a possibly unqualified doctor to save money.

Rosenberg (1994) gave only a glimpse at a communitarian justification for professional licensing. It appears in a paper that discusses more broadly the paternalistic control of lifestyles by the collective. Note that this path of collective action merges with that of Obamacare, an example of creeping socialism.[29] What would be especially welcome, and relevant to our debate, is some sort of spirited, well-developed, well-reasoned ethicopolitical justification for professional licensing.

Meanwhile, the history of the idea that all individuals possess a right to interact and contract with one another is rich. It has filled volumes. Assembled together, it could fully load several library stacks and render them creaky and vulnerable to collapse in a M_w=6.3 earthquake epicentered 17 km distant. A summary would quickly bog down this project. Adam Smith is usually thought of more in the context of economics. But he was also a notable 18th-century moral philosopher. In his seminal book of 1776, *The Wealth of Nations* (1937), Smith said that the guilds denied a person's property rights to their own labor, which he called "the original foundation of property" and the only inheritance of the poor. Sue Blevins (1995), in her survey of the literature concerning medical licensing, has seen numerous contempo-

rary legal and ethical philosophers argue convincingly that the right to property and contract are fundamental rights on which all other rights are based.[30] Jonathan Rose (1983) said that "respected scholars such as Friedrich Hayek, Milton Friedman, and Walter Gellhorn have effectively described the ways in which professional regulation infringes on" individual liberty, including economic freedom. Daniel Klein (1997) wrote

> Paternalistic encroachments work to demean the individual's existence. This is the most tragic consequence of paternalism. Although the demeaning of individuals is a very important human consequence, rarely is it even noted in policy debates over drugs, Social Security, *occupational licensing*, and similar issues. [emphasis added]

Alasdair MacIntyre (1984, p. 7) summarized one side taken in contemporary moral debate by saying

> Freedom thus requires not only the existence of private practice in medicine and private schools in education, but also the abolition of those restraints on private practice which are imposed by *licensing* and regulation by such bodies as universities, medical schools, the A.M.A. and the state. [emphasis added][31]

John Gray, though he has delivered one of the most formidable recent academic criticisms of liberalism (1989), gave his nod to (p. 148) "the import[ance] of different legal policies within the Lockean spectrum on a family of basic liberties, covering such areas as *occupational choice*, association, movement, conscience and so on" (emphasis added).

Chapter 4, which concerns constitutional problems with licensing, also contains a sampling of rights-based objections to licensing that Supreme Court justices have grappled with. It's time that the idea of occupational choice is given the attention it deserves. When the right to choose a line of work is given lower status than the right to welfare (as we call it here in the U.S., or *the dole* in other Anglophone nations), is it far-fetched to expect social dysfunction of immense magnitude?

When licensing proponents suggest, as some have, that the liberal opposition to licensing is eccentric, without any foundation they can discern, a fanciful misapplication of some philosophical approach, or easily dismissed as rugged individualism, then this suggests they know something. They imply that they have a grasp of some specific central

ethicopolitical concept allowing them to make such assertions. It would prove immensely interesting to observers if licensing advocates would share what it is they know and how they have come to know it. Absent this, when licensing proponents tell us that licensing laws are based on ethical considerations, what we see — like watching someone leaving a pub in an inebriated state — is the use of the lamppost of ethics for lateral support rather than for illumination.

Grandfathers, Rights, and Politics

Slayback (1990, p. 25) made the following observation: "Even the most ardent adherents of tough registration laws have been advised that a 'grandfather clause' is necessary when initiating registration, on the grounds that a state cannot deprive an established professional of his livelihood." Similarly, Tepel (1990), in the context of discussing grandfathers, said "No state has the right to capriciously restrict or remove the livelihood of a segment of the population."

A (rhetorical) question to ask in reply is, Why not? Which segments of the population? Under what circumstances can or cannot the state deprive someone of his or her livelihood?

The statements by the two writers are phrased as assertions based on some sort of ethical principle. Is it possible that Slayback, Tepel, or someone else had an ethical basis in mind when making these assertions? If so, what is this ethical basis? How is this basis, which protects established workers from state control of their livelihoods, different from a principle that protects *any and all* future and current professionals? The contexts in which the statements were found provide few clues. Slayback left us with a tantalizing, clever enigma in saying (1990, p. 25) "Opponents ... contend that geologists have a fundamental right to practice their profession, regardless of state lines or government interference," and then almost in the same breath went on to simply brush aside this fundamental right with a wave of a hand. How did Slayback and Tepel justify the first principle, grandfathers' rights, but not the second, all workers' rights? Did they rely on Douglas Moran (1983), who asserted that certain interpretations of the U.S. Constitution have held that grandfather clauses are required? (And where the heck is anything like that embedded in the constitution?) How does a principle that protects grandfathers in the name of "public health, safety, and welfare" escape the duty of placing *all* professionals, potential or established, under scrutiny?

The answers to these questions probably stem from two sources: (1) There might be a weakly perceived, unexplored, unexpressed

moral basis for protecting grandfathers. (2) There is the political reality. The weak ethical principle may have something to do with letting those already practicing continue.

But it's hard to discern what this something is. My best guess is that it's felt that the entering professional has more options available if the licensing exam thwarts him in his desire to practice geology. He has his whole life ahead of him. The seasoned grandfather doesn't. In a practical sense, this sentiment has some merit. Again, I could be wrong; it's only my best attempt to articulate what defenders of grandfathering on the prolicensing side have left unarticulated. Perhaps our "most ardent adherents of tough registration laws" have merely gone soft.

There's also an important political reality that licensing advocates have to contend with: Under grandfathering, existing practitioners don't have to risk being found inadequate by new exams and requirements, although the assumption is they are generally adequate practitioners. Licensing laws are difficult to enact unless the existing practitioners are given a guaranteed membership card in the guild. If they aren't automatically given their cards, they would wail so loudly that legislators might not be able to withstand the verbal onslaught. Conversely, if offered automatic cards, grandfathers will energetically coax legislators to enact licensing. Chapters 3, 5, and 6 contain further discussions of issues involved in grandfathering.

Less-Onerous Options

When one gathers together evidence against a program, in this case licensing of professionals, it's usually best to offer substitutes. There are ethical (or less-unethical) actions and outlets for the energies of energetic, concerned geologists. If we want to *actively* help consumers steer clear of underqualified professionals, the quacks and charlatans, there are ways to do it with less resort to government force. The word *actively* is used to mean actually doing something rather than letting courts or other entities or forces spontaneously spring up and do the job for us. For some people, *action* has enormous emotional appeal. (Chapter 3 discusses market alternatives, which require little concerted effort by geologists, and Chapter 6 discusses emotions.)

Well then, we belong to professional associations. These include the Association of Environmental and Engineering Geologists, AEG, whose mission includes promoting widespread understanding and acceptance of the field of engineering geology. This mission could be taken seriously. It could mean more than merely lobbying state legis-

lators to *force* this understanding and acceptance onto constituents or the public. AEG's mission, then, could take the form of community outreach and education. Association members could engage in a concerted effort to spread the message that geology is good and geology done well is even better. Members could speak in classrooms, make themselves available to the media, participate in radio talk shows, write blogs, create educational/advocacy websites and heavily advertise those blogs and websites, do Twitter and Facebook things, and write books for a general audience (and AEG could publish those books).

There is so much more elegance in reaching minds through reason than in levying fines on geologists and others who don't meet our standards. When one uses force, e.g., licensing, to do something like enforce professional standards, one reveals one's inability to rationally persuade people that it's in their interest to pursue high standards. One has given up on reason, on intellect. One has given up on communication and civility. Licensing is power first, persuasion later.

When one runs in a panic for licensing, one has abandoned much that distinguishes us as advanced and civilized, as a species or a society, and grasps for tools of last resort: hefty fines or the iron bars of a prison cell. Fines of at least $2,500 have been levied against individuals in my fine home state of California. I'm not aware that state administrators exercise an ability to garnish wages, take from bank accounts, change locks on a house, or have armed officers knock on an offender's door and take valuable personal property to satisfy a judgment. However, these state administrators do have the backstop of a 3-month prison sentence (Anonymous, 2011b).

Another possibility is a law requiring the professional to disclose all relevant information on the quality of his or her services. Such disclosure could include legal judgments against the practitioner, in the same way the seller of a house is legally required to disclose known material defects to the buyer. The practitioner could be required to show evidence of college diplomas, professional association memberships, and professional experience. One could argue with only a little stretching that these are steps practitioners perhaps are, or should be, obligated to do regardless. This wouldn't be radically different from job candidates providing honest resumes to prospective employers. Practitioners could be required to keep records that they have explicitly provided their clients with this information, which could consist of client signatures on copies of the information, again, rather like the way disclosures are handled in real-estate transactions

in many places. Stanley Gross (1977; 1980, p. 169–172) discussed just such a professional disclosure statement as an alternative to licensing.

Consider this: a legal requirement that practitioners take a comprehensive exam — as many times as desired as is currently the case — and tell the consumer their highest score. This way, a consumer would have the choice of hiring a lower-scoring professional, presumably for a simple job and at lower cost, instead of a bureaucrat setting some arbitrary threshold and forcing the two parties apart if some score threshold isn't met. Such a system would be the equivalent of the official-looking energy efficiency rating stickers you see on water heaters, refrigerators, furnaces, and dryers at Sears and the mileage ratings on cars at your local auto dealership. Object, if you wish, that refrigerators and cars are simply tangible consumer goods whereas a geologist is a professional providing services with public ramifications. I would counter that appliance and car-efficiency ratings are mandated so as to reduce a *public* dependence on foreign oil and thus reduce the need to put U.S. troops in harm's way in the Middle East, reduce smog emissions, and address global climate change.

There are numerous options for using government force far short of licensing that could still bypass or enhance market forces, if that's what is desired. One option is certification of professionals. Certification usually requires practitioners to pass an exam and fulfill other requirements before they may *call* themselves by certain titles, e.g., *geologist*, while all who desire may still practice a profession or provide certain services. According to S. David Young (1987, p. 94), "certification and other nonintrusive schemes have been shown to afford substantially the same protection to consumers as licensure, but without the cost or violation of basic freedoms." Milton Friedman (1962, p. 149) said "The usual arguments for licensure, and in particular the paternalistic arguments for licensure, are satisfied almost entirely by certification alone. If the argument is that we are too ignorant to judge good practitioners, all that is needed is to make the relevant information available. If, in full knowledge, we still want to go to someone who is not certified, that is our business." Friedman, by the way, was referring mainly to doctors. Gellhorn (1976) and Beales (1980) agreed that certification is a workable alternative to licensing.

Gellhorn (1976) also expressed approval for registration. The registration envisioned was of the form where any professional could register without having to pass any exam, experience requirement, or the like, but his or her registration could be removed along with the

right to practice, after the practitioner had shown some form of wrongdoing.

Still another option is to enforce standards on the reports and other work that geologists perform. This would be closer to an outcomes-based policy rather than a restriction on human inputs. I've heard, even from licensing supporters, that the record of licensing is not impressive in view of the low quality of some reports that are nevertheless produced by *licensed* geologists.

I judge the report-standards option a step in the right direction (away from licensing). Reviewers at the local or state level get to judge whether report writers have employed best practices and have hewed to a local standard of care in exercising their duties. All this is still a tiny bit distasteful, as it still has little to do with the critical outcome, namely the actual performance of the geologic information. If an infrastructure project and its geologic input survive for at least 10 years without incident, then a statute of limitations (which may vary from state to state) has expired and its designers can be judged blameless, to some extent, in tort law. If a reviewer is able to divine how the work under his review will play out within this statute of limitations or better yet some 30 or 100 years out, then he or she is one commendable reviewer. However, a reviewer has only a secondary obligation to judge how a report and its project will perform way out to such a time horizon. A reviewer wields significant power but need primarily judge only whether a standard of care has been exercised and whether a set of best practices has been employed. In any case, and this is important: work by reviewers doesn't regulate human input to geologic work. Review of reports avoids any *ad hominem* evaluation. It focuses, instead, only on the adequacy of the documentation presented, whether that document happens to be two or 2,000 pages in length. At least that should be the case, if the reviewer is acting honorably, and I believe it is in nearly all cases.

Some of the foregoing measures would still impose constraints on professionals (perhaps healthy, appropriate ones), but the burdens would be much less onerous, and more noble, than licensing. And consumers could ultimately have full choice in who to hire. Don't these options provide almost everything licensing seeks to achieve? If so, then why has licensing been instituted in some thirty U.S. states while these alternatives continually get shortchanged? Chapters 3, 5, and 6 provide possible answers to this question.

The Words We Use: "Professional," "Public," and "Stakeholder"

The words we use and the way we use them in discussing licensing can be important to people's understanding of the issue. The words *professional*, *public*, and *stakeholder* are three words that name concepts important to building the case for licensing yet seem to be used carelessly. These concepts and terms are problematic in terms of digitization, mesmerization and reification.

The justification for licensing has centered on making a distinction between professions and ordinary occupations. It has been pointed out many times that a professional is distinguished by having learned a trade through advanced study, and he or she practices a trade that is primarily mental rather than physical. Yet how advanced is advanced, and what ratio of mental to physical is required before the term *professional* can be applied? The problem is that licensing advocates would have us believe there is a conceptual chasm between a profession and an ordinary occupation. Yet there is no such chasm. Rather, there's a continuum along which all occupations lie, including the professions. This is the continuum model sociologists use to look at the workforce. Licensing is the unnecessary forcing of binary thinking — on-off, yes no — onto a concept, professionalism, that is quite fuzzy. Proponents of licensing of geologists seem to be acting as Young (1987) would have predicted: trying to make professionalism somehow conceptually apart from other occupations.

I should avoid stretching this to a twilight argument.[32] But it's worth pondering a few questions: At what point along the continuum are we justified in isolating the professions from the other trades? How are we to decide on this artificial cutoff? What useful purpose does it serve to try to make such decisions? Isn't there something odd about basing licensing — ostensibly based on solid, cut-and-dried principles — on the idea of professionalism, a blurry concept that can be applied only by resorting to convention? Can't we expect ugly results when such distinctions are left to legislators and lobbyists to make?

The need to make such a distinction has been based on the notion that "the professional has a fundamental ethical duty to be 'reasonable' in dealing with the public, whereas the non-professional is under no such obligation" (Hoose and Tepel, 1990). This assertion shows its problems as we probe its meanings and bases. Is it based on a *legal* obligation, as suggested by language used by Tepel (1990, p. 3)? If so, it tells us little about true ethical obligations, due to the tenuous connection between law and ethics (discussed later in this chapter). If

it's not based on legalities, then it seems to stem from a concept of a distinctness of professional ethics that is peculiar indeed. It seems inescapable that all workers, whether engaged in activities requiring much formal education or little, have an ethical obligation to deal reasonably and honestly with their clients or customers. It seems imperative that the farmer sell only fruit grown with the proper (safer) pesticides and in the proper concentrations, that the plumber put his best efforts into aligning, tightening, and anchoring pipes that will be hidden in walls and crawl spaces, that the carpenter cull the warped and split boards from his supplies for house frames, that the well driller not tack inflated charges for travel and refueling on his time-card.[33]

It seems the assertion made by licensing advocates is trying to tap into the idea of hidden work. With almost any task a worker does there is some fraction of work that the consumer can observe and a remainder that the consumer has difficulty observing.[34] With manual tasks, most of the work is visible. For example, a painter paints your house; you're able to see spills, runs, sags, and places that have been missed (so-called holidays). On the other hand, you probably won't be able to tell just by looking whether the painter filled his cans with the proper grade of materials for the application or with the top-grade paint you specified; this is hidden. When you buy a car, you can't tell if the machinists milled the bearings or valve seats to their ± 0.0001-mm specifications or if the $12-an-hour assembly-line worker torqued the engine-mount bolts to exactly 37 Nm. The worker doesn't make an effort to hide this work. The work exists, it's tangible. You could possibly examine all this work that's been performed for your benefit if you went to great lengths to do so. But for practical purposes, we can call the work hidden.

In moving up the continuum from manual work to more professional work, more of the work is hidden from the consumer. This is because more of the work takes place inside the worker's mind, out of practical reach of the consumer's observation. This, I think, may be the key element of the perceived "special" relationship between the professional and consumer.[35] When licensing proponents say that the professional has a special obligation that the nonprofessional doesn't have, this apparently refers to the obligation to deal honestly regarding the hidden work, to perform this work according to the consumer's expressed or implied expectations.

But in nearly all work there is hidden work. In professional work, there is simply a *greater percentage* of hidden work. Therefore, professionals have no special obligation. Professionals simply have an obli-

gation that must be observed in (many) more instances during their work day. The ethical distinction is merely incremental, it's one of quantity rather than any conceptual leap. And these quantities lie along a continuum, with different types of work involving varying amounts of hidden work and its obligations; it's not evident there's any natural break in this continuum, with doctors and geologists, the lofty learned professions, clustered at one end and all other occupations, like lemonade-stand operators, day-care providers, and dog walkers huddling at the other — pardon me, I spoke too soon, if you're a dog walker, you might need to be licensed now. Occupations lying along the middle of the continuum might include nurses, teachers, and auto mechanics. No rational way has been shown to choose an arbitrary point along this continuum where a special distinction could be made between the professionals on one side and ordinary occupations on the other. And no convincing need has been shown for applying licensing to the supposedly special workers on one side but not those on the other.[36]

Problems with the concept of *the public* form another of the large voids in the underpinnings of professional licensing. Licensing proponents tend to place heavy weight on "that one fundamental reason that justifies professional registration for geologists: that the practice of geology impacts the public health, safety, and welfare, and therefore the public has a right to regulate the practice" (Tepel 1995, p. 35). The term *public* or *publicly* was used roughly eighty times by Tepel in his 1990 work, thirty-two times by Gregory Hempen (1990), twenty-eight times by Slayback (1990), nine times by Herbert Koogle (1990), eighteen times by James Williams (1990), forty-seven times by Christopher Mathewson (1990), twenty times by John Philley et al. (1990), twenty-one times by Frank Kresse and Carol Serlin (1990), and numerous times by Tepel in his 1995 work. Related terms like *society*, *community*, and *populace* probably appear in those works also.

Much energy has been expended making these ideas part of the rationale for licensing. In doing so, licensing proponents appear to be shifting the territory they defend, giving up ground in one area and taking up position in another. At one time licensing was promoted (along with consumer benefits) as a way for the licensed geologist to publicly demonstrate professional status, acquire stature equal to engineers, gain equal legal footing in the courtroom, and earn higher incomes. More recently, most licensing proponents have seen that licensing needs to be pitched in a different way to state legislatures, governors, and bureaucrats than to the professionals to be licensed. (Oddly, licensing is rarely, if ever, directly pitched to consumers, at

least not in any instances I know of.) Therefore, the emphasis has shifted to extolling its "public" protections. To be exact, "public health, safety, and welfare" are to be paramount. But in making this move, licensing proponents outfit their vessel with a leaky plank.

Buddhists, semanticists, and hypnotists know that we not only use words but are also easily mesmerized by them. Licensing proponents repeat the phrase "public health, safety, and welfare" with catechismic fervor in order to elevate it to such a high priority that no argument need be made for it. The effect, perhaps the intent even, of this overworking one pedal on the organ may be to prevent the listener from thinking, to invert reality.

Leaning heavily on such a cliché, like a crutch, is to use it and enhance it as a glittering generality. Those who study propaganda apply the term *glittering generality* to a verbal term that seeks to make the reader accepting and approving without having examined enough evidence. It lowers our sales resistance. It's somewhat like an *ad hominem* attack in reverse. Words like *civilization*, *country*, *nation*, *good*, *proper*, *democracy*, *patriotism*, *motherhood*, *motherland, fatherland, science*, and *health* are often used as or in glittering generalities. One can recognize a misuse of such terms when we get affirmative answers to questions such as these: Does the idea being considered fail to match with the normal accepted meaning of the glittering term? Is the proposal one that might not serve a good purpose yet is being sold to the reader merely by giving it an appealing name? Leaving the term in question out of consideration, does the proposal have real merits of its own?

It appears that the term *public* and the phrase "public health, safety, and welfare" are being misused in this way. Consider for yourself, think, whether the term *public* can easily be left out of discussions of licensing without losing any clarity or changing any meanings. Consider whether or not the term *consumer(s)* can be substituted in its place. Licensing is really about the consumption of geologic services. Usually, generally, geologic services involve a geologist and a consumer. In some instances, external parties become involved, as discussed in Chapter 3. But, by and large, for all practical purposes, most given instances of geologic practice have little effect on any large number of people beyond the immediate parties.

The notion that it does is typified by the following statement by Hempen (1990, p. 16): "Surely the universal concerns of groundwater and hazardous/toxic wastes affect the life expectancy and pocket books of nearly every U.S. citizen. Therefore, the practice of geology should be controlled in every state by licensure." There are compound errors in this thinking. First, the concerns of groundwater and toxic

waste have been confused with any given *instance* of geologic practice. In truth, only *some* instances of geologic practice involve groundwater or toxic waste. Furthermore, only in some given instances of geologic practice involving groundwater or toxic waste will the negligent actions of a geologist lead to toxins getting out of control to affect third parties. (And furthermore, there are strong forces besides licensing keeping the quality of geologic services high, as discussed in Chapter 3, and only in *some* cases of geologic negligence will injured third parties not receive compensation as enforced by the justice system.) Furthermore, a sizeable fraction of U.S. citizens don't get their water from the ground and never get near toxic waste anyway. Therefore, it's a fantastic leap to say that practice in groundwater and toxic waste are universal concerns affecting almost *everyone's* lives and pocketbooks, and it is unjustified to require all geologists to be licensed on this basis.

Granted, in viewing the issue in a peculiar way, one could see an isolated instance of negligence affecting the pocketbooks of nearly every U.S. citizen. This would be because about every economic action by any individual has effects that ripple outward. My slipping a quarter in a gumball machine has a joyous effect on the individual who collects the money out of the machine periodically, and this joy radiates outward to the individual's family, landlord, etc. My gumball transaction also has a small effect on the worldwide price of sugar, with who knows what further effects on global commodity markets, and before you know it, Janet Yellen is raising interest rates. This is essentially the popularized idea of complexity theorists that the flapping of a butterfly's wings in South America can cause a hurricane in North America a week later. I don't mean to belittle this idea, which, theoretically, has merit. I just want to put it in perspective. A geologist who wastes labor and other resources through his negligence does make several other people slightly poorer. But historically it's been proven a vulgarity to stretch this argument to justify government regulation of sugar, gumballs, geologists, and everything else of economic value. Again, substituting the idea of consumers for the public remedies this situation handily.

An even more insidiously glittery aspect of the term *public* is when it's used to the utmost: to conjure up the idea of society, of a population or community as a whole. In this sense, it becomes a highly mushy concept involving unwarranted reification. Reification is when we regard something abstract as something concrete. This seems to be behind most uses of the term *public* in writings favoring geological licensing. The collective, i.e., a great number of people taken as a

whole, is thought of as a corporeal body with a psyche of its own. We're led to believe that geologic practice affects "the health, safety, and welfare of the public." And yet, a collective is not a physical entity. It has no body. It has no psyche. It cannot think. Individuals can think, but a collective cannot.

Consider the San Francisco 49ers offense executing one of their trickiest passing plays. Does the team think? Perhaps in a primitive sense it does: among the players there are verbal and nonverbal communication, coordination, planning, and purposive behavior. Yet all that is dwarfed by the thinking going on in the mind of each player. Consider the amount of communication, coordination, and planning taking place among neurons in the brain of a 49ers receiver when completing a pass for a touchdown. The human mind, represented by the brain of any one of the players, is the most complex structure (if not, then the most wondrous yet compact, pound for pound) in the known universe. It is strange, then, to think of the collective as anywhere in the same league as a normal individual in terms of being a thinking, living entity.

That sort of misguided thinking is often put to use in exalting public welfare over individual welfare. A slogan employed by the Nationalist Socialists was *Gemeinnutz vor Eigennutze*, meaning "The common good before self." Rather than commit ourselves to such an ideal, we should remember that individual welfare is what we probably wish to maximize, at least if we subscribe to the Kantian view that individuals are ends in themselves rather than a means to some end such as general welfare. What purpose would it serve to focus on collective welfare without giving ultimate consideration to individual welfare? Much of humanity, notwithstanding the grand social (and medical) experiments of the 20th century, isn't quite yet ready to relegate itself to the level of an ant hive, with its nonthinking, monogenetic workers and drones. I think some licensing proponents probably understand this, and I don't think they're quite ready to crucify individual welfare on the twisted cross of public welfare. But it does seem they're quick to disdain individual rights and to cloak the issue with an inky cloud of homages to an almost corporeal "public."

On a very basic level, what is this collective for whom licensing proponents speak? Where is it? Who does it consist of? Can we point to this supposedly concrete thing we call by various names, such as the public, community, or society? It would appear difficult. Every second around the world, about four humans are born into the human collective and two leave it. And the living constantly move from place to place. Occasionally, a few leave the globe and enter

orbit around it for a time. Twenty-seven have even left Earth's gravity for a few days and traveled to the moon. Colonies may one day be set up on Mars (will they revolt and declare independence, as Americans did from the English?).[37] Evolution in the Darwinian sense is undoubtedly occurring in the human population, albeit slowly, making it ever slightly more difficult to describe the makeup of human society.

If we give up on global ideas of "society" and wish to narrow our search, we might, as is often done, look for help from political or cultural boundaries. However, political boundaries, which we like to use to grasp the idea of the collective, are mere artificial lines that were produced by surveyors years or centuries ago. They're called city limits, county and state lines, and national borders. Do such things really have any important philosophical meaning? Are we willing to toy with peoples' rights and lives on the basis of imaginary lines stretching across wilderness to the horizon and beyond, surveyed in ancient times using primitive tools? Political boundaries are often in dispute, are being fought over in many places, and occasionally shift through annexations, splits, and other legal wrangling. Cultural and ethnic boundaries are even more useless in these fast-paced, mobile, globalized times.

Yet licensing is based on the idea that a "public" within imaginary political boundaries is protecting "itself" by passing a licensing law. It should be clear by now that there is no "public" that one could point to corresponding to the people found within the boundaries of a U.S. state or any political jurisdiction, nor do the people found within such boundaries correspond to those passing a licensing law, nor do all the people within such boundaries even remotely correspond to those few who could be adversely affected by substandard geologic practice. (These are important weaknesses I see in communitarianism as a political philosophy when contrasted with universalism.) We can avoid such conceptual errors simply by focusing on the idea of consumers rather than the public and by using the former term in place of the latter. The public, the political collective, is only an arbitrary, infinitely elastic mental construct conjured up and idolized for political convenience, and thus makes a sloppy tool for doing philosophy or sociology.[38]

Stakeholder is another problematic word that stealthily crept into usage in the 1990s, and it has entered discussions of geological licensing. It gets used to describe someone who has a stake in a decision (e.g., Tepel, 1995, p. iv–vi). The problem lies in the first syllable, *stake*, and in what we think this stake entitles the holder to do in influencing a decision. The problem crops up when we think that if a decision

affects us, then we have a rightful say in the decision. For example, if the owners of a factory that employs a large number of workers in an area are thinking about moving the factory elsewhere, someone might describe everyone in the area as the stakeholders in that decision. But this would be taking decision-making out of the hands of the property owners (the *stock*holders — curious how changing a few letters makes a radical difference) and putting it into the hands of a "public."

The term *stakeholder*, then, becomes a vehicle to smuggle the concept of the proletariat from the lexicon of the Left into common usage. May Day worker rallies, pinups of Emma Goldman, Soviet expansionism, and other vestiges of the 20th century's fascination with socialism (including Progressivism [U.S.] and Nationalist Socialism and fascism in general [Europe], all variations of the same mindset) may be becoming faded memories. Yet socialism survives in constantly shifting shapes. All pay tribute to that great master, a more powerful government. Jonathan Wolff (1991, p. 129), though sympathetic to socialism,[39] gave this prelusion to the mistakenness of stakeholderism:

> Under capitalism, Marx wrote, people become "the playthings of alien forces." ... [One]'s future may depend upon what a fashion magazine decides is "this year's thing," placing those who sewed last year's thing out of work. But this objection, it appears, presupposes that people do have a right to a say in decisions that affect them, and, certainly as a general principle, this seems false.... [E]ven conceiving of a scheme which really did grant people a worthwhile say over all important matters which affect them poses great difficulties.

Again, the substitute for a mantra-like repetition of the term *stakeholder* is to focus on the idea of the consumer and their landowning neighbors and to expend the necessary analytical effort to discern the proper relationships between the parties involved and their rights in the realm of professional services. It may seem harsh to allow factory owners to move their factories[40] or to leave consumers and geologists without government "help" in selecting each other, but far greater harshness and cruelty transpire when individual ownership rights and other human rights aren't honored.

The Leap From Is to Ought

The is–ought fallacy is a sort of *non sequitur* that has appeared in the licensing debate. A *non sequitur* generally leaves (or should leave) the reader scratching his or her head, slowly rereading and rereading a passage trying to understand how the writer got from point A to point B.

Scottish philosopher David Hume (1711–1776) is generally credited with first pointing out the distinction between is and ought and labeling it a fallacy to conflate the two. This distinction and the disdain for the conflation are often called Hume's law. This mistake isn't as serious and obvious as an error in logical deduction. It's more of an unwarranted inductive leap: the mistake of deriving ought from is. It's a mistake made unconsciously. As Bernard Williams (1985) defines it, it's the attempt to define any evaluative term using nonevaluative language, or according to Richard Norman (1983), it's deriving values from facts.

Ought is an evaluative term. By *ought* we mean what an individual ought to do, and evaluating what an individual ought to do falls within the purview of ethics. By *is* we mean, simply, anything that is, that can be described without making ethical judgments. The sky is blue. Gravity pulls all objects toward the center of the Earth. People eat a lot of sweet, greasy food such as donuts.

The is–ought fallacy crops up when we say that lots of people eat lots of donuts (and they sure taste good), so, therefore, by golly, people ought to eat donuts. Obviously, the *therefore* isn't necessarily justified. There might be good reasons not to eat donuts, or not to eat more than a few per week. The eaters might have clogged arteries or diabetes or be carrying an excess 80 pounds of flab on their frames.

It appears that much of the basis for licensing is built on this kind of unwarranted leap from fact to judgment. For example, an essay (Tepel, 1995) begins with the following paragraph and concludes with roughly the same statement:

> Some geologists will assert that professional licensure is any or all of (a) unethical, (b) unconstitutional, (c) unprofessional. The successful existence of professional licensure for many professions, including geology, suggests that these arguments are largely inconsequential" (Tepel, 1995, p. 39).

To summarize the relevant parts of the quote: because licensing successfully exists, the argument that licensing is unethical is incorrect. And finally distilling to its essence: licensing exists, therefore licensing is good. *Ought* baldly gets derived from *is*.

The unfounded leap from is to ought would be easy to forgive if there were accompanying attempts to justify licensing on ethical grounds. Oddly, there aren't. Surfing the prolicensing literature, we encounter interminable download times obtaining any robust defense of licensing of geologists on grounds of ethics.

Ethics and Holding a License

Some attempts to defend geological licensing on ethical grounds stumble due to another fundamental confusion. The error involves moving the issue toward an unrelated question where there's no disagreement. The question is this: Is it unethical for a practitioner to *be* licensed? The answer, in a word, is no. A practitioner steps on no one's rights by obtaining a license to practice for himself or herself. Fox (1995) agrees: "If you feel that registration is necessary in order to be allowed by others to practice your profession, then, by all means, get registered."

I am licensed, and I've never observed nor said how a practitioner commits an unethical act by being licensed.[41] However, a practitioner might feel justified in thinking her rights were violated by her *being forced* to obtain a license by state law.

If proponents of geologic licensing have shown confusion on this point, it probably arises out of a failure to see the proper relationships between the parties involved. There aren't just two parties or moral actors involved, but three. In addition to (1) the geologist and (2) the consumer, there is (3) the state. In fact, the third party, the state, is the defining element in licensing. Licensing is the state restricting something to those who have been granted a license by passing some test or inspection. It's an action by state officials rather than by professionals or consumers (in one sense professionals are involved too: see Chapters 3 and 5; and consumers don't seem to show much interest or involvement: see Chapter 6).

It seems, though, that by not seeing the role of the state and focusing only on the two other parties, the geologist and the consumer, one could arrive at a wrong conclusion, as follows:

> I am unaware of any geological or other design profession's code of ethics that classifies professional licensure as unethical. A perusal of some of the major codes of ethics found in Gorlin (1994) indicates that none of them contain outright statements to the effect that the association believes that professional licensure is unethical. Goldman (1992) writes briefly on professional ethics

> and does not raise the issue of licensure. ... Surely, if there were any widespread support for the proposition that professional licensure is unethical, by now many, many professional associations would have said exactly that in their codes of ethics, if not elsewhere [Tepel, 1995, p. 20].

The statements and studies of professional ethics referred to above were developed in the context of proper conduct *by professionals toward consumers*. And yes, context is important. Such conduct is completely off the subject of the *state's* conduct toward the professional or consumer. And licensing is state conduct toward the two other parties. The quoted writer's error is the fallacy of relevance.[42]

It would be *absurd* for AEG, if we include AEG in these "many, many professional associations" with a "code of ethics," to declare licensing unethical. AEG explicitly supports licensing. Its official policies include an entire, discrete policy statement on the subject (Anonymous, 2006c), which clearly tells us this:

> The Association of Environmental and Engineering Geologists establishes this policy to promote the licensing of Engineering Geologists in each state by appropriate registration laws which rely on experience and examination. Where no laws currently exist, an active program shall be implemented to formulate the highest level of licensure for Engineering Geologists.

And AEG's vision statement includes this: "AEG leads the profession in its advocacy for … professional licensure …" (Anonymous, 2006b). And, of course, AEG presents its members with its code of ethics (Anonymous, 2006a), and, of course, that code of ethics contains no statement to the effect that licensing is unethical. Consequently, I feel embarrassed for licensing proponents as they hunt for a clue that licensing is unethical in AEG's policies or code of ethics — a biased source for such information — or in similar codes of ethics of similar organizations. Such statements would be completely out of place. See Chapters 5 and 6 for additional reasons why this situation exists. So of course consulting the limited sources cited above turns up no ethical or political objection to licensing. The idea of proper context and doing a proper literature search among the correct library stacks seems to have been invisible in the laboratory of Tepel's mind.

The same writer commits a similar error later in his essay: "[A]ssertions that professional licensure is unethical ... are not made by consumer advocates, economists, sociologists, and their ilk who

oppose professional licensure" (Tepel, 1995, p. 22). Why consumers and their advocates don't is a topic addressed in Chapter 6. The reason why economists, sociologists, "and their ilk" tend to devote scarce print space to the question of whether professional licensing is ethical is that professional licensing and ethics in general aren't immediately relevant to these specialized subjects. Rather, ethics is a branch of philosophy. Certain of your (our?) leaders have led us astray.

Regardless of any misdirection, philosophers and economists have indeed questioned the ethics of licensing, including Friedrich Hayek and Walter Gellhorn (according to Jonathan Rose, 1983), Michael Bayles, Bernard Gert, Adam Smith, Milton Friedman, Karl Marx, Jean-Jacques Rousseau,[43] Denis Diderot (see Pannabecker, 1996), and others (see Blevins, 1995). In Chapter 4, we'll note what U.S. Supreme Court Justices Black and Douglas said about licensing. (Now I'm myself verging on digressing into irrelevant areas.)

Let's return to the topic at hand, the ethics of individuals *being licensed*, and examine yet another misstep in the recent literature:

> It would seem that members of professional associations having a strong code of ethics face a moral dilemma if, on the one hand, they subscribe to the code of ethics of the organization (and thus affirm their professional duty to the public health, safety, and welfare), and on the other hand (when they want to argue that they should not be subject to professional licensure) they deny that their practice, or the practice of their cohorts, has any impact on the public health, safety, and welfare, or is subject to the public interest [Tepel, 1995, p. 16].

To subscribe to a code of ethics — e.g., the AEG code — means that the professional will give the consumer the high quality of geologic services he or she may expect. Again, there are only two parties involved at this point. With licensing, a third party intrudes into this relationship. It would be perfectly acceptable for a third party to merely act as an observer — perhaps even hired by the consumer — and point out as or after events unfold that the professional is or was performing shoddy work. But, then, this would not be licensing. In licensing, the members of the licensing board decide whether the relationship between the two parties may even take place.

Take a glance at Figure 1. There are three parties involved. I would argue that this graphic shows the main relationships that exist and have always existed with licensing present. Yet licensing proponents

seem to either (1) have difficulty grasping this three-way arrangement or (2) don't want to deal with this concept.[44]

Yes, numerous other parties and forces are involved in seeing that consumers and other potential victims of geologists are protected. See Appendix A for a full-blown diagram of their various relationships. Professional associations can even play a part.

Yet, professionals may deal nobly with the consumer and at the same time logically, honorably, and easily object to forcible third-party intrusion by the licensing board. Tepel (1995) refers to this as some sort of moral dilemma. Yet no one has shown that the professional is in any moral dilemma about providing the consumer with services he or she will be satisfied with. There isn't even anything

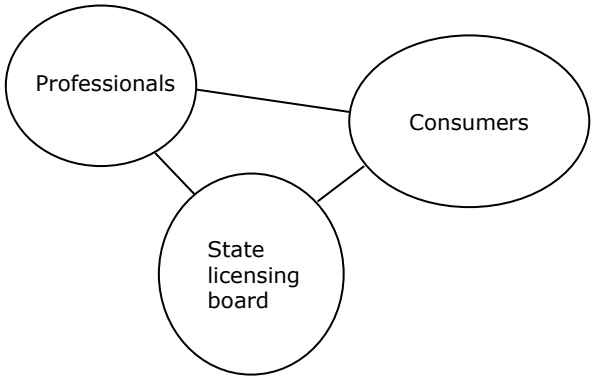

Figure 1. Three distinct parties are involved in the discussion of ethics in licensing.

inconsistent or contradictory about between behaving ethically toward consumers and rejecting licensing. The presence of a third party, the licensing board, isn't necessary for the two original parties, the professional and the consumer, to achieve their expectations.

Law vs. Professional Ethics

This discussion repeats some powerful points brought up by Fred Fox. Fox wrote to an audience of geologists in articles written in 1990 and 1995 and in a letter published in 1992. Fox (1992) effectively dissolved what others perceived as a paradox by saying, "professionals do not require government to implement their professional standards. Bob [Tepel] ... develops his line of reasoning to state that being a

member of a professional association means that the individual accepts in principle that the practice of one's profession is subject to the public interest. This conclusion (and the rest of his argument) is founded on quicksand ..."

This is closely tied to Fox's recognition of a crucial point regarding licensing, that law and professional ethics are two unrelated things. Licensing of geologists is a legal construct, whereas professional ethics is a philosophical concept. Fox (1995) said

> We can resolve the ethical paradox of registration if we admit that registration is a legal notion founded not on ethical principles but in power and control. Laws not founded in ethical principles will collapse in the face of truth. ... While registration must be defined by law, the stuff of ethics can't be. Like it or not, ethics stands before the law.

Fox may have taken his cue from Kant (1977, p. 469 [1795]), who wrote two centuries earlier,

> True politics cannot take a single step without first paying homage to morals, and while politics by itself is a difficult art, its combination with morals is no art at all; for morals cuts the Gordian knot which politics cannot solve as soon as the two are in conflict. The (natural) right of men must be held sacred, regardless of how much sacrifice is required of the powers that be. It is impossible to figure out a middle road, such as pragmatically conditional right, between right and utility. All politics must bend its knee before the (natural) rights of men...

The fact that politics and rights are unrelated is so basic and old that it shouldn't need to be expressed. Still, enough people confuse the two that there is the occasional need to puncture modern discourse with old truths. Harry Walter Moss Sr. (1996) was a California attorney who felt the need to explain this in a letter to his bar association on the subject of judges:

> I think the main problem most people have is a failure to make the distinction between law and justice. The distinction should not be lost, or mistakenly seen as quibbling over mere semantics. Law, after all, is merely a bunch of rules written by the legislature. Justice is based on the relationship between people, and is certainly not just a bunch of rules. Anyone who cannot make this distinction should not be sitting on the bench. Weimar Germany

> had many fine judges who were devoted to the enforcement of the law. When Hitler took over, they continued to enforce the law without observing that it had become unjust. The horrors of the Nazi state became legal, enforced by those very same fine German judges.

The fact that the legislature can enact any law it likes but it cannot conjure up truths or ethical principles in doing so also asserts itself early in the discussion of licensing and constitutional law in Chapter 4.

Fox (1995) went on to explain that geological licensing is severely flawed law because it stems from a misdirected desire for power and control. The error is to direct these desires in the direction of other practitioners. Instead, it should be directed inward:

> If you think you need the control — the power — to keep the charlatan out, then raise the standard from within. Put principle — truth, virtue, character, excellence, all those good things — first and refuse to succumb to the dictates of those who are not ethical. If you need a support group, make it a good one. A geologic community of truly ethical professionals can do more to raise professional standards from within, promote professional development and police itself than can any amount of law. Quality assurance is built into the system (quality comes directly from ethics). But don't empower the charlatan and, certainly, don't be one.
>
> Simply choose truth and honesty and you'll be on the right track. What you do must be founded in principle, not privilege, and you can do this individually, without registration law. You can preempt registration simply by avoiding it.

I agree that there's much to be gained by everyone directing one's energies inward, toward self improvement; we gain still more by collaborating with other like-minded individuals. Nevertheless, there are some very energetic people who will often have some energy left over from ordering their own affairs and will wish to direct it toward improving the behavior of others. They have the right to express their views, and we can applaud their energy.

But we sometimes question their grasp of basics. The dictates of etiquette and ethics require that people concern themselves with their neighbors' affairs with an eye to certain norms of proper behavior. Like a bull in a china shop, licensing ignores these norms.

Utilitarianism

In the final analysis, I'm afraid a purely deontologic criticism of licensing won't gain favor among many people. I think what I'm up against is the ultimate fall-back position of the licensing proponents: that government action might be mildly unethical, but that it's all right as long as (1) it's a last resort and (2) might even result in an *overall* reduction in unethical or undesirable activity. Most people see this as the ultimate justification for essentially all government actions. When the focus is on that last part (#2, above), an overall reduction in something undesirable, we see the emergence of a utilitarian position. The ends justify the means.

Utilitarianism is a respected ethical system with a long, illustrious pedigree. Many keen thinkers over a long span of human history have held to that theory. One of its biggest proponents, John Stuart Mill (1806–1873), was one of the most brilliant individuals of his time.[45]

Bernard Gert (1982) gave a noteworthy discussion of professional licensing and utilitarianism. He said "Since requiring licensing violates the moral rule against depriving people of freedom or opportunity, it is immoral unless one can provide an adequate moral justification for doing so. Is there an adequate moral justification for requiring professionals to be licensed?" Gert answered in the affirmative, and his explanation drew upon utilitarianism. His thinking, I suspect, matches what supporters of geological licensing feel. Gert said that while licensing violates a moral *rule*, moral *ideals* take precedence over rules, and there are moral ideals that licensing might be in accord with. These ideals are pleasure and prevention of evil and harm.[46] Furthermore, it is all right for *governments* to strive to increase these utilitarian ideals even while depriving some people of freedom and opportunity. Gert justifies this with a sort of head count on the parties involved:

> [W]hen a rational person considers whether he would publicly advocate allowing a government to violate the moral rule against depriving of freedom or opportunity in order to promote goods, he does not, as with individuals, have to consider the consequences of everyone being allowed to break the rule ... because there is only one government. ... The consequences of many individuals being allowed to violate this rule are clearly much worse than allowing a single government to do so.

Gert's numerical argument is perhaps interesting and novel, but I think it falters when faced with the historical evidence. This could serve as a convenient launching point for some of the usual arguments against an overreaching state: the curious products of the meeting of personal-interest-maximizing voters and vote-maximizing politicians in a democracy, the astonishing historical events that have been set in motion by authoritarian regimes, and the calculational chaos involved in any government trying to administer an economy. But I won't launch into such a discussion here, tempting though it is. Others have already written enormous amounts on these topics. These topics involve a larger issue, that of the state in general when it is given a monopoly in the right to break rules, which Gert approves of, and when the state takes on too many tasks.

Perhaps I'm breaking a rule of argumentation: The potential for abuse doesn't bar its use. Applied in this case, this would read: The potential for abuse of state power doesn't bar its use in selected cases, e.g., licensing. And perhaps the focus should be on the utility of licensing. In concluding his paper, Gert (1982) went to the heart of the question of utility:

> There are, of course, a multitude of important questions concerning licensing that only appropriate empirical research will answer. But given the complexity of these questions and the wide-ranging ramifications of the licensing of professions, I would suspect that rational persons will be able, in the large majority of cases, to disagree on whether a given profession should be licensed or not. Of course, if one is in doubt that licensing does any good, then it is unjustifiable to require licensing.

The utility or disutility of licensing, whether it does or doesn't do any good, is an extremely important question. Licensing advocates like to tell us geologists that licensing "doesn't cost; it pays." That sounds like a statement concerning costs and benefits, things best explored by economists. We turn to the economists next, in Chapter 3.

Most economic studies of licensing reveal that it undesirably limits consumer choices, raises consumer costs, increases practitioner income, limits practitioner mobility, deprives the poor of adequate services, restricts job opportunities for the poor and minorities, doesn't raise quality, and exists due to an ignorance of the effectiveness of market forces and other remedies.

3. The Diseconomics of Licensing

I believe that in every part of our complicated social fabric there must be either national or state control.

THEODORE ROOSEVELT

Le monde va de lui même. (*The world goes by itself.)*

LATE 18TH-CENTURY FRENCH PROPONENTS OF LAISSEZ FAIRE

If we were directed from Washington when to sow and when to reap, we should soon want bread.

THOMAS JEFFERSON

The free market is not only a more efficient decision maker than even the wisest planning body, but even more important, the free market keeps economic power widely dispersed.

JOHN F. KENNEDY

I am myself persuaded that licensure has reduced both the quantity and quality of medical practice .... It has forced the public to pay more for less satisfactory medical service.

MILTON FRIEDMAN

In bringing economics to bear on the issue of licensing, we see the discussion break wide open. Unlike in philosophy, in which there's a shortage of philosophers discussing licensing, economists find licensing to be an intriguing topic worthy of numerous published papers. Unfortunately, none of these papers discusses licensing of geologists. Instead, economists seem to prefer to study licensing of doctors, other health professionals, attorneys, and beauticians. This shouldn't cause a problem. It seems acceptable that concepts governing licensing of doctors and lawyers should apply equally well to all occupations, geology included.

Licensing proponents have tried to set up a different type of problem. They hope to create a special distinction or image for the more learned professions like geology. This depends on showing that learned professionals don't *sell* to *consumers* but rather they *provide a service* to *clients*. They sell only time, and profits are obscured and secondary. They don't stoop to advertising or competing on price. Theirs is a higher calling. Young debunked this spurious image, concluding that "professionals are subject to the same forces of supply and demand as any other group" (1987, p. 4).

It's quite useful and instructive that medical doctors get a lot of the attention. Doctors, as most of us are aware, acquire extensive education and training and then use them to wield enormous power over the forces of life and death, perhaps more than any other professionals imaginable except, perhaps, for engineers who design and run nuclear power plants. If the evidence can convince a large number of scholars studying the issue that consumer interests could be improved by doing away with licensing of medical professionals, then the evidence should be at least as convincing when applied to geologic practice. According to Gross (1978), "licensing of doctors is the model that other professions aspire to, so experience with that model is instructive" [p. 1009].

The Economists

One of the great ironies in the debate over licensing involves who we're told to pay attention to. Some proponents of geological licensing on the one hand will say that one must pay attention to only qualified, licensed geologists when it comes to geologic matters. In legal disputes, for example, we want to see that geologists are called on to give expert testimony in geologic matters; indeed, one argument

in defense of licensing is that it gives geologists parity with engineers in legal settings. On the other hand, licensing proponents will summarily dismiss the findings of a vast number of economists when it comes to licensing itself. The irony is that licensing of geologists, at heart, is much more a matter of economics and other social sciences than one of geology.

Many geologists, when presented with the conclusions of economists, find themselves frustrated. Some want to malign economics with the old, shopworn tag "the dismal science."[47] George Stigler (1988, p. 4–6) gave a believable account for why anyone, geologists included, might want to ignore economists:

> Why has it been fashionable to abuse economists (even granting the possibility that they may deserve it)? The main reason is easily named — economists have been the premier "pourers of cold water" on proposals for social improvement, to the despair of the reformers and philanthropists ... . Economists are messengers who so often bring bad news, and so earn the reputation of such messengers. I do not consider this public role to be either unnecessary or unimportant. A society that does things that are inefficient or perverse in their effects ought to be told so. Doctors are obliged to warn against nostrums that do nothing to cure and may harm, and engineers are supposed to warn the legislature against perpetual motion machines. So it is with economists.

Another economist, Paul Heyne (1984, p. 607), would agree with that sentiment:

> [E]conomic theory often treats proposals for reform of the economic system so unkindly…. Economic theory, by revealing the interdependence of decisions, calls attention to the unexamined consequences of proposals for change. "It won't work out that way" is the economist's standard response to many well-intentioned policy proposals.

If certain geologists feel dismal when reading economics, it could be because they realize the sheer volume of scholarship in peer-reviewed economics journals that weighs against licensing. And if some economists feel dismal, it could be because they write so much debunking literature that just gets ignored by policymakers and the public. It appears to me that the bulk of economic studies debunking government licensing was published in the 1970s and 1980s, with "tails" extending back into the 1940s and forward to the present. (The

topic also received minor attention in the 18th, 19th, and early 20th centuries.) I know of no recent study or meta-analysis invalidating the antilicensing work of the late decades of the 20th century. Economists just seem to have drifted to other topics.[48] Such are the vagaries of trends and fashions in academia.

I wonder, though, how it would feel to be an economist, one of many, publishing ironclad data that a government policy is wrong-headed yet receiving silence from the world at large. Perhaps it's how Alfred Wegener felt when he proposed continental drift, a theory that was dismissed for several decades. On second thought, Wegener is a poor analogy. He lacked the data to make a convincing case. Finally, in 1967, the data (e.g., paleomagnetic seafloor "stripes," mid-ocean ridges, seismicity patterns, and fossil correlations) did come together and resolve into the modern theory of plate tectonics. A true revolution in science occurred. Wegener lived not quite long enough to see his theory of continental drift incorporated into plate tectonics.

Many living earth scientists may happily escape Wegener's fate. We live in a time when we can watch history being made on many fronts, and we may enjoy participating in its unfolding. I speak here of the current science behind global warming. In this case, politicians have climbed over one another to trumpet the data that support their pet theory. Why would they do so? Because it enhances their chance at fame, in the style of Al Gore, and aggrandizes their power. Which politician wouldn't want to get behind solar power subsidies (of Solyndra by the Obama administration in 2011 [failure]), "clean coal," or automobile fuel efficiency standards?

My point is this: few living economists have enjoyed the experience of collecting data to bolster a theory that has captured the attention of contemporaneous politicians and the public. Their theories occasionally work their way into the realm of business, particularly in management and finance. But into society at large, no. There are occasional exceptions: John Maynard Keynes developed Keynesianism in the 1930s.[49] Arthur Laffer presented the Laffer curve, which had an effect for about a decade (the 1980s). In a similar way, economists wished to educate the masses and the elites regarding the nonsense of state licensing. But the message never quite resonated where it could count. A lazy pitch was slugged on a trajectory nearly out of the park, but it snagged on a fence for just a ground-rule double. Perhaps economists could take comfort, as I have, in this aphorism by Nassim N. Taleb (2010, p. 81):

> For Seneca, the stoic sage should withdraw from public efforts when unheeded and the state is corrupt beyond repair. It is wiser to wait for self-destruction.

So, we have a situation where reams of scholarly work warn against professional licensing. Dozens of papers and several bound volumes are dedicated to debunking the notion of laws and bureaucrats dictating who may engage the services of whom. The scholars involved include economists, psychologists, other social scientists, and philosophers. A few of them have Nobel Prizes to their name. Look it all up, if you wish, in the many peer-reviewed journals somewhere in dusty stacks of a good library in your neighborhood, if you live in a university town, or on the web.

Ignore it all, as most of society has done, and go on a merry way, blissfully ignorant, heaping licensing requirements on more and more occupations. I was amused to hear one licensing supporter nonchalantly wave away all this scholarship with this one-liner:

> "Economists don't know anything about geology."

That statement was delivered straight to my face by one very prominent prolicencing engineering geologist. He was indeed correct. Economists don't (know anything about geology). But there's a failure to think clearly that renders that statement hollow. Economists don't need to know anything about *geology* per se to study the *economic* effects of licensing of geologists. Watch this now: likewise, a geologist doesn't need to know anything about *economics* to investigate the *geology* of the site of a proposed building for an economics institute.

What economists do when they look at professional licensing is study the *economics* of professions: the production, distribution, and consumption of professional services. Every day economists spawn valuable data about the production, distribution, and consumption of steel, cars, and computers without knowing anything about, say, the geologic outcrop patterns of the iron- and copper-bearing minerals that allow the making of those machines and the computer code that allows them to execute their tasks so elegantly.

According to Rosen (2010), Adam Smith himself never even set foot in an Industrial Revolution pin factory, although Smith's (1937 [1776]) discussion of pin manufacture is a classic, one of the most frequently cited items in social science. Smith wrote nothing about steam power, Watt's dual-chamber steam engine, or iron forging, and next to nothing about water power or textile weaving. Smith was able

to say little about the 18th-century technologies that were ushering in a revolution in the ways that humanity could invent and thereby put hunger and want behind it. Smith was a classic absentminded professor, meandering the streets in less-than-fashionable attire, mumbling to himself, occasionally losing his way. Yet Smith was able to explain for the first time the efficiencies of specialization and a self-regulating economy that "allowed Britain, and then the world, to finally produce food (or the wealth with which to buy food) faster than it produced mouths to consume it" (Rosen, 2010, p. 251).

Those who advocate licensing of geologists seem ignorant of what economists have done and what economists do when studying this specialization and this self-regulating economy. Something else that may drive geologists to shoo away the economists is this idea: Who better to evaluate a geologist than another geologist? Indeed. (Recall the guilds of Smith's time and before.) On the surface, one might mistake this for a point in support of licensing. It isn't. The subtle but critical distinction that prevents it from becoming so is this: What sort of power does the evaluating geologist wield? Any geologist is certainly welcome to remark on the fitness of other geologists — everyone is entitled to their opinion — but she hasn't yet taken any ultimate decision-making power away from any consumers or practitioners. However, if an evaluating geologist takes the extra, dictatorial step of denying work to a "less-qualified" geologist, then they take on licensing powers. To do so is to force an economic decision on other people: to *decide who* gets to trade with whom. Such a decision is economic in that it limits choices, alters opportunity costs, and affects producer prices. And so, licensing proponents hand to economists an embossed, calligraphied invitation to visit this issue.

The writings advocating geological licensing contain other errors, such as this one: "The question of how much licensure is enough is [a relatively easy question] to answer. The market, over the long run, demands enough licensed professionals to meet its needs" (Tepel, 1995, p. 79). The market, however, has no needs. It has no idea how many professionals are needed. It has no needs and has no ideas because "it" is not a sentient being with needs and thoughts. (This isn't a minor point, and I don't mean to sound mischievous.) Only human beings have needs and wants. More importantly, those desires *are never met*. Humans have practically unlimited desires. Economics is often described as the study of allocating limited resources among people with unlimited demands. We can, through licensing, restrict the supply of geologists and increase the cost of geologic services. The market for geologists may clear, but at a higher price. The higher

price dampens the consumer's enthusiasm for hiring any more geologists, giving some observers a false impression that demands are met and consumers are satisfied. Yet the true demands of consumers still remain vast.

It also appears that geologists don't understand what economists mean when they say that licensing costs too much. According to Hoose and Tepel (1990), geologists often find this assertion incomprehensible, perhaps believing that the total cost of licensing equals only the amount of licensing fees.[50] John Wolfe, former executive officer of the California geologist licensing board, said that the costs of licensing are easy to determine (1976). Wolfe (a geologist, not an economist) made this breezy statement without attribution, research data, context, or explanation. In reality, the costs are potentially enormous and very difficult to determine, and one doesn't determine them merely by tallying the fees that geologists pay to their licensing board.

Many licensing supporters assume their stance, I think, out of a feeling that a market couldn't give the tight regulation of the profession as does licensing. This might seem close enough to the truth, though it falters on one crucial semantic point, on the word *couldn't*. A market can provide practically anything for which there is a great enough desire. However, under the current regime of consumer demand and practitioner supply, the market *might not* regulate as tightly (as some desire) as does licensing; not that it *could*n't if necessary, under a freer regime. The market free of state restrictions would not be unregulated. In fact, it would be quite well regulated, but it would be self regulating, self correcting.

These sorts of misunderstandings show that, before delving into the specific antilicensing literature, it would be best to first review what economists do and what precepts undergird the antiregulation school of thought in economics.

The following description of the domain of economics by Heilbroner (1986, p. 19–21), though it makes for a lengthy excerpt, goes a long way to explain:

> Society's existence hangs by a hair. A modern community is at the mercy of a thousand dangers: if its farmers should fail to plant enough crops; if its railroad men should take it into their heads to become bookkeepers or its bookkeepers should decide to become railroad men; if too few should offer their services as miners, puddlers of steel, candidates for engineering degrees — in a word, if any of the thousand intertwined tasks of society should fail to get

> done — industrial life would soon become hopelessly disorganized. Every day the community faces the possibility of breakdown — not from the forces of nature, but from sheer human unpredictability.
>
> Over the centuries man has found only three ways of guarding against this calamity. [One,] he has ensured his continuity by organizing his society around tradition, by handing down the varied and necessary tasks from generation to generation according to custom and usage: son follows father, and a pattern is preserved. In ancient Egypt, says Adam Smith, "every man was bound by a principle of religion to follow the occupation of his father, and was supposed to commit the most horrible sacrilege if he changed it for another." Similarly, in India, until recently, certain occupations were traditionally assigned by caste; in fact, in much of the unindustrialized world one is still born to one's metier. Or [two,] society can solve the problem differently. It can use the whip of authoritarian rule to see that its tasks get done. The pyramids of ancient Egypt did not get built because some enterprising contractor took it into his head to build them. ...
>
> For countless centuries man dealt with the problems of survival according to one or the other of these [two] solutions. And as long as the problem was handled by tradition or command, it never gave rise to that special field of study called "economics." Although the societies of history have shown the most astonishing economic diversity, although they have exalted kings and commissars, used dried codfish and immovable stones for money, distributed their goods in the simplest communistic patterns or in the most highly ritualistic fashion, so long as they ran by custom or command, they needed no economists to make them comprehensible. … [T]he economists waited upon the invention of a *third* solution to the problem of survival. ... The arrangement was called the "market system," and the rule was deceptively simple: each should do what was to his best monetary advantage....
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> ... And until a very few centuries ago, men were not at all sure that the market system was to be viewed without suspicion, distaste, and distrust. The world had gotten along for centuries in the comfortable rut of tradition and command; to abandon this security for the dubious and perplexing workings of the market system, nothing short of a revolution was required ... fundamentally more disturbing by far than the French, the American, or even the Russian Revolution.

Heilbroner gave an elegant historical description of one central problem in economics. However, he described a pure market economy and

implied that economists study only market workings and never government actions (although the rest of his book clearly belies this implication).[51] A true market exists practically nowhere in the world today. What most of us are familiar with is a mixed economy, in which market forces and government fiat are blended. It is possible to find economists, and of course others, who tend to favor state intervention when market failure is perceived. Sylvia Lane (1983) is one who has made a case for extensive government intervention in seller–consumer relationships.

Other economists tend to favor market solutions to economic problems. Within economics there is a body of thought holding that there exists no objective, conscious, determinate way for individuals collectively to make rational economic decisions, i.e., to choose what to produce and consume. This principle speaks directly to licensing and to decisions as to what sort of geologic services will be available in the economy. Licensing says that such goals can be consciously decided: licensing says, in effect, "a certain quality level of geologic work shall be upheld and these are the geologists who shall provide it."

The view in economics that denies this claim can be called simply "market economics,"[52] although there are many strains running through it (the Austrian school, the Classical school, monetarism). Market-based economics throws into doubt the value of, say, a king (or emperor or tsar) diverting huge armadas to foreign shores to find gold and retrieve it, or promoting guilds that allow only certain select members to bake bread or make clocks. We see the folly in this. We are skeptical of one man's ability to objectively reach the best decision concerning the preferences of many people.

Therefore, we the enlightened throw the question open to the democratic decision-making process — actually to a republican form of government tied to a regulatory bureaucracy. This, we believe, solves the problem of one-man rule. And in a sense it does, as it allows the values of many more people to be factored together, somehow, and more people will be pleased with the outcome. At least it's an improvement. But this merely falls under the heading of market socialism or social democracy, not a true market.[53]

A true market takes the dilution-of-power idea to its ultimate conclusion. It holds that individual preferences and values are subjective yet paramount, and it allows these many preferences to interact unencumbered, in a market. People are left to fill in the blanks. This market by definition, qua market, is absent artificial forces (i.e., the state) pushing the outcome in some preferred direction. And the best

outcome, the highest practical utility, is, far more often than not, the result.

There are innumerable sources to consult presenting this idea and its ramifications. Lew Rockwell (1995), condensing some of the ideas of Ludwig von Mises and Friedrich Hayek and economists of the Austrian school in general, presented it this way:

> Rational economic calculation requires a profit-and-loss test. If a firm makes a profit, it is using resources efficiently; if it makes a loss, it is not. Without such signals, the economic actor has no way to test the appropriateness of his decisions... Socialism holds that the means of production should be in collective hands. This means no buying or selling of capital goods and thus no prices for them. Without prices, there is no profit-and-loss test. Without accounting for profit and loss, there can be no real economy. Should a new factory be built? Under socialism, there is no way to tell. Everything becomes guesswork.... One top socialist, Oskar Lange, conceded that prices are necessary for economic calculation, but he said that central planners could generate prices out of their own heads, watch the length of lines at stores to determine consumer demand, or provide the signals of production themselves. Mises countered that "playing market" wouldn't work either; socialism, by its own internal contradictions, had to fail.... The knowledge generated by the market process was inaccessible to any single human mind, especially that of the central planner. The millions of decisions required for a prosperous economy are too complex for any one person to comprehend... Prices provide economic actors with critical information about the relative scarcity of goods and services. It is not necessary for consumers to know, for example, that a disease has swept the chicken population to know that they should economize on eggs. The price system, by making eggs more expensive, informs the public of the appropriate behavior. The price system tells producers when to enter and leave markets by relaying information about consumer preferences. And it tells producers the most efficient, that is, the least costly, way to assemble other resources to create goods. Apart from the price system, there is no way to know these things.

It's true that the licensing board doesn't try to "play market" by tweaking pass rates for exams. Fine-tuning the number of geologists to satisfy the market is a minor to nonexistent goal of geology boards, at least as I perceive it in California. (With some other boards, however, tweaking of pass rates may take place. Alex Maurizi [1974] and

Elton Rayack [1976] have seen widespread evidence of inverse relationships between pass rates and unemployment rates in other professions, suggesting a concerted effort by boards to play market. One conclusion from a study on dental licensing by Boulier (1974) was that the difficulty of the licensing exam was manipulated to protect incomes.) The board's main goal is to provide a floor for ability below which no practitioner may enter the field. The percentage of geologists passing the licensing exam generally remains within some band (around 1/3 to ½ in California; Mathewson [1996] saw results consistently below 50%) even with the wild swings in the numbers of examinees sitting for the exam. The number of geologists receiving licenses, then, is allowed to expand and contract a little with the pressure for licenses.

How does a geology licensing board really know in each individual instance which particular geologist possessing a set of abilities should work for which particular buyer with a set of needs? It doesn't, and it makes no attempt to know. It behaves as if all consumers were the same, with the same needs. The board doesn't really make any finessed try to play market so much as it simply sits astride the market, like a playground bully. It acts in the role of crude central economic planner, without the benefit of decades of earnest practice of the Soviet bloc bureaucrats. It says, in essence, "these practitioners constitute the supply, demand be damned."

A market, on the other hand, allows each coupling of professional and consumer to occur as seen fit by them. The difference, which can probably be glimpsed by now, is vast.

Restriction and its Consequences

The entry restriction has sometimes been derisively called "the old boys keeping the young squirts out of the business." The geology profession is likened to a cartel. Some geologists have countered the entire restriction-on-entry charge by saying (1) there's no evidence that licensing boards manipulate exam content or the required passing scores in order to numerically limit entry into the profession and (2) the numbers of new geology licensees increase dramatically in some years.

True, but both counterarguments are peculiar.[54] Both of these assertions are unwilling to see a restriction as just that, a restriction. A licensing exam is going to let only a fraction of total hopefuls join the profession in a given period. The remaining fraction aren't allowed to practice. That's a restriction. By choosing a passing score (and, by

extension, a passing percentage), the licensing board has withheld geologists from the market who probably could have found some geologic work for some consumers suiting their abilities. The fraction of takers who pass the exam indeed remains moderately stable from exam to exam, and we'll grant that most licensing boards do little to alter that fraction by whatever potential tools available. However, nothing changes the fact that someone is artificially preventing supply from reaching demand. Both Castro (Fidel or Raul) and the U.S. administration can claim they have no control over the currents or the appetites of sharks in the Strait of Florida, and these factors account for the percentage of Cuban refugees who survive the northward voyage remaining small regardless of the size of any wave of Cuban refugees, but there's still something disturbing about a Cuban *líder* who drives his people to such desperation and a U.S. administration that won't allow safe transport between the two shores.

Restrictions on the supply of professionals can have interesting, sometimes unintended consequences. Licensing advocates, like trade protectionists, have simply noted that enhancing the position of industry X has helped X without noting the high costs that millions of other individuals have paid for the privilege of aiding it. For example, two economists who have questioned licensing, Carroll and Gaston (1983), saw a statistical correlation between licensing being instituted and consumers findings ways, often detrimental, to avoid using licensed professionals. They reported that electrocutions increase with licensing of electricians and that sales of plumbing supplies for do-it-yourselfers soar with licensing of plumbers. Evidently, the increased cost of licensed workers gave consumers incentives to find alternatives.

We've entered the realm of unintended consequences, so common in discussions of state policy. We start to see them when we move the camera back or simply switch to a wide-angle lens. We usually focus so closely on the *quality* of geologic services that we're blind to what's happening to the *quan*tity.

Licensing, by its very purpose and nature, restricts the number of engineering geologists. This raises the price of geologic work and, hence, the cost of houses and roads. What happens to those consumers who cannot afford the higher price? They begin to shun the service.

Some of these are the homeless. The homeless don't pass us on the street and shun us by saying, "Ye be a geologist, aye, I can tell by the glint in yer eye. To Hades with thee!" Rather, they are the marginalized people in our communities, residing in a car or someone's garage or under a bush in a freeway cloverleaf. They do so because the rent on a

suitable dwelling somewhere in their recent past cost $700 per month rather than $400, and they were forced to vacate. Is it possible to say this: we've been shunned … by the shunned? Others who shun our efforts are the homeowner do-it-yourselfers. These DIYers don't overtly tell us to buzz off. Instead, they look at prices and act appropriately.[55] In acting appropriately, they don't hire a licensed electrician, plumber, architect, or structural engineer. Some of these DIYers may know what they're doing.[56] Others may not. Much work by economists shows that this decrease in the *quanti*ty of professional services (that is ultimately used) offsets any increase in *quali*ty that is forced upon consumers.

Carroll and Gaston (1983) discussed this quantity/quality relationship in the business of air travel.[57] A crucial concept that the authors point out is that the focus must be on the total service product that consumers, in the aggregate, receive, which is a function of both the quality and the quantity of the product. Otherwise, there will be a tendency to look at only the *quali*ty of the limited services that the licensing process allows to pass through its filter. Another study by Carroll and Gaston (1981) showed that, of seven professions examined, licensing harmed consumers in all cases. Friedman and Kuznets (1945) concluded that a large part of the difference between the incomes of professional and nonprofessional health-care workers was due to licensing rather than to any extra skill and training of the professionals. Observations of incremental variations in regulatory practice generally show that tighter controls don't lead to higher quality medical services and that fees and provider incomes were higher in states with more restrictive licensing requirements (Gaumer, 1984). The Federal Trade Commission concluded that occupational licensing often raises prices for consumers while failing to realize the goal of increased quality (Cox and Foster, 1990). Morris Kleiner et al. (1982) found that the licensed are less mobile and enjoy enhanced earnings, calling licensing "an impediment to the geographic allocation of labor resources." Lawrence Shepard (1978) reported that just the restriction-on-mobility aspect of licensing of dentists alone results in 12–15% higher charges in jurisdictions without reciprocity. This was associated with an annual cost penalty of $700 million (in 1978 dollars) to U.S. dental patients. (What's this term *reciprocity*? Reciprocity is when licensed professionals in State A, by way of their board, allow professionals licensed in State B to practice in State A; and maybe also allow professionals from States C, D, and E to practice in State A; and maybe vice versa.) Arlene Holen (1965) arrived at similar findings with regard to the dentistry and law professions. She also concluded that states with higher exam failure rates in these two professions have higher practitioner income. A study of the health-care indus-

try in Canada by Timothy Muzondo and Bohumir Pazderka (1980) revealed that occupational licensing, combined with mobility restrictions and advertising restrictions, increased costs by as much as 27%. John Lott (1987) explained that, in addition to the deadweight loss due to reduced output and the resources devoted to rent seeking by a licensing monopoly, the nonsalvagable resources spent on rent seeking create their own barriers to entry into a profession. William White (1978) examined the effects of licensing on the income of clinical laboratory workers and the quality of work produced. He found that in cities with stringent licensing restrictions, the income of licensed workers was 16% higher than in cities with less-stringent restrictions, with no variation in the quality of work. Licensing raised costs for TV repair in Louisiana versus California (Phelan, 1974). Jeffrey Pfeffer (1974a, b) found strong evidence for the hypothesis that licensing is used to restrict entry and enhance incomes in five of six occupations he examined. Carroll and Gaston (1979a) found a significant negative association between real estate brokers' pass rates and earnings, meaning that as pass rates went down (greater restriction), earnings of brokers went up. They (1979b) found significant inverse relationships between pass rates and earnings for accountants, architects, barbers, practical nurses, registered nurses, pharmacists, physicians, and plumbers; a lack of significant relationships was found in sixteen occupations. Shepard (1978) found that for eleven of twelve common dental services, prices were higher in states that do not permit reciprocity than in states that do. Lee Benham and Alexandra Benham (1975) found that prices for vision care were 25–40% higher in states where there was greater professional control. Carl Shapiro (1986) employed much mathematics to analyze licensing, certification, laissez faire, and connections between practitioner training and quality. The math, naturally, is hard (for me) to follow, but Shapiro concluded that

> Even when it raises aggregate consumer surplus, licensing cannot constitute a Pareto Improvement. Those consumers who value quality relatively little are made worse off by licensing. In general, licensing raises the average quality of service in the market, but the cost of doing so may be so great as to decrease aggregate consumer surplus.
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> Certification, i.e., the provision of information about professionals' training levels, can be superior to licensing [although Shapiro presents interesting qualifiers for this particular conclusion].

White (1980) reported that licensing of RNs in the U.S. mainly stems from nurses' efforts to deal with competition from less-skilled personnel. White's same study (1980), however, also showed that licensing had

no positive impact on wages of RNs in 1960 or 1970, although they could in the future. This is one of a handful of studies that find no harm done by licensing. Usually there are sound reasons to dismiss such findings. White (1980) himself supplied one such answer to the conclusion of his own study: the licensing of nurses could have been setting standards at or below the standards that nurses (by themselves) had already succeeded in setting across the U.S. decades before through voluntary certification. In another study, B. Peter Pashigian (1980) found that among 157 occupations in his sample, the workers in licensed occupations do not have significantly higher earnings than those in unlicensed occupations. This contradicts findings developed by Payne (1977), in which about a half of the substantial income differential between licensed professionals and unlicensed nonprofessionals was the result of the greater difficulty of attaining entry (imposed by licensing). Pashigian's (1980) conclusion, however, comes with this qualifier: it doesn't "compare an occupation before and after the advent of licensing. Unfortunately, many occupations were licensed before the second decade of the twentieth century, and the dearth of information often precludes a before-and-after study," in Pashigian's words. Nor does it compare incomes within one occupation between states with stringent licensing and states without. Thus, Pashigian's study is inconclusive with regard to the effect on earnings. Pashigian's main finding was that members of licensed occupations are less mobile, due to lack of reciprocity between states. This can cause imbalances in supply, which yield no benefit for consumers. (Thus ends a short digression into the literature suggesting licensing to be neutral in its effects.)

In the medical profession, there appears to be some amount of acrimony concerning access to birthing services. The medical monopoly, it is charged, uses the government's power over licensing to restrict access to midwives. Blevins (1995) concluded that Americans could save $2.4 billion annually if an additional 20% of American women used midwives (bump that up to at least $5 billion annually in mid-2010s dollars to account for inflation and population increase). Meanwhile, A. Mark Durand (1992) found that lay midwife-assisted home births were as safe as births assisted by licensed physicians. Chris Hafner-Eaton and Laurie Pearce (1994) documented far more extensive use of midwives and home birthing (versus doctors and hospitals) in Europe than in the U.S.

Stuart Dorsey (1980, 1983) explained how licensing discriminates against those low on the income scales and members of certain minority groups. An important way licensing does this is to often make it illegal to set up a small business providing simple services to a

small clientele out of one's home. This is a way of earning income favored by some ethnic minorities. Another way licensing tends to discriminate is by making services more expensive, which puts a disproportionate burden on those with low incomes. Walter Williams (1977) suggested that occupational licensing (along with business licensing and the minimum wage) may handicap blacks even more than racial discrimination does.[58] Dorsey (1983) even speculated that licensing laws could be vulnerable to challenges under Title 7 of the Civil Rights Act of 1964. These sorts of charges come from all sides of the political spectrum:

> Last month [October 2015] the Treasury and President Obama's Council of Economic Advisers put out a report that looked at employment data from the states and concluded that "licensing requirements raise the price of goods and services, restrict employment opportunities, and make it more difficult for workers to take their skills across state lines." … The left-leaning Brookings Institution, for example, says that [state licensing rules] resulted "in up to 2.85 million fewer jobs nationwide" and cost consumers more than $200 billion in higher prices each year (Anonymous, 2015).

In early 2017, I asked two contractors for estimates for a new fence that would duplicate the 62-ft-long, 6-ft-tall wooden fence in my rear yard. Both came out on separate occasions and looked at the existing fence for 20 minutes. The price estimate from the licensed contractor was $2,356; the one from the unlicensed contractor, $1,922, 18% less. Same fence.[59]

Licensing proponents haven't, to my knowledge, pointed to an economics analysis that shows professional licensing in general, let alone geological licensing specifically, yielding a cost-to-benefit ratio less than unity. The question to be asked, then, is What are almost thirty U.S. state geological licensing laws doing on the books without the backing of one rigorous, specific economics study? The proli-censing literature describes no one — neither geologists nor consumers — trekking up the steps of their respective state capitols towing boxes of economic studies to impress their legislators with the need for licensing.

So, who does climb the steps of state capitol buildings, pass through the metal detectors, and submit laws for consideration? Lobbyists. Specifically, lobbyists with financial backing from the

upper echelons of trade groups. I was once, many years ago, in a minor way, intimately involved in this process myself.[60]

Some geologist-participants in this debate have said that "what is needed is the proper application of available information." We see little such application in support of licensing. It would seem the information to support licensing isn't used because it's unavailable, and it's unavailable because the benefits of licensing aren't real.

Side Effects, Drugs, and Legislation

Suppose one were *required* to present scientific data to a state legislature, or to the federal legislature, which we in the U.S. call *Congress*. Suppose the required data were scientific data, and the science in question was required to match with the type of legislation to be debated. Obviously, then, if a legislative bill had economic ramifications, then some sort of economic analysis should be required.

I believe so. Legislative bills should receive input regarding their economic impacts (science) before being signed into law. If you disagree, consider what legislators have done in the past in analogous situations.

In the U.S., you need to prepare an environmental impact report (EIR) before constructing some major piece of infrastructure. My home state of California has a similar process. I'm quite familiar with the process, having been involved in preparing documentation in satisfaction of the CEQA process.[61] If you want to construct a development with a few hundred houses, then you need to prepare an EIR. Some of the issues are commonsensical, like hydrology and traffic. Some of the issues are a little more, well, shall we say offbeat: archeology (a bone fragment) or an endangered species (a ground squirrel). Geology may straddle a gray area somewhere between the commonsense and the weird. Yes, we want geologists to ensure that a landslide on a development won't speed up and enlarge and affect neighboring properties. No, we may not want, as I've seen, NIMBY, busybody, know-nothing activists and their highly paid, hired-gun attorneys shrieking about some obscure 1956 geologic map that shows a 5-mile-wide gravity-anomaly band as if it were a zone of impending catastrophic damage through urban Oakland, California, perhaps at a time predicted by an Aztec calendar. No, you may not, unless you're beholden to a utopian Marxist gridlock of worker union vs. worker union, wish to see a project held ransom by a trade union, as I have, whereby objections to (bizarre) geotechnical hazards are cited but can be made to "go away", in the style

of extorted "protection money" to gangsters, with agreements to hire the workers of a certain union on a certain pay scale.

As part of the EIR documentation process, dozens of trees sacrifice their lives to thousands of printed pages. Thousands of hours of time of highly energetic, educated people (and you know the going rate: $100 to $500 per hour) get sucked into this vortex. This mass of intelligence and human capital are diverted from other possible social efforts like — oh, I don't know, call me silly — maybe the education of 4 and 5-year olds, health care for impoverished migrant populations, or a cure for cancer.

I was the geologist of record (project supervisor, chief, whatever you want to call it) on a project involving several dozen housing units on a site that formerly held just some piles of topsoil strippings and quarry waste. In an uphill area, a biologist spotted a few native plants that a few rare local caterpillars may graze on. A good portion of an acre, worth a few residential lots in this tight, urbanized location, was set aside for these ground-hugging shrubs and insect larvae. A 10-foot-tall Keystone® wall was constructed to retain the soil on which these invertebrates and their native host plants would reside. I liked to refer to this structure and the level ground above as a sort of shrine, constructed out of bureaucratic fiat, and one ugly shrine at that: masonry blocks, weeds, concrete curb and gutter, and asphalt. It still stands as a sort of place of worship for some immaterial spiritual value that I cannot, with all the intellect and spiritual power within me, conceptualize. I came across no scientific data showing a handful of bugs superior to workers getting to their nearby jobs at Genentech in South San Francisco, discovering cures for diseases, saving 2 extra hours of commute time every work day to play with their children, and saving tons of pollutants pumped into the environment. Perhaps the U.S. Constitution's 1st Amendment's reference to religion should separate us from a requirement to erect shrines to this new-age style of animism.

If you live in the U.S. and you don't live in a cave but still watch T.V. or read a magazine or a newspaper,[62] you may have noticed (1) the one or two pages of disclaimers, side effects, and other pharmacological details following any advertisement for a pharmaceutical product in the print media or (2) the side effects and warnings voiced over the pretty graphics in any television advertisement for one of those glamorous, highly profitable drugs such as Cialus®, Lunesta®, or Levitra®.[63] Those extra pages of print and extra hours of broadcast time must cost $billions per year.[64]

The $billions spent every year, and the total $10s of billions spent, diverted, and wasted since their inception some 30 to 40 years ago (my rough educated guesses) on environmental impact reports and advertis-

ing disclaimers are the direct result of legislation and case law. Legislators and judges have ruled that a neighborhood (so-called stakeholders), in the case of new infrastructure, needs spiritual and scientific input before allowing developments to proceed. Legislators and judges decided that consumers, in the case of advertisements, need to read fine-print scientific data before making personal medical decisions. $Billions have thus been sacrificed and burnt upon the altars of political grandstanding and legacy-building by our so-called leaders.

Did state or federal legislators or courts ever seriously consider the serious potential *economic* effects of their environmental-impact legislation and rulings on pharmaceutical side effects? Evidently not. I wish they had.

I wish they were required to conduct careful, detailed economic studies before passing far-reaching laws. Did you spot a possible irony in my wish? Well, here it (apparently) is: I've attacked the waste that results from legal requirements for scientific input into developments and pharmaceutical sales, yet I'm calling for scientific (economic) input into legislation. Presumably, the sort of economic analyses I'd like to see would also consume many trees and man hours.

Let me dispel the apparent irony thusly: First, I brought up this whole discussion to show that we already have experience with requirements that we *analyze* a situation before we *do* something. So, naturally I'm warm to the intent behind, the spirit of, EIRs and "consult your doctor if you experience …" (you fill in the ellipses). Finally, I'd be quite content with a new type of EIR, an *economic* impact report, bogging down legislation to a snail's pace. We've (we Americans) experimented with a set of checks and balances on and in government for some 225 years, and the current set[65] is wanting. It could be considered deficient when the Federal Register stands at some 81,000 pages (in 2010), currently grows at a rate of several thousand pages per year, and imposes a regulatory cost-of-compliance burden, estimated by the U.S. Chamber of Commerce, of some $1.7 trillion per year (Lucas, 2011).[66] Since I've digressed to defend my wish, allow me to restate it:

Legislation, including professional licensing laws, should pass to a state governor's desk only after satisfactorily passing a detailed economic-impact analysis. Would this mean that "society" should be run by economists? Is this some bizarre, unworkable notion? To both these questions I offer the answers yes and no. At the federal level, we already enjoy the services of the Congressional Budget Office (CBO) and the White House Office of Management and Budget (OMB). Both of these offices are well staffed by economists. They serve, however, only in an advisory role. Our leaders (career, multiterm politicians mostly; attorneys

mostly) are currently still free to engage in their uninformed feel-good populism, personal image-building and name-building, and vote-maximizing, reelection-warchest-building behaviors.

Very limited legislation requiring economic-impact analyses for certain classes of federal regulations was passed by the House (but not the Senate) of the 104th U.S. Congress. Close only counts in horseshoes and hand grenades. It would have proven immensely interesting if this proposed legislation had passed into law and CBO–OMB findings were somehow binding. Events of the late 1990s and the 2000s might have turned out very differently. Probably few new federal regulations would have been promulgated, since, theoretically, it's difficult to find economic justification for any large-scale activity that hasn't arisen spontaneously as a result of natural, individual decisions. Yes, a few economists could put the brakes on a bureaucracy (the unacknowledged fourth branch of the U.S. federal government or any of the fifty state governments). However, the economic decision-making power of a few hundred million other economists (the U.S. population minus a few million bureaucrats) could then be appropriately unleashed. Note that the word *economy* derives from the Greek word *oikonomos*, meaning household manager.[67]

At a strictly local level, states and local governments are free (unfortunately?) to experiment in all manner of regulation with all sorts of economic impacts. They are unhindered in doing so except by their state constitutions and relevant parts of the U.S. Constitution. Thus I am a licensed geologist, and my groceries can no longer get sacked in those nifty little paper or plastic bags, and I may be on the hook soon (taxpayer subsidies and loan guarantees) for new $billion stadiums for new professional football or baseball teams, and I'm lucky enough not to reside in the nearby city of Vallejo, California, population 120,000, which recently entered and emerged from bankruptcy over a period of 3 years, or Stockton, California, population 301,000, which entered bankruptcy recently.

I'd simply like government at all levels to gain a rational footing where it can and devolve its responsibilities where it cannot or should not. Whether this is bizarre, the reader may decide. If some consider this unworkable, well, then: history has shown otherwise.

Market Failure and Externalities

Lee Benham (1980) said that an important trend in 20th-century America has been the cultivation of the public perception of market failures and externalities. Benham, who referred to licensing as career insurance,

raised the interesting question of why certain groups and not others are successful in obtaining this insurance.[68] Answer: the licensed occupations claim they will successfully cope with market failures.

Rockwell (1995) provided a good summary of the Austrian school's response to the notions of market failure and externalities:

> The logic and legitimacy of "market failure" analysis, and its public-goods corollary, is widely accepted by nonAustrian schools of thought. The notion of public goods is that they cannot be supplied by the market, and instead must be supplied by government and funded through its taxing power. The classic case is the lighthouse, except that ... private lighthouses have existed for centuries. Some definitions of public goods can be so broad that, if you throw out common sense, everyday consumer goods qualify.... It is impossible to know whether or not the market is failing without an independent test, of which there is none outside the actions of individuals. The market itself is the only available criterion for determining how resources ought to be used.... It is not economically proper to develop a wish list of jobs and institutions that stands apart from the market itself. Conventional economics teaches that if the benefits or costs of one person's economic decisions spill over onto others, an externality exists, and it ought to be corrected by the government through redistribution. But, broadly defined, externalities are inherent in every economic transaction because costs and benefits are ultimately subjective.... The Austrian School redefines externalities as occurring only with physical invasions of property, as when my neighbor dumps his trash in my yard. Then the issue becomes crime. There can be no value-free adding up of utilities to determine subjective costs or benefits of economic activity. Instead, the relevant criterion should be whether economic actions occur in a peaceful [noncriminal] manner.

This, in essence, is the radical idea that market failure doesn't exist: the term *market failure* is almost a contradiction in terms. In a way, a market can't fail, because there are no widely agreed criteria to discern when such a failure has occurred. My personal library holds an entire (quirky) 221-page volume on just this topic, *Markets Don't Fail!*, by Brian Simpson (2005). A market's performance shouldn't be judged by the preferences of one person or a select group of elder statesmen or by anything external to the market. To do this is like declaring "market failure" when the size and style of shirt we want is out of stock. Keith Leffler (1980) put it another way:

> Markets fail because of asymmetric information just as markets fail because oil is found on the north slope rather than at the gate of extant oil refineries. All real market equilibria could be better, if only...if only... The idea of "market failure" holds an implicit false promise — the promise of an achievable superior, nonmarket alternative — and leads therefore to a Sisyphean search for an economic panacea.

You may happen to be living in Mongolia on October 29. And you just can't find a big pumpkin suitable for Halloween carving. (Assume you're an American temporary expatriot away on business.) Is this an instance of market failure? No. Nor is it a reasonable example to draw from. But it does serve as a discussion starter.

Perhaps you, a permanent resident of San Francisco, find that the particular size and style of jacket, car battery, or car or fresh Dungeness crab you want is out of stock. Do you have to wait in a queue for 4 hours, pre-1991-behind-the-Iron-Curtain style, a subject of a command economy, to find out why? No. Do you scream out of frustration? No. You get to go right up to the counter where you have a brief discussion with the merchant, who will explain to you how the crab season works, or direct you to a competitor down the street, or take an order and make the car part available to you the next day.

While speaking of car parts, the person behind the counter will likely be a friendly, efficient, helpful expert. She'll type your car data into her computer database, pull up some graphics, spin the computer monitor around so she and you can discuss your car trouble together, show you a selection (new or remanufactured, various manufacturers, prices, and lengths of warranties), and order the part you desire so it arrives at that particular shop a few hours later; at least that's been my typical experience. You are a fortunate participant in a market economy, and you remind yourself that you are inconvenienced with product unavailability only on rare occasions. (Once again I've digressed, and I need to return us to our exploration of the perceived failings of various markets.)

To say that the market for geologists has failed because, without building codes and licensing, geologic services won't always and for everyone be procured in "proper" amounts, achieve proper levels of quality, or be performed by proper geologists, is to make the same sort of improper demands on market performance. Any one of us may be mesmerized into a certainty that he or she can infallibly judge the "proper" level of geologic services for others. But the thousands

of individuals involved at any given time in exchanging (or not exchanging) their hard-earned dollars for geologic services, which is what is meant by a market, would overrule anyone's idea of what is supposedly proper.

Nor has the market necessarily failed when externalities are considered. Externalities (the nonAustrian definition) are events associated with a market exchange that extend to others beside the direct participants in the exchange. Externalities can be negative (costs) or positive (benefits). Consider a couple examples of *positive* externalities, drawn from my own personal experience. I buy Christmas lights and string them up in my front yard and pay my regional power company for the electricity to power them the last 2 weeks of December. I enjoy all this. My immediate family members and guests we invite to our home enjoy it, too. My neighbors also get a bit of cheer as they drive by at night during those dreary times when daylight spans just 10 hours per day.[69] An underutilized, semiabandoned commercial property two blocks from my house gets remade into a thriving shopping center selling all sorts of prepared meals, fresh seafood, and exotic produce. Undoubtedly property values, including my own, automatically rise without me or my neighbors lifting a finger.

With regard to geologic practice and licensing, when discussing externalities, we usually talk about costs. Here's a troubling example: An owner of a steep hillside lot pays her friend's daughter, a third-year geology undergrad, $300 to comment on geologic conditions with regard to siting a sprawling new house on the lot. An existing landslide on the lot goes unrecognized, gets reactivated when it's toe is cut into for the new house, and helps itself to a piece of an upslope neighbor's house. The damage to the upslope house is an effect that is external to the transaction between the downslope owner and the novice geologist. How is it external? It's external because the damaged upslope neighbor was an unintended and unwilling participant in the endeavor. The market, however, concerns only willing participants. By definition, the market is the set of all exchanges between willing participants. Therefore, the damage to the upslope house is not only external to the transaction in the example, it's also external to the market. One could say that the slope failed, or that the novice geologist failed, or the downslope homeowner was foolish, but it wouldn't make much sense to say that the market failed.

There will always be an amount (a tolerable amount?) of foolishness in people's behavior in general. The market hasn't failed just because foolishness hasn't been reduced to nil or to a level some would judge proper. If the cost of geologic foolishness rises, then

people will demand less of it. This is the universal price–demand relationship. This law doesn't say that foolishness will be eliminated. To come very close to eliminating it, people have to pay a very steep price. Beyond a certain point, the cost becomes prohibitive: it isn't worth it. The huge marginal costs begin to buy only tiny marginal improvements in geologic quality. It becomes foolishness itself to pay such costs. Are you prepared to pay such costs or impose them on others? We've already explored the costs of licensing, and later we'll explore this again.

The Courts

While we can't say that the market has failed in the case of the two neighboring hillside lots, what could be said with pinpoint accuracy is that a sort of crime has occurred (in legal parlance it would be called a tort rather than a crime). The two downslope individuals share responsibility in some proportion for involving an unwilling neighbor in their activities. And involving an individual in some activity against his or her will is a crime (here again is the precept advanced in Chapter 2). It might make some sense to assert that rejecting licensing will lead to a rise in this sort of crime. This shouldn't be the case, however. Government has traditionally taken on the job of fighting crime, and if it is doing its traditional job correctly, this sort of crime or tort will be thwarted.[70] The two downslope parties will be hauled into court and made to pay for the upslope homeowner's damages plus attorney's fees and court fees. They will also have to repair the damage to the downslope property. Altogether, the costs are huge. This should make the pair think twice about committing a similar error in the future and will serve as a lesson to others. This whole process is referred to as internalizing the external costs.

Compare rough order-of-magnitude penalties imposed by courts and those associated with licensing in cases like the preceding one. Say the damaged upslope homeowner wins a $100,000 judgment against the young geologist. If the geologist was insured for this sort of thing, an insurance company might clean up her mess this one time, but she probably won't be able to get any coverage in the future. She could then try to work as a geologist without insurance, but were she to face another similar lawsuit, she would have to face her accusers alone, without the help of an insurance company, and would stand the risk of financial loss, bankruptcy, and ruined credit. All of this creates an imposing disincentive for her to continue working as a geologist. She will also have trouble getting future commissions:

clients may ask her to show a certificate of liability insurance. Lack of insurance is a sign of trouble or grounds for summarily rejecting a contractor. Insurance companies generally want to cover only good risks. The likely outcome is that this would-be practitioner will have to find some other completely different line of work. This is the same outcome as if a licensing board were to revoke her license. In fact, exposing oneself to lawsuits could be a greater disincentive to the practice of geology by the underqualified than is exposing oneself to a charge of unlicensed practice. The penalties for unlicensed practice are relatively small, on the order of a few thousand dollars per incident. Can we conceive of penalties of $100,000 for unlicensed geologic practice? I think we would instinctively consider such a high penalty to be insurmountable and horrific.

There's still the problem, however, of the underqualified geologist making her *initial* mistake. It's by making the initial mistake that the geologist discovers she is underqualified. A lesson is learned, but much damage is done in the process. This is a main issue licensing seeks to address. The courts have no way to directly prevent the initial blunder; rather, the fact that civil courts exist and do their work (only) indirectly deters all blunders.

Curiously, licensing doesn't seem to provide a dramatic improvement in this area either. For the green geologist's initial disaster to occur in the absence of licensing, multiple instances of foolhardiness need to occur simultaneously: a sort of once-in-a-lifetime planetary alignment. The chance of this happening is slim. For all this to happen, the geologist will almost have to be a solo practitioner, working out from under the learning environment and quality-control mechanisms of an established firm. Anyone would be hard pressed to cite a single example of a geologist practicing solo in the beginning of his or her career. When I introduced this scene several paragraphs back, something about it should have struck you as very odd: The central character is a 3rd-year geology undergrad taking on, solo, responsibility for the geological characterization of at least one residential lot. This geologist then has to be foolish or shady enough to ignore the responsibilities she's undertaking and the risks of being named in a lawsuit.

The consumer meanwhile has to be ignorant enough to hire an unknown, unrecommended, young, lone-wolf geologist, without asking him how many projects he has worked on and without asking him to furnish evidence of insurance. The consumer needs to neglect all the basic nongovernmental means (discussed ahead) of checking the qualifications of this geologist. Then, of course, the geologic

disaster has to occur, which itself has a low probability of occurring even if all the other conditions are in place. Even then the courts will still be standing ready to rescue the consumer from his own lack of diligence.

Alternatively, with licensing in place, there will still be ignorant consumers and foolish, shady practitioners. The same ignorant consumer described above will remain ignorant enough to hire a geologist without checking whether he or she is licensed. And the same foolish, shady geologist will probably have no qualms about working without a license or lying about having a license.

The foregoing example with the homeowner and novice geologist almost borders on fraud (except that neither party had a strong intent to deceive). Where fraud is concerned, again, licensing doesn't seem to offer a significant improvement as a deterrent. First, there are already ancient, well-enforced laws on the books against fraud. And second, the charlatan who is so unethical as to go around defrauding consumers probably won't be compelled to stop on account of practice-protection acts. Savit (1990b), a geophysicist, recognized this: "the penalties for fraud far exceed any possible penalties for unlicensed practice."

Licensing proponents contend that licensing is still necessary. The civil courts, they say, are feeble.[71] They don't work nearly as well in practice as they should in theory. Licensing then becomes necessary to shoulder most of the burden or at least to fill certain critical gaps. Tepel (1995, p. 91–92) ably outlines this argument:

> A licensure board can handle complaints far more efficiently and timely and at far less cost to the public (and the professionals involved) than can the courts. Given bulging court calendars and the expense of pursuing litigation, a licensure board would be able to address many complaints that are too small for the citizens to take to court. The licensure board can get the attention of substandard practitioners and improve the quality of their practice by measured, incremental sanctions. ... Licensure boards can take helpful action on cases that the typical consumer would be hard-pressed to find of interest to an attorney. The licensure board can also publicize its enforcement actions through a newsletter or annual report to licensees and thereby efficiently notify the profession of the current practice difficulties. This will certainly lead to improvement in professional practice, something that will not happen if we rely on courts as the only avenue of redress. Minor court cases just don't get much publicity in the profession.

I can even amplify a portion of Tepel's argument. A licensing board can publicize its enforcement actions on its website, easily and efficiently, and interested professionals may access the information easily. I do not yet know of any equivalent way for interested professionals to easily access similar relevant court-enforced actions.[72]

The same (main) courts-are-crummy viewpoint was expressed by Kevin McInerney, a San Diego, California, attorney who has represented consumers in several lawsuits against cemeteries and crematoriums. The State of California licenses such businesses as do about half the states (Smith, 1996a). McInerney, as reported by Rebecca Smith (1996a), said

> The only cop on the beat, for years, was private attorneys with class-action lawsuits ... Because of that, the [cemetery] industry cut corners. Let's face it, it's an industry that does much of its work behind closed doors. But you can't clean up an industry by suing them, because the insurance companies come forward and pick up the tab. What you need is enforcement and prosecution.

But are the courts really so utterly dysfunctional, and can the disciplinary functions of a licensing board really pick up the slack? Let's explore the idea that the courts do work, bearing in mind that the courts are only one component in an array of nonlicensing forces upholding quality.

In the U.S., particularly in California, we have frivolous lawsuits to the point that much litigation amounts to legally sanctioned extortion.[73] In this context, the legal system could be viewed as quite vigorous, perhaps too much so. It's highly doubtful that there are many "cases that the typical consumer would be hard-pressed to find of interest to an attorney" Tepel (1995, p. 92). However, in my experience, there are attorneys who are highly eager to take on cases involving just a few thousand dollars and going upward from there. As a result, it's fairly certain that we practitioners shudder often at the prospect of being involved in litigation, as perhaps it should be. Most of us practitioners, those of us who are conscientious, are quite fearful of being sued. As a result we perform careful work, perhaps even too careful we sometimes think. This shows that the legal system works, at least in the sense that it's one strong factor in maintaining quality. Perhaps one failing of the legal system is that it is too vigorous.

On the other hand, perhaps Tepel is correct, and the legal process is daunting for the small-time consumer who has a dispute with a

professional valued only in the hundreds of dollars. The courts are clogged, and attorneys are expensive and are sometimes unwilling to handle tiny dollar-value cases. (Interestingly, when a licensing board fines a geologist, they tack on substantial fees to recoup their investigation and administrative costs.)

What we have then is a vast difference of opinion almost bordering on paradox: on the one hand, the legal system works too well for many people, and on the other hand, it doesn't work well enough for others. (It seems most things in life are like this.) We could resolve the quandary by just realizing that the legal system has problems — distortions — and simply go on from there. But if at the same time the system works well enough to keep quality high by making most professionals phobic of lawsuits, then it isn't necessary for every consumer to receive complete satisfaction from the legal process in all disputes great and small. Perhaps small-value disputes, which are cited as a justification for licensing, aren't immensely important in the overall scheme of things. Regardless, consumers always have the option of small-claims court. In small-claims court, attorneys are explicitly *excluded* from the proceedings. And thus, the expense of attorneys and the "expense of pursuing litigation" are found wanting as justifications for licensing.[74]

I claim that the courts can and will help sustain adequate overall levels of quality. Courts and law enforcement, with their consumer-protection and civil branches, are prepared to carry out their mission of safeguarding public health, safety, and welfare. (There's that mantra, "public health, safety, and welfare," that advocates trot out as the lodestar of professional licensing.) Some injustices will always remain, unfortunately.[75] The performance of courts is a mixed bag. According to Alan Wolfson et al. (1980), courts are costly inexpert adjudicators and aren't able to fully compensate for deaths; on the other hand, courts have many good features: they key on outcomes, achieve both compensation and deterrence, and generate case law that dynamically changes to reflect norms and procedures in a profession.

Furthermore, we don't need for there to be (1) a direct line of communication between case law and practitioners nor (2) a direct line of deterrence between courts and new geologists. Rulings filter down and make their effects felt through intermediaries. Your company bosses tell you how to operate. Your corporate insurance carrier and corporate legal counsel educate you in how to structure agreements and communicate with clients. Your professional association and network of associates inform you of legal trends.

Before moving on, let's summarize where the above discussion has brought us, up to this point:

- Civil litigation systems and attorneys stand ready, and eager in the case of attorneys, to address disputes of several $1,000 or more, up to near $infinity.
- Some attorneys are available to represent clients in their disputes with professionals down to the level of a few $1,000.
- Small-claims courts are available to adjudicate disputes between consumers and professionals, at a level of several $1,000 and on downward to essentially nil.[76]
- Professional arbitrators and mediators (retired judges generally serve here) are available to resolve disputes.[77]
- The civil courts and small-claims court are designed to assign restitution, i.e., assess fault and make those at fault compensate their victims.
- A licensing board is allowed to levy punishments of (some combination of) fines to a maximum of several $1,000 on a practitioner, a prison sentence, and suspension or loss of license.
- A licensing board lacks a mandate to assess damages or compensate victims.

Consider which of these legal systems — courts plus private arbitrators and mediators versus a licensing board — serves consumers and society better. On the one hand, courts are focused on providing damaged parties with restitution — making one whole again. On the other hand, licensing serves a filtering function and is focused on revenge and deterrence of future negligent practice. Select which should garner greater respect from consumers and create greater fear among professionals.

Let's assume we're of the opinion that courts do have their problems. We could, then, ask Why might the court system have problems? I think this opens up an interesting line of questioning. Could it be because, like licensing, the civil courts are run by government? Can we list many government programs that work well? If government budgets are being cut, do courts get cut while licensing boards remain immune and maintain healthy levels of funding? Are licensing boards somehow immune to the sluggishness and funding issues of government in general? For many reasons, government has little incentive to perform as advertised. Antony Flew (1986) explained that the worthy

mandarins of the civil service "have no ex-officio individual interest in making decisions that are in fact wealth-creating, and they stand to suffer no corresponding domestic loss if, in what is always the rather distant future, their actual decisions turn out to be ruinous." If government isn't successfully getting parties at fault to compensate damaged parties, perhaps we should apply a term like *government failure* to this situation, perhaps a fitting reversal on the notion of market failure.[78]

What we need to ask, then, is this: If the courts have performance problems rooted in their being an arm of government, then why should we expect a licensing board, which is just another arm of government, to perform any better? Daniel Hogan (1983) documented a trend of disturbingly sluggish disciplinary actions taken against attorneys in the U.S. Young (1987) summarized the poor disciplinary record of licensing boards in general. Members of the geology profession also have recognized that there is much room for improvement in enforcement by licensing boards. According to Tepel (1995, p. 85),

> Enforcement activities by almost all geology licensure boards in recent years can be most charitably characterized as lacking in commitment, authorization, support, and funding. This is not particularly the fault of the boards, but is a result of poorly drafted enabling legislation, cumbersome state budgeting systems, and lack of support from professional associations that should be concerned about professional practice standards. Throughout their history, engineering boards have faced a suite of enforcement frustrations documented by Curtis (1988) that geology boards will find all too familiar.

On the one hand, discipline by a licensing board works in theory; in practice the performance of boards in general has been less than stellar. Bureaucratic chicanery and bumbling are almost inevitable in a licensing board, it being a political animal.

Events involving the California cemetery board documented by Smith (1996a) provide one example. In January 1995, the California legislature temporarily cut off funding to the state cemetery board in an attempt to force it to merge with another board. Funding was restored 2 months later. Soon afterward, faced with an escalating scandal in the relationship between California's licensed cemeteries and the cemetery board, the department with oversight, the Department of Consumer Affairs, stepped in, not to expose wrongdoing but

to gain control and stanch the flow of embarrassing news. In October 1995, the bankrupt and beleaguered cemetery board voted itself out of power. Marjorie Berte, the director of Consumer Affairs, testified in a hearing about that same time that hundreds of consumer complaints to the cemetery board went unanswered, licensing records were in shambles, and several months' worth of license exams went ungraded.

Though somewhat tangential to the discussion, I recall that when I took the California exams to become a registered geologist and certified engineering geologist, the exams were held in October. The results weren't made known until the following April — a lag of 6 months. In addition, the exam was offered only once per year at that time.

Some 23 years later, at about the time of this writing, the P.G. (professional geologist) licensing exam was being offered once every 6, 12, or 18 months (Anonymous, 2011a), depending on your luck or timing and how much you relish the idea of traveling 7 or 700 miles by car or air to either of the two exam sites in southern or northern California. The exams for the titles *geophysicist*, *engineering geologist*, and *hydrogeologist* are only offered once per year, in one location only, and your logistical issues are more or less the same. Though barely tolerable, such inaction doesn't show us a nimble, efficient, responsive licensing board with a high degree of concern for a newly minted geologist who wishes to know whether they have permission to practice their trade or for consumers who would like access to qualified geologists. Administrators do only what suits themselves. One has reason to wonder whether a licensing board in general will perform well any of the tasks it assumes.

Weeds, Flowers, the Straw Man, and Markets and Asymmetries

I think that when proponents of licensing cite purported market failures and externalities to justify licensing, it stems from, or exploits in others, a fundamental confusion. The following two conditions are being confused: (1) a lack of any or all controls or standards whatsoever and (2) a lack of only *prior-restraint* standards. Much of the argument for licensing is based on a belief that without licensing there would be (Condition 1) no control or standards whatsoever on geologic practice, a sort of extreme *caveat emptor* condition, a Hobbesian state of nature. Such a characterization borders on fear mongering. In truth, eliminating licensing would only — watch this now — eliminate licensing. It would give us only (Condition 2) no forcible prior-re-

straint standards, which is what licensing is. To eliminate licensing won't necessarily lead to (Condition 1) a lack of any controls whatsoever.

I tried, in brief, to explain this distinction (Groffie, 1994). Several other writers have explained that there are many powerful controls on professional behavior aside from state licensing. Such controls may be assigned to three broad categories: (1) the professional's desire to protect his or her reputation, (2) information surrogates and intermediaries, and (3) criminal and civil courts. We've already explored the role of the courts. Under the headings of reputation and market information, we can list such things as repeat purchasing; information provided by expert third parties, for example companies, friends, relatives, and neighbors; and inferences drawn from the length of life of firms, brand names, advertising, and warranties (Young, 1987). Consumers and the information available to them are more like sturdy weeds than the delicate, wilting flowers as some people would depict them.

Permit me a short digression, too long to put in a footnote and only tangentially related to professional licensing, but fun and illustrative nonetheless. Consider the electromagnetic broadcast spectrum: television and radio. Presumably, federal government subsidies are needed to maintain a minimum level of proper political discourse, education, and dissemination of news by way of PBS (the Public Broadcasting System) and NPR (National Public Radio). In the last 3 or 4 decades, there has been sporadic talk of pulling these entities off the federal fiscal teat. Leftists[79] shriek that someone wants to "kill Bert & Ernie and Big Bird." No, answer others. These are simply cherished performance characters that one could never eradicate. They will live on wherever and whenever someone wants to watch them. Some 900 cable channels and 800 satellite channels stream out a wide range of quality programming and gibberish 24/7. Surely Cookie Monster and Tavis Smiley could find a home somewhere among them if transplanted from their current luxuriant greenhouse conditions into a natural (commercial) environment.[80] I, for one, would continue to tune in to Charlie Rose and his pundit guests whenever convenient. We now return to our regular programming in progress.

Perhaps the primary argument from economics in favor of licensing concerns asymmetrical information. Economists use this term to refer to the situation where one party to a transaction has more information about a situation than another. The typical case is one in which a seller has better information about a product than does the buyer. And perhaps the seminal study using asymmetrical information in support of government involvement is that by George Akerlof (1970).[81] According

to this theory, there is an asymmetry in the possession of information between buyer and seller in certain markets, including the markets for physicians and used cars.

The market for geologists is another that could fit the theory. The consumer of geologic services knows less than the geologist about the exact quality of the geologist's services. The geologist could be an excellent or poor geologist without the consumer knowing. Therefore, following Akerlof's line of reasoning, all geologists must charge about the same fees, reflecting the average quality of geologic services. The better geologists are uncomfortable with this situation. Many leave this particular market to pursue opportunities where their superior efforts will command satisfactory compensation. The average level of quality then moves lower. Other geologists, finding no benefit to offering above-average quality, reduce their levels of effort, quality, and fees to match the average. These behaviors reduce the average quality of geologic services again, fees fall again, and the stage is then set for further erosion of high-quality services. Again, of course, superior practitioners flee for greener pastures. Through this self-amplifying cyclical process "the market may degenerate until only quacks are practicing," as Leland (1979) phrased it. The resulting quality level would be socially suboptimal, to put it lightly. One conclusion, according to adherents of the theory, is that government licensing, in spite of its known costs, is a viable means for averting this quality deterioration.[82]

It's all rather reminiscent of Keynes' (1964) well-received, gloomy (and now largely defunct) theory of the 1930s that a market economy lacks any safety mechanism to prevent a tailspin into a permanent depression. Keynes's nonmarket prescription, of course, was deficit government spending — Keynesianism. Oddly, the best example of a tailspin into chronic depression and famine seen today is in a very "safe", very centrally planned North Korea.[83]

The quacks theory has a certain intuitive plausibility. And yet intuition and our own personal experiences tell us the opposite also. We are hard pressed — out of all the hundreds of markets we are involved in daily — to point to a market where only quacks practice. The reason is there are numerous ways in which markets are stopped from devolving into a fetid pond of quacks. Consumers indeed have ways to identify and choose quality in complex products without government help. Akerlof's theory is indeed odd. If true, the theory would mean there could be no knowledge-intensive slots in the work-force for intelligent people. Those better geologists who couldn't tolerate Akerlof's devolving market — where did they go? What

ascending or stable market drew them away? The most likely draw would be a market that valued their superior abilities. Yet Akerlof's theory denies the possible existence of such markets.

> Job Seeker, late 1970s: I have this cool idea for a computer.
> Akerlof: Well?
> Job S.: Well, it has this color graphical user interface. And look at the screen, what you see is what you get. And check out the mouse.
> Akerlof: So, what?
> Job S.: Practically anyone can use it, easily. It's cool.
> Akerlof (speaking for the entire world): Bah! Humbug. I don't understand what's happening in that box of yours. No one will appreciate such a contraption. Go pound salt.

Such a conversation never occurred, of course. Yet Akerlof might be adamant that this is an accurate description of the way the world works despite the fact that Jobs and Wozniak found ways around Akerlof's roadblock. Akerlof's (1970) theory says there's no incentive to be anything but a quack. This leaves no explanation for why standards of living have been able to increase (rather than spiral downward) for so many decades and centuries with so few interruptions.[84]

It's because the market does help consumers make good choices that we enjoy products and services that go way beyond minimum requirements. Volvo once touted its superior safety engineering; now, all car makers produce cars that are vastly safer than the Volvos of a few decades ago.[85] U.S. consumers buy vast amounts of bottled drinking water because they perceive it as a better, safer product than what comes out of their tap (and yet tap water is tightly regulated by government).[86] I'm, of course, writing this on a computer, an immensely complex consumer product. Much of my research data has come to me by way of the web and databases maintained by private institutions.[87] In spite of a formal education in science, I know next to nothing about how my computer was made or how it works, yet, curiously, I and other buyers were able to buy our computers and use them with a high degree of satisfaction, all with negligible government involvement.

We instinctively feel that name brands — say BMW, Apple, Advil, Tylenol, Kirkland — and the similar reputations that professionals guard are important in economic transactions and quality. There are bountiful research data and discussions confirming exactly how important such branding is to consumers. A useful report on the topic

of reputation — in the context of organic farming, interestingly — by journalist Aleta Watson (2002) appeared in the popular press. Watson interviewed organic farmers and chefs. What she found is that growers depend on their reputations when selling their produce despite any state (government, official) organic certifications. As you read this, try for yourself to draw parallels between organic farming and geologic practice:

> Rick and Kristie Knoll … quietly relinquished the organic certification they once prized. … They are the mavericks who challenged conventional agricultural practices when they began farming and now say federal standards are too bureaucratic and don't go far enough. The term *organic*, they argue, no longer represents family farmers trying to provide healthy and nutritious food while protecting the environment. … "There's an epidemic of dissatisfaction with the federal government taking over the word *organic*." … The new rules require … forms on everything from their land history and what seeds they plant to how they manage their soil and control their pests. Each crop has to be tracked from planting to harvest. "They want to know yields." … "It's just an endless amount of detail." ... Rick Knoll and others … don't want to separate organic farming practices from social and ecological causes — from saving small farms and promoting locally grown foods to protecting wildlife habitat. And they bristle at federal rules that allow chlorine rinses on salad greens, no-soil hydroponics, food additives and ultra-pasteurization of organic products. … He finds himself at the forefront of a new movement known as "beyond organic" …
>
> The reputation they've built is one reason the Knolls have been able to drop certification without losing business from the restaurants that are now their primary market. They sell to Chez Panisse … and others that place a premium on top-quality produce and trust their farming practices … "I've known Rick for a very long time," says Russell Moore, co-chef at Chez Panisse Café … He buys only organically grown produce but doesn't really care whether it's certified, just that it's good. He's willing to trust that the farmers he knows are farming organically. "I find that a lot of people you develop a relationship with would have a hard time lying to your face."

Hoose and Tepel (1990) said, with obvious disdain, that "economists make the presumption that the consumer is fully able to differentiate between the quality of services or goods and will choose the best for

the price, according to their needs." This doesn't accurately describe the assumption economists make: economists don't assume that the consumer is *fully* able to differentiate. But inserting the term *fully* sets up a handy straw man to flail at. Because if economic assumptions were indeed based on *full* consumer knowledge of products, then any arguments based on such assumptions could be hammered easily, since we readily understand that consumers practically never fully know a product. If consumers fully understood the making of products, then they would be making them themselves rather than buying them from someone else. "At last report, omniscience was still a virtue denied to mortals" (Paul Heyne, 1994, p. 22).

Therein lies a point worth emphasizing: If you or I, or consumers, or anyone or everyone were to fully understand the making of products, then we would be fixing our own vacuum-tube radios, assembling our own Model Ts, forging our own plows, grinding our own barley, raising our own hogs and chickens, and weaving our own clothing rather than buying things from one another. Or bartering with each other. And we would allow for no fractional-reserve banking — this powerful, recent development is also too difficult for many to understand[88] — or lending at interest. Note how this discussion, which assumes that we all hold perfect information about everything, rapidly moves us backward in time to 7,000 B.C.E and in a downward spiral toward widespread poverty.

Readers are probably among the 6.99 billion or so who have at least some contact with so-called advanced society. (Most of the remainder enjoy a close relationship with their environment in the far north or near the equator: e.g., the Inuit or the indigenous of Amazonia or Borneo.) We the "advanced" enjoy our status because of job specialization. Some of us grow lettuce and kale. Some of us raise sheep and goats. Some of us string electrical wires between cities. Some of us nurse and heal the sick among these farmers, ranchers, and linemen. Some of us (geologists) help all these people find geologically safe places to site their houses. Some among us develop Ipads and apps and entertainment content so we can enjoy our time off within our homes. Some of us man perimeter fences and weapons systems to afford security from hostile influences. Many among us deliver counseling, spiritual uplift, and food and meals for those in urgent need. We all serve some specialized role. If licensing advocates have a role to play, it might be likened to the tossing of an ancient wrench haphazardly into this machinery of specialization.

> Ye who have come thus far without us: halt ye now! Ye now need us to tell ye which potatoes and cattle shall be sold, which healers shall heal the afflicted, which great air ship of yours shall transport ye and kin from Athens to Alexandria, and which engineers shall build thy house. Any who trusts in one's brother manufacturer or builder is foresaken. He who believes he may buy from another without expert help from the angels and the prophets is likewise foresaken. He who believes he can buy from another and fully knows what he buys is but a man of straw. Indeed! Cast off thy ways! Thou amongst ye who grows thine own oats, removes from thyself thine own lung tumor, or builds thine own Lexus or other carriage is indeed blessed.

The works of numerous economists have helped the straw man, the proverbial (nonexistent) fully informed consumer, find his strength.[89] Jacques Crémer and Fahad Khalil (1993) concluded that there is no asymmetry in the distribution of information but rather an asymmetry in the ease of gathering it. Furthermore, they showed that at equilibrium, there is no asymmetry in the amount of information held by the parties to a contract. A study by Benjamin Klein and Keith Leffler (1981) suggested that if consumers can obtain information *of any sort*, the market can support high quality. There's an assumption (correct) that producers need repeat business in order to recoup their sunken capital costs and that producers know they need to offer high quality if they're to get repeat business. In other words, the magnitude of sunk costs are proportional to the potential opportunity costs to a firm if it cheats and there is termination of future exchange. Consumers are aware of this also (though they're largely unconscious of it or can't articulate it). Consumers, then, look for evidence of extensive sunk costs as surrogate information, as indirect evidence of quality. As examples, Klein and Leffler (1981) listed such peculiar things as luxurious storefronts and ornate displays, which might not yield direct consumer benefits but indirectly help inform consumers of quality. Advertising, trademarks, logos, guarantees, and reasonably healthy prices are other examples of such information.[90]

Leffler (1980) explained that repeat purchasing comprises all situations in which a favorable consumption experience by one consumer influences a supplier's future demand. This results from exchanges of information among consumers or between intermediaries and consumers. "Hence the notion of repeat sales is applicable even to one-time purchases (such as appendectomies)."

Richard Kihlstrom and Leonard Mirman (1975) applied a great deal of higher mathematics and Bayesian probability to the question

of information, prices, and quality. One of their conclusions was that "In situations where prices accurately transmit the information acted on by experienced buyers, uninformed consumers are justified in using prices as a measure of product quality. [We] specify conditions which guarantee that market prices are an accurate reflection of the informed buyer's knowledge." This could mean that the information generated through the buying choices of experienced buyers of geologic services (such as big-wheel developers, petroleum companies, and other large firms) can help inexperienced consumers of geologic services make good choices. The small-time consumer gets to piggyback on the knowledge of the big boys and becomes a proverbial free-rider of sorts. Paul Milgrom (1981) investigated the effects of information and quality in competitive bidding. In this context, he concluded that "Prices vary directly with underlying qualities. Higher prices indicate better quality. There is no tension between the informational efficiency of prices, the incentive to gather information, and the possibility of reaching an equilibrium." Other studies that look favorably on adaptations to imperfect information include those by Bagwell (1991), Bagwell and Riordan (1991), Bester (1993), Riordan (1984, 1986), Rogerson (1988), and Wolinsky (1983).

Franchising is another market tool that makes heavy use of these mechanisms. Franchising helps consumers pool information from sales of seemingly disparate sellers. When consumers enter a franchise outlet, for example McDonald's, they can reasonably expect to get the same level of quality they've received from other outlets in the same chain separated by thousands of miles.

Companies are often overlooked as a source of quality control. The word *company* is derived from the Latin roots for *together with* and *bread*: a company is a circle of associates who break bread together. And in ancient times, as now, we are judged by the company we keep. Few companies want the liability of or want their names sullied by the unethical behavior or substandard work of their workers. In my experience, most companies go to exorbitant lengths to ensure that qualified people are hired, assignments are given only to qualified (usually overqualified) workers, work is closely supervised, and reports are reviewed carefully by multiple people in specialized disciplines. I've found the quality control and control of individual professional judgment in corporate settings to be quite healthy, perhaps too much so, on many occasions. Gross (1978) reasoned that companies, or institutions, provide enough quality control to render licensing unnecessary. His reasoning stemmed from the observation that profes-

sionals who generally work in institutional settings, e.g., professors, dieticians, and librarians, are generally unlicensed.

I closely observed a *spectacular* example of a geologist who worked for a time (and might still be doing so somewhere) under false claims of having multiple licenses, multiple degrees, and ambitions for even greater imaginary achievements. One day, his fraudulent claims (licenses et al.) were exposed. He then spent hours being grilled by his supervisor in a conference room behind closed sliding glass doors. He was then fired. I observed these proceedings transpire over the better part of a day. Soon thereafter, several of his coworkers, myself included, were sent on missions to double-check his work, both in the field and in the reports he had prepared. Senior managers eventually concluded that the bulk (or all, for all I know) of this geologist's work was adequate. That opinion wasn't one that I helped generate. I do offer this opinion, though: his work up to that point had been adequate because he worked under the quality control of good professionals in a good company. His principle transgression was the lie regarding the licenses.[91] Licensing, in this instance, provided no assistance.

Companies can also serve as a work-around. Consider this case history: An engineering geologist works for many years in the profession, luckily for him, in an environment of a single small consulting company. The state licensing board strips him of his license late in his career. His company retains him in a well-paid, senior managerial role. This may have occurred because he was a senior partner or because he was well respected by clients or his peers within the company or some combination thereof. He thereafter participated in many geologic investigations, may have even overseen such investigations, and served in managerial roles such as hiring and firing, evaluating and promoting employees, setting pay rates and bonuses, interfacing with clients, and delegating assignments. To be sure, some other licensed professional within the firm — an old buddy — signed off on the projects he managed and the reports he prepared thereafter for the benefit of any peer reviewer of such reports. But for all practical purposes, this defrocked, unlicensed professional worked *de facto* as a respected senior professional. In this case, my observations were gained from a more-distant vantage point: different company, a few first-hand observations, second-hand reports from an internal source, and geographic separation of 12 miles. And, again, a corporate environment filled with competent professionals served in an insulating role, and licensing showed itself to be ineffectual.

An important source of information for consumers is information available from intermediaries, or expert third parties. *Consumer Reports* magazine and the Samurai case are a notable example. Suzuki Motor Corp. produced an automobile called the Samurai. The Suzuki Samurai is an inexpensive, small, two-door, four-wheel-drive vehicle. Accusations that Samurais tip over too easily were first made in a July 1988 story published in *Consumer Reports*. *Consumer Reports* is a popular, long-lived, privately produced periodical bought by consumers to aid them in making informed buying decisions. It reports on the results of product tests and gives ratings. It accepts no advertising, to avoid any potential conflict of interest. Suzuki Motor Corp. sold 77,493 Samurais in the 1988 model year. The following year after the story in *Consumer Reports*, U.S. sales of the Samurai fell to 1,435 (Anonymous, 1996f), a decrease of 98%. The car was soon thereafter discontinued in the U.S.[92] Other consumer-oriented magazines also rate automobiles, including *Motor Trend* and *Car and Driver*. Automobile manufacturers seem to consider the ratings data generated by J.D. Powers & Associates to be crucial to their marketing success.

Trade unions can serve a similar function, although they exist partly because of government supports and they tend to come with a whole set of problems of their own.[93] From my own experience in carpentry and steel fabrication, I recall that becoming a union journeyman (a rank I didn't attain) involved weeks of classroom instruction and years of apprenticeship with gradually increasing levels of responsibility. An AFL–CIO representative, an electrician, once confirmed for me that many trade unions including his own train their workers in this way. Unions do this so that an employer calling a union hiring hall will get a true tradesman and not an impostor. In many industries, union workers are known to be the better-quality workers. Therefore, a union card is something consumers can check as an indication of quality.

Milton Friedman (1962) devoted a chapter of his 1962 book to licensing of professionals. In it, he listed several ways for information about quality to reach consumers. Technical schools, colleges, and universities certify the quality of their graduates. One function of retailers and department stores is to stand behind the quality of the many items they sell. The consumer develops confidence in the store, and the store in turn has an incentive to earn this confidence by investigating the quality of the items it sells. Group practice by physicians is another good quality-control mechanism and an alternative to licensing in medicine.

> Being long-lived and immobile, they [doctors] would have a great interest in establishing a reputation for reliability and quality. For the same reason, consumers would get to know their reputation. They [medical partnerships] would have the specialized skill to judge the quality of physicians; indeed they would be the agent of the consumer in doing so, as the department store is now for many a product. In addition, they could organize medical care efficiently, combining medical men of different degrees of skill and training, using technicians with limited training for tasks for which they were suited … The reader can add further flourishes for himself … [Friedman, 1962, p. 159].

With a flourish of his own, Friedman, just one page earlier (p. 158) bravely stated: "I conclude that licensure should be eliminated as a requirement for the practice of medicine."

There are several other examples of intermediaries that we come into contact with many times in our lives.[94] The Better Business Bureau is a long-lived organization that collects complaints regarding businesses and makes the information available to consumers. The BBB has managed to survive well into the 21st century, although its role has largely been supplanted by, for example, Angie's List, TripAdvisor, and Yelp. Yelp is now huge; many people rely on it extensively. I've posted a couple of positive Yelp reviews, one for my local veterinarian, who does marvelous work. Underwriter's Laboratory is a private certification firm that allows products to bear its seal for the consumer's benefit if the laboratory is convinced the product is safe. Most of us will remember being reassured many times by the UL symbol on electrical products we have bought and plugged in. If you frequent lumber yards or those big-box home-improvement stores, you've noticed the option of buying certifiably green lumber. Environmentally minded science organizations do the certifying. These certified, tagged forest products from ecologically sensitive harvesting operations have been available in retail markets for some 2 decades now. You can buy certified sustainably harvested seafood that comes packaged with the logo of the Marine Stewardship Council. I recently saw their prominent 5-by-20-inch sign atop a fish freezer case at my local Target, the second-largest discount retailer in the U.S.

Large, publicly held accounting firms report on the finances of other publicly held industrial firms so that stockholders may better appraise the value of their holdings. Bonds get ratings from firms including Standard & Poor's and Moody's. Government-issued bonds are included in this system. This reckoning, though, didn't work well in the

financial debacle of 2008, did it? And we have yet to see how the downgrading of ratings of debt of the United States of America and some European nations will play out.

We individuals ourselves are all on file at one or more of the three national credit reporting agencies: Trans Union, Equifax, and Experian. The credit agencies, which are private firms, collect data on people's creditworthiness and make the information available, for a fee, to others considering extending credit. Credit checks have been run on us when renting apartments, buying houses, and applying for credit cards, car loans, and mortgages. Employers even run credit checks on potential employees just to see what kind of people they are and how they handle their personal finances.

Restaurant guides and movie reviews should be added to this list. Those who would expect buyers to hold perfect information regarding products and services would expect you to have read a book before you purchase it or to have actually seen a movie, play, opera, or concert performance before you even buy a ticket and enjoy the performance. Their expectations are weirdly self cancelling. Despite this, book reviewers and theater critics exist in abundance and perform a highly useful function. These are all familiar examples of privately run mechanisms for providing information between consumers and sellers, regardless whether the sellers are selling products or services.[95]

In fact, economists of late have become so comfortable with the presence of asymmetrical information that some are even finding benefits from it. Helmut Bester (1998) said, "It may happen that consumers benefit from imperfect information about product quality." What imperfect information does, he found, is result in seller agglomeration, or the physical clustering of sellers in close proximity to other sellers. This results in lower shopping costs for consumers. It also results in a larger number of firms entering the market and thus more options.

If we want to read more examples of surprising market solutions in general, and to drive home the point, we would do well to read James Q. Wilson's important book *Bureaucracy* (1989, p. 346–347). Here's a short excerpt:

> Private security firms have more [total] employees than do municipal police departments. … In some states businesses are running prisons. ... At one time private banks issued their own money and nations going to war hired mercenary armies. … Fire-fighting once was done almost exclusively by private firms in this country [the U.S.] and still is done that way in many places in Denmark. (For-profit fire

> departments have staged a modest comeback here: One company now operates fifty fire departments in five states.) Private weather forecasters compete with the National Weather Service. Businesses have been hired to manage Medicare insurance claims, train the unemployed, man naval vessels, and supply inspectors for the agency that verifies Soviet compliance with the treaty banning intermediate-range nuclear weapons. Once parcels were delivered to our homes almost entirely by the U.S. Postal Service; now that function has been largely taken over by private carriers such as UPS. We have national parks and forests run by the Park Service and the Forest Service, but we also have privately owned and managed parks and some environmentalists believe that more private ownership would improve things. In some states, people pressing legal claims are making use of what in effect are private courts: judges and arbitrators hired to settle law suits.

What's left of newspapers is gasping its last breath. Magazines will expire soon thereafter. Television and radio as we know them may follow in a slow-boil death spiral someday. Most new "books" and information will be digital, accessible only by Ipad, Kindle, or similar devices. The U.S. Postal Service is beginning to complain of massive deficits (2011), and may stop Saturday deliveries.[96] It occurred to me recently that printed, fold-up road maps and phone books have essentially disappeared from my life. Then, I said to myself, "well, duh." I'll lament the disappearance of nearly all of these sources of information, except phone books.

The internet, obviously, has taken over these functions of making information available. The internet, though, doesn't require *ubermensch* information gatekeepers in the form of journalistic and literary editors or the FCC. And consumers seem content with the results. If consumers still wish to consume filtered (edited, sanitized, and unconsciously biased) information, they are still very free to obtain it in abundance from traditional media: print, television, and radio journalism.[97]

My point is this: information is ubiquitous. It's ubiquitous because it's easily disseminated now, digitally. When I wonder why my dishwasher doesn't go through its cycles properly, I Google the problem, go online to a parts supplier, order the needed electronic controller or waste-grinder part unit, and view a video of how to do the repair. At the end of the process, I've saved a machine from relegation to the junkheap or saved myself a $259 repair bill (your choice), all for the cost of a $43 part and some of my time. And I get to enjoy a merger of my old-school skills and 21st century technology. When certain in-laws of mine — finicky consumers — want to buy a new TV or car, they spend

countless hours researching their choices by way of print sources and evaluations online. Geologists and engineers and the firms they work for are subject to these same sorts of evaluations posted online, both positive and negative.

There will always be those who develop opposing conclusions regarding the whole idea of markets in general, the information possessed by buyers and sellers (e.g., Lesser and Masson [1975]), and professional practice licensing and certification (e.g., Klee [2013])[98].

However, to cite only Akerlof's economic theory, that consumers can't obtain the necessary knowledge to make informed buying decisions, alone, without expert (government) oversight, clearly will not do. To do this is to ignore an avalanche of evidence to the contrary from economics and from everyday life. It is to practice either selective attention bordering on ignorance, or willful obfuscation. Yet this is what the advocates of geological licensing may have done.

Furthermore, there are, in fact, some interesting twists on the concept of asymmetrical information that work against licensing. Much of the basis for the antiregulation view running through economics today is the charge that bureaucrats cannot amass the widely disseminated *information* present in the market and necessary to allocate labor in the optimal configuration. This was one of the foremost additions to 20th century economics, contributed by Nobel laureate Friedrich Hayek in papers and books in the 1930s and 40s.

John Gray wrote (1989) one of the most well-regarded critiques of the morality of liberalism and capitalism of the last few years. In it (p. 174) he gives one of the best available summaries of Hayek's contention:

> In its most fundamental aspects, the Mises–Hayek argument against the possibility of rational economic calculation under socialism is an epistemological argument. It maintains that the knowledge that the public authority needs for successful economic planning simply is not, and cannot be, available to it. In part, this is because much of that knowledge is local knowledge, knowledge of specific and often fleeting circumstances, which would be prohibitively costly to collect and in all likelihood dated once gathered. But more fundamentally, much of this knowledge is not only local knowledge but tacit knowledge — knowledge embodied in skills and dispositions, stored in customs and practices and expressed in use. ... The idea of market institutions as epistemic

> devices, mechanisms for the generation and transmission of information that would otherwise be available only locally, or not at all, is the central theme of the Austrian economists, that until recently was lost in an Orwellian memory-hold because of its vicissitudes in the history of economic ideas. It has now been recovered, partly because of the failings of dominant macroeconomic paradigms and partly because of a growing knowledge of the disastrous consequences of attempts at central economic planning in command economies.... [S]uppression of market institutions inexorably produces calculational chaos ....

The belief that central planning by experts could amass the necessary information was a noble yet misguided notion probably nurtured most by those observing the rapid progress of industry and science during the Industrial Revolution. The idea was that if engineers and scientists could produce order and abundance from the raw materials provided by nature, then experts should get the same results planning society and the economy. Society and economics seemed to be chaotic and in need of coordination. In reality, they are examples of spontaneous order. More importantly, that order is complex, far too much so for a few technocrats to know how to improve it with a little fine tuning. It runs on exchanges of signals woven into an imponderably intricate web, much like an ecosystem, the human brain, or the weather. A most liberating bit of knowledge is that endearing but overlooked aspect of the market, that it need not be understood for it to work. We as geologists are able to appreciate a little better than engineers that some things are too complex and quirky to ever be fully understood and modeled and controlled, and that there's no great tragedy in that.

Many people hold the opinion that as society and technology become ever more complex, ever more government control and planning are needed. This has things backward. As society becomes more complex, central planning becomes less attractive, if we would come to grips with the knowledge problem that economists point out. As society becomes more complex it becomes increasingly difficult for any central planner to handle the information flow. As people cluster together, it becomes more difficult for a rule-bound, information-deficient central planner to intercede and make all the delicate minute-by-minute personal decisions people need to interact with each other peaceably.[99]

Another turning of the tables on the notion of asymmetrical information involves the gap between what the average consumer

knows and what the individual connected with special interests knows. Special interests are better informed than members of the general public. A special interest group can very precisely gauge when a government policy works to its benefit or detriment by closely monitoring policy decision making. The consumer, on the other hand, sees that a policy has made her worse off but "is unsure whether to blame the government or other forces," according to Susanne Lohmann (1996). As a result, government will favor special interests at the expense of consumers. This is Stigler's (1971) classic economic theory of regulation, known by such names as the "capture model." His model holds that professional groups capture the power of the regulatory apparatus and use it to protect their professions from competition and to raise their income. He says that small groups are cohesive and are adept at collecting funds for lobbying. In contrast, the remaining general population constitutes a very large, noncohesive group; each loses only a fraction of what each member of the small group gains by their manipulation of regulatory power. One example of this effect was demonstrated in an empirical study by Mario Pagliero (2011), in which the capture theory was shown to be functioning well in the U.S. market for entry-level attorneys.

Recent macro events show these forces at work. In the late 20th century and extending to 2006, the U.S. housing market experienced a bubble, which then of course (in 2007–08) burst. As a direct consequence, the U.S. economy slumped into its great recession. Blame is generally placed on some nebulous, unspecified cloud of Wall Street financiers and federal deregulation of financial markets. We could generate much heat by incinerating all the tons of garbage generated and left in public places, and left for others to clean up, by the 2011–12 Occupy movement.

Or, we could, instead, shed light on the topic. Blame for the recent distress in the U.S. economy may accurately be placed on the 2007–08 bust in the housing market, which is a direct consequence of the decades-long *bubble* that preceded it. Causes for this bubble were as follows:

- U.S. federal government policies that pushed highly unusual low-interest, no-interest, negative-amortization, low-down- and no-down-payment mortgages to first-time homebuyers.
- Federal policies that had the quasistate entities Ginnie Mae and Freddie Mac underwriting such mortgages.
- Federal policies promulgated by administrations starting with Carter's (1977–1981) that encouraged one-time renters to buy

homes for which they really weren't qualified, via (for example) "liar loans," in which one lies regarding one's income.

- A Federal Reserve Board that saw little need to use asset prices as a guide to setting interest rates.
- A *zeitgeist* in which home ownership was viewed as some sort of natural right and as something highly desirable. (Homeownership makes one highly inflexible. The current state of "underwater" homes may be a huge factor in the high rate of unemployment and underemployment: owners of houses with an equity-to-debt ratio of less than 1 are unable sell and to move to where jobs may be.)
- A set of legislators (politics as usual) who were eager to exploit the above-mentioned *zeitgeist* and promulgate feel-good policies.[100]

The pattern we should discern is this: politicians satisfy a narrow set of stakeholders and set feel-good policies in motion. Did I say narrow? I should have said "broad set of stakeholders." A large set of marginally qualified homeowners, former renters, were essentially "given" homeownership; and ooh, how votes flowed in the reverse direction, back to the politicians. The result was disaster for the wider society, and society at large hasn't been given the information necessary to learn what went wrong (see Wallison, 2011).[101]

This situation has implications for and parallels with the licensing issue. In licensing, a feel-good policy is extended without regard for unintended consequences. A special interest, for example the medical, engineering, or geology profession, lobbies government for minimum standards to purportedly advance consumer protection. What shall we call everyone else? The general rabble, taxpayers, the proletariat?[102] Let's go with *consumers*. If consumers are made worse off, most don't see it. The costs are distributed over many consumers, while the benefits are concentrated on a small number of practitioners. In short: costs are socialized while benefits are privatized. Some economists would even apply the term *rent seeking* to licensing (Anonymous, various authors, 2012a).[103] Ironically, as licensing seeks to address an externalization of costs associated with substandard geologic services, licensing leaves itself open to charges of the externalization (socialization) of the cost of licensing itself.

Only a minuscule fraction of consumers can discern how geology affects their lives and how it factors into the cost of the shelters they live in and the roads they drive on. Smaller still is the fraction who understand how licensing affects those costs. In contrast, the fraction

of geologists who have some understanding of how licensing positively affects (the incomes and comfort of licensed) geologists will be large.

All this really tells us is who has the critical information on the effects of policy. The capture model doesn't tell us whether a given policy is justified or unjustified. The fact that one person knows more than another doesn't tell us whether the information gets used for good or evil. However, Stigler's (1971) model contains the implicit idea that the motives of special interests are self serving, and the interest group will use its greater knowledge to lobby for policies that favor that group regardless of the true aggregate cost to others. Strictly speaking, we don't know what these motives are, and we would probably do best to examine a policy on its own *prima facie* merits or demerits rather than the motives of its proponents.

However, just to briefly raise some points before going on: In our experience, do interest groups generally lobby for policies that help or harm its members? Is it realistic to expect interest groups, which usually are formed for the purpose of watching out for the interests of its members, to act altruistically? If we suspect or know that licensing proponents are driven by self-serving motives, it then becomes clear that their asymmetrical knowledge of the situation coupled with this motive will tend to drive policies that favor practitioners over consumers.

This all hinges on a big *if*: whether we want to ascribe reptilian motives to people in positions of power. Public-choice theory (e.g., Buchanan and Tullock, 1962), a powerful element of contemporary social science, says that we may do just that. According to Heyne (1994, p. 595), "institutions should not be evaluated on the assumption that angels will run them. It is far more likely that government policies will be controlled by politicians than by angels." The topic of motives is taken up again in Chapter 6.

Seawater and Thirsty Sailors

We're engaged in thinking through whether licensing is efficacious, whether it offers any improvement on the alternatives. We should also examine *how we came to be in* the position that licensing seeks to remedy. When a government program such as licensing is being proposed, we should take the effort to examine the proposition from all angles.

We come to be in this position, this debate, because some geologists offer licensing as an improvement on relying on the civil courts

and markets. But what has caused the courts and market their alleged problems? Could it be that the rise in litigation and the clogging of the courts are fueled by government policies — perhaps the explosion of social programs in the 1960s — that promote the notion that we're all victims of circumstances beyond our control, that someone somewhere owes us for all our misfortunes? Is licensing of attorneys also a factor in the high cost of litigation? Paul Olson (1983) might have suggested just such a relationship in saying that "in our society, the first licensed or credentialed occupations were medicine and law. They are perhaps the most affluent now." There may be an extraordinary irony here. Licensing of geologists is being offered as a remedy to an alleged condition, namely insufficient access to the civil courts, that could be probably caused partly *by* professional licensing — licensing of attorneys. Licensing could be viewed as a hair-of-the-dog, homeopathic, government remedy to distortions that were probably caused by earlier government blunders.

An incisive example of this is provided by events behind the licensing of geologists in California in the middle decades of the 20th century. It's often been said that licensing was instituted in California to solve the mobility problem for geologists created by the various hurdles erected with the patchwork of geologic certification boards in individual cities and counties. I'm not convinced the mobility problem was really the primary factor driving licensing. Something else was at work.

In 1952, the City of Los Angeles promulgated a grading ordinance that mandated geologic input for the first time. This was fortified with another similar act in 1963. Other local jurisdictions were following Los Angeles in step. In 1968, the State of California instituted geological licensing statewide. What we see is modern, hefty grading ordinances being set in place, followed a few years later by licensing.

Is it possible that the grading ordinances created an unprecedented, artificial demand for engineering geologists, a demand that couldn't immediately be filled by well-qualified practitioners? And did these local government actions thereby create ripe conditions for civil engineers, quacks, and charlatans to enter the field and fill the vacuum? Were government officials setting policies without regard for market workings? This passage by Henry Neel (1994), perhaps unwittingly, supplies the answer in the affirmative:

> The sudden demand for engineering geologists created by the Los Angeles building ordinance of 1952 unfortunately produced quite a few "geologists" who were unqualified for the work. ... It was

> recognized that some method must be adopted to assure that geological opinions were expressed by qualified people rather than incompetents. For this reason an Engineering Geologists Qualification Board was established by the City of Los Angeles in 1957.

So, geologists, who were behind the Los Angeles grading ordinances (Alfors et al., 1973), were also partly responsible for the government-induced abnormal market conditions, which led to further distortions in the form of government licensing of geologists. The government's offer of more intervention could be likened to an offer of seawater to a thirsty seafarer. It has been proffered that half of all government actions are of this nature.

Licensing, an offspring of state ineptitude, can also be a parent to the same ineptitude. Many economists have pointed out that one of the main underlying reasons for the problems of high cost and (allegedly) inadequate access to health care in the U.S. is an unwillingness to let market forces operate in the system. In her survey of the effects of the rejection of these forces, Blevins (1995) concluded that important causes of poor health-care delivery are licensing laws and other regulations, which restrict the supply of medical services and cause a state-induced quasi-monopoly in health care. Clark Havighurst (1986) pointed out that professional licensing unnecessarily thwarts consumer preferences and forces them to use highly trained, expensive providers when more moderately priced providers could serve quite well.

We could also add two additional reasons why the cost of medical care in the U.S. is wildly higher than it needs to be: (1) Consumers rarely see or feel the cost of medical care, due to *federal tax policies* (since World War 2) that have encouraged nearly everyone to obtain health care paid in *pre-tax* dollars via insurance in employer-sponsored group medical plans. (2) Doctors order unnecessary tests, scans, and procedures and work under unnecessary protocols and standards (all of which thwart their professionalism, by the way) in fear of hyperactive (and expensive) attorneys and litigation and overly sympathetic juries. The experts who wrote the tax code changes of 70 years ago could be excused for not foreseeing the unintended, troubling economic distortions they helped set in motion, resulting in medical care now eating up some 18% of U.S. gross domestic product. We can sympathize with doctors who do what is only rational given the litigious social environment they work in. However, it's hard to excuse the judges who acquiesce when their courtrooms are used as venues for what is nothing less than legalized extortion. And we can't

let the institution of licensing off the hook: licensing of attorneys undoubtedly raises the fees of attorneys and the cost of litigation in general.

During the rancorous 1994 and 2009–10 debates over health-care reform in the U.S., government could have addressed this entire situation intelligently and wisely. It could have focused on these issues on the supply side of the equation. Instead, the focus has been on the demand side: schemes to force everyone to buy health insurance, schemes to ration health care services, and a national 3.8% tax on home sales to help backfill any fiscal shortfalls. All of it is a prime example of a state nonsolution to a state-caused problem. Perhaps we can even forgive government for its negligence. Government is, to a large extent, us. A good segment of the population, maybe 30%, may be congenitally conditioned to (1) ignore a chain of historical events that has led to present conditions, (2) be unable to imagine consequences more than a short time into the future, (3) do what just feels good, and, (4), most importantly, place its hands on the buttons and levers of government and thereby foist its mindset and ignorance on its neighbors. Another segment, maybe 50%, just wants to ignore history and everything else beyond a radius of a few hundred yards from home, and just raise some kids and fill the family scrapbooks; they, unknowingly, will be swept along with what the previous 30% mentioned earlier decides.

The Alfors Study

Let's return to the history of geologic practice and licensing in southern California. It's relevant for more than one reason. Tepel (1995, p. vi) said that a study of the Los Angeles grading ordinance "demonstrates the value of licensure" of geologists. I've listened as other geologists have repeated this claim.

John Alfors et al. (1973, p. 28–29) presented the study developed from data was gathered by Charles Yelverton and James Slosson. The study focused on damage to houses and associated costs in Los Angeles in the particularly damaging storm season of 1969. Alfors et al. credited an increasingly effective grading ordinance, implemented earlier with the help of qualified geologists, for dramatically reducing landslide damage during the 1969 event. Before 1952, there was no grading ordinance, and little soil engineering and no engineering geology were done. In 1952, a moderate grading ordinance was put into effect requiring soil engineering and minor geologic evaluation. In 1963 a modern grading ordinance was put into effect requiring soil

engineering and engineering geology. The authors compared how hillside houses built during the three periods, pre-1952, 1952–62, and 1963–69, withstood a major storm season in 1969. The 1969 storm damage was priced at an average of $330 per developed hillside lot for those lots built before 1952, $100 per 1952–62 lot, and $17 per 1963–69 lot.[104]

However, according to the study's authors, the additional costs for design, grading, and inspection due to the modern grading ordinance was a total of $1,078 per lot. In other words, the reduction in average damage from $330 to $17 per developed hillside lot was bought at a price of $1,078 per lot, not a particularly good bargain.

Alfors et al. (1973, p. 29) mysteriously conclude their analysis with this statement: "[the] total additional cost of $1,078 per lot [is] about 10 percent of the average losses without control...." Is this to mean that the data can be massaged to show average damage of roughly $11,000 per lot without the mandated grading controls? Careful multiple rereadings of the study reveal nothing to show how the authors could have derived an $11,000 figure from the $330-per-lot damage figure.[105]

Perhaps an assumption the authors used is that the high average pre-ordinance damage figure of $330 is a result of only one storm season, the 1969 season. It's reasonable to expect that during the useful life of a developed lot, it will be buffeted by multiple damaging storms and perhaps also by a damaging earthquake. Therefore, the $330 should probably be thought of as only one component of total damage costs to a developed lot during its useful life. Should the $330, then, be doubled, tripled, quadrupled? Alfors and co-authors gave no hint. If we assume a hillside lot will be damaged by three or four 1969-like grading-related damage events during its lifetime and we triple or quadruple the $330, then the $1,078 spent on the extra grading efforts would seem to pay for itself, roughly. Still, we are left on our own to understand what these authors want us to know, and thus the analysis by the authors is unhelpful.

Furthermore, the authors aren't justified in asserting that the grading ordinance is wholly responsible for the dramatic savings in landslide damage to the newer houses when the 1969 storms hit. If their assertion is indeed wrong and the ordinances didn't cause all the savings (while they did cost a full $1,078), then the ordinance is a poor bargain. The authors aggregate the damage statistics into three multiyear periods separated by the two major changes in grading standards, and present the data in the stepped relationship in Figure 2. This gives the misleading impression that promulgating and then

beefing up the grading ordinance necessarily caused all the decreases in damage. What we see is a sort of the *post-hoc-ergo-propter-hoc* fallacy. Correlation doesn't equal causality.

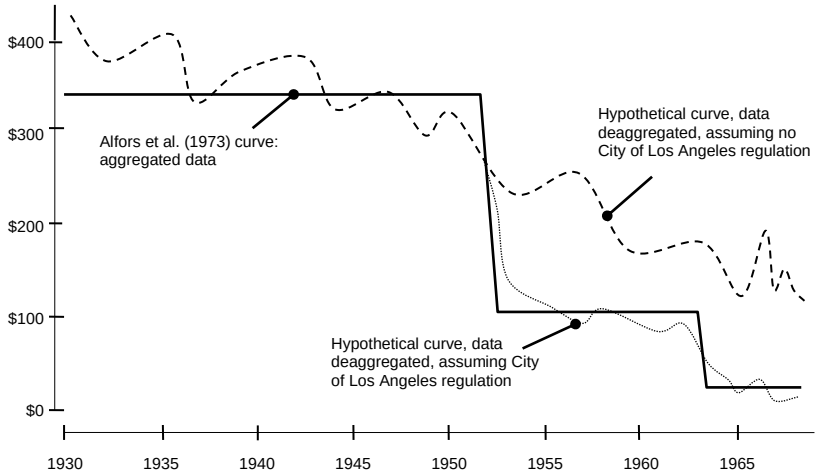

Figure 2. Average damage per lot in Los Angeles from the 1969 storm season versus year of lot development. Note how the aggregation of data from pre1952, 1952 to 1963, and 1963 to 1969 by Alfors et al. (1973) results in the stepped line. If damage data (unavailable) were to be plotted for each year of lot development, the resulting (hypothetical) curves might show downward trends due to nonregulatory factors. Damage figures are expressed in (presumably) nominal 1969 dollars. Choice of 1930 as the first year to plot is arbitrary.

If the data were instead presented in year-to-year figures, they might show a more gradual downward trend, as in the hypothetical irregular curve in Figure 2. The hypothetical "truer" curve shows only a minor causal link between the grading ordinance and damage reduction.[106] Dividing out the data this way in finer, yearly increments would allow us to discern other possible causes for property savings besides the grading ordinance, independent factors that were hidden when Alfors et al. presented their data. It seems highly plausible that such factors yielded significant savings spread throughout property development in the years before 1969. The field of soil engineering was developing throughout that time, receiving a pronounced boost in 1948 from Carl Terzaghi's and Ralph Peck's *Soil Mechanics*. It seems unlikely that all implementation of soil engineering principles were timed to coincide with political actions within the civic chambers of the City of Los Angeles. More likely, engineers were contributing

incremental improvements of their own to the local standard of practice.

And it's quite plausible that developers and homeowners incrementally were gaining an appreciation for the value of soil engineering and engineering geology throughout those years. Alfors et al. listed major storm seasons in 1952 and 1962, which were major thrusts behind first the appearance and then the tightening of the Los Angeles grading ordinance (Spellman, 1990; Neel, 1994). Alfors et al. (1973) also mentioned a heavy storm season in 1957. Other heavy rains undoubtedly fell in the 1920s, 30s, and 40s while Los Angeles saw a heavy population influx. Los Angeles is a young city by worldwide and even American standards. Nearly all its growth took place in the 20th century, and most of that occurred after the motion-picture industry decided the generally benign weather was ideal for moviemaking. The transplanted Easterners and Midwesterners had much to learn — and quickly — about the unfamiliar, tricky hillside conditions in this new, semidesert area. If the storms and landslides of 1952 and 1962 gave the populace enough of a fright to bring about grading codes, it seems plausible that storms and landslides in '62, '57, '52, and earlier years periodically could have given the population enough of a scare to gradually adapt building methods to the local environment. Presumably, developers, homeowners, and their insurers began to avail themselves of some expert advice and common sense and avoid the most obviously risky areas and adopt rudimentary countermeasures. The general rise in living standards in the 20th century, particularly in the 1950s and 1960s, theoretically should have led to gradually better-built houses and better-graded lots, independent of the passing of any ordinances. In addition, the Alfors study shows no evidence of any attention to a variety of other standard procedural measures and pertinent data categories. For example, did the study control for lot size? As people crowded into Los Angeles, wouldn't the smaller sizes of newer lots, by itself, have reduced the average damage to lots? And how did the authors separate grading-related damage from other damage?

None of this criticism aims to make a blanket condemnation of building standards. I haven't presented the proper sorts of data and arguments to confidently do that. Strictly speaking, the only thing I've shown is that the Alfors study, with its many critical gaps, can't be relied on to justify the Los Angeles grading ordinances. If statistical gaps were to be filled in, the grading ordinances might show their full worth in a cost-benefit analysis or might show less than this. To me, the existing data (only) suggest the latter.

Where Building Ordinances Fit In (And Really, They Don't)

A far more important conclusion, one that can be made with confidence, is that the Alfors et al. (1973) study or any study like it, no matter how correct it might be in its conclusions, isn't really capable of lending support to licensing. It concerns *building codes* that mandate geologic input to grading. *It says nothing at all about licensing laws*. While licensing is tightly linked to grading codes politically, legally, and, some seem to think, by logical necessity, the effectiveness of grading codes has little conceptual relevance to the efficacy of licensing.

Even if the Alfors study were somehow correct, and the government-mandated requirements for geologic input to grading plans were cost effective, it still remains open to question how licensing has any significant role to play. If geologic input is mandated, as was begun in Los Angeles, then local building officials are going to review geologic reports and reject the inadequate ones. The adequacy of the geological product is what we're after, isn't it? It's unclear how licensing, scrutinizing the authors of reports, is a great step toward this goal (although we can grant that some geologic work done for consumers doesn't come under the stern gaze of government reviewers, such as water-well construction and site assessments in property transactions). This parallels what Deming (1982) said about quality, as discussed later: statistically measure output, not workers.

Neel's (1994) explanation of events leading to licensing in Los Angeles doesn't make things any clearer. He said "it was recognized that some method must be adopted to assure that geological opinions were expressed by qualified people rather than incompetents" after building officials suddenly began getting a lot of poor reports. Yet, why must this occur? Investigating the qualifications of the writer is only useful if the report reviewer aims to rely on this as a substitute for judging the adequacy of the report on its own merits. To the extent the reviewer does this we could call the reviewer lazy and unscientific — perhaps even incompetent. Thus, the Alfors study could point to yet another irony of licensing: licensing takes the heat off reviewers and just redirects this energy to a hunt for incompetent scientists. (Let's charitably call the reviewers overworked or understaffed, not lazy or incompetent.)

The Alfors study is surely beneficial in that it brings building ordinances into the discussion of licensing. This has us acknowledge a proverbial 800-pound gorilla that, all this time, has been sitting not quite in the middle of the living room but at least in the next room

over. This large beast represents the ordinances requiring geologic investigation, on the books at city and county planning departments and building departments.

Geologists do much of their work for property owners who wish to construct improvements on their properties. Local planning and building departments allow such improvements only after the owner submits a geologic report by a licensed or certified geologist. Licensing is offered as a way to enhance the performance of building ordinances that require input from geologists. Ever-tighter licensing laws are said to be needed in response to ever-tighter building ordinances and construction on increasingly marginal land. Even with title protection (instead of licensing), in which state law leaves consumers in general free to hire any geologist, the large subset of those consumers who interact with local government will still find their hiring choices severely restricted by the fact that local government will accept only reports by state-certified geologists. The very close ties between building ordinances and professional licensing means the effectiveness of the building ordinances deserve some scrutiny also.

I'm not prepared to delve much more deeply into this issue, partly because it's tangential to the discussion and partly because the building ordinances are probably as dear to the hearts of my fellow geologists as geological licensing. But, in concept, it seems likely the same sorts of comparisons of market forces versus state actions I've presented regarding licensing could throw into relief the diseconomics of many building ordinances. The questions surrounding the Alfors study may serve as just one example. Numerous researchers see building standards as unnecessarily restrictive and would like them relaxed so that the poor can more easily afford housing.

This is not to say that geologists and geologic input to construction are worthless. To equate the antilicensing position with an antigeology position is either a confusion or another try at erecting a straw man to flail at. There simply is little or no direct connection between the value of geologic services and the value of licensing. *Non sequitur*; the second does not follow from the first.

The purported products of licensing, i.e., good geologists, are important to having geology done well. However, proving the value of licensing and proving the value of geology are two separate centers of activity. Granted, worker bees, the state-anointed geologists, regularly make the flight from the licensing hive to the flowery field of geologic services. But the proof that a honeybee hive is healthy and functioning properly is usually obtained only by closely examining the hive itself. How vigorously any field of blossoms blooms is another subject. And

how well it is pollinated by an artificial (the licensing) hive or by wild beehives, hummingbirds, bats, butterflies, moths, and mosquitoes is yet another subject entirely. Many other beehives and helpful pollinators exist in the presence of the artificial hive, overlap their activities with it, and stand ready to rapidly take over if it (the artificial one) were to disappear. For millions of years, well before *Homo Sapiens* cultivated bees in those many boxes I see when passing through California's San Joaquin Valley, bees and other flying species of arthropods, birds, and mammals performed their pollination functions well.

Since licensing proponents need much help developing data and positions in support of licensing, I'll toss them a bone to chew on: Farmers plant large tracts of land with crops in great need of insect pollination. Farmers with particular crops need the services of expert beekeepers to set hives of honeybees among the crop fields at critical times. If it weren't for these insect experts, yields would plummet and prices for certain food commodities would rise. Here's how that prolicensing bone crumbles, however: The planting of enormous tracts of monoculture crops is artificial, and the blossoming of these monoculture crops all at once is artificial also. Bees can travel only a few miles from their hive and need help under such artificial conditions. Human construction, scientific–engineering, and quality-control activities have no analogous artificial geographic and transportation limitations.

Dozens of studies of the economics of licensing have been published. In none of these studies that I've reviewed have the researchers tied the purported economic value of, say, medical licensing to the value of medical services. The situation in licensing of geologists, in which Tepel and others try to do something like this, is an oddity. In no known study have researchers tied licensing to any regulation mandating a minimum level of medical services, for example, the requirement that emergency rooms give emergency care to any patient regardless of their ability to pay, or the requirement that mothers be allowed to stay in a hospital a minimum number of days after giving birth, or the requirement that schoolchildren be immunized. These might be the closest health-care legal equivalents to grading codes; undoubtedly there are other analogies. Instead, investigators look at the social costs of professional licensing (of doctors, nurses, electricians, etc.) and compare these to the alternative quality-control mechanisms, something advocates of geological licensing have not done.

The value of licensing will need to be shown, if this can be done, based on a set of tests completely separate from any showing the value of geologic services. (The Alfors study and its faults do yield

this piece of advice: if licensing proponents want to design a study to show the worth of licensing, they will need to avoid the same types of mistakes made by those studying the grading ordinances.)

Once this distinction is understood, it can then be understood that the antilicensing position is one that questions the value of state planners (the licensing board), not geologists. State planners misdirecting the valuable talents and labors of geologists is at the heart of the diseconomics of licensing.

I think licensing proponents generally just put too much faith in a master plan and a Master Planner. Their thinking isn't fundamentally different from that of the creationists in their battle with the evolutionists. The literature by the creationists contains a variety of arguments. One of them is that the wings of an insect or the first eyes in the animal kingdom in the fossil record are far too complex to be explained by evolution. According to creationist thought, a partial eye or partial wing conferred no survival value — more likely the opposite — on the first poor monstrous creatures that may have grown them way back in the Cambrian or Devonian. (And, of course, the creationists won't accept that any such geologic periods existed before a few thousand years ago.).[107] Thus, fully developed versions of wings or eyes couldn't have arisen through natural selection, spontaneously, organically, through small incremental steps and mutations. No, a grand design and a Designer are needed to place an eyed dragonfly and a winged bat species on the Earth, fully developed pretty much in their present form. Geologists to a person will defend Darwinian evolution against such misinformed challenges. Geologists, borrowing findings from their cousin biologists, know that certain genes perform switching functions, tell other genes to turn ubiquitous tetrapod wrist bones into a whale's flippers, and turn a human embryo's gill-like structures into the tiny bones of the inner ear. Likewise, geologists should question why they would place their faith in an omniscient bureaucrat who would rain lightning bolts from the sky when mortal creatures below (we lowly professionals) don't dance and jump to his or her liking.

There is one last confusion held by some licensing supporters in the area of economics. It is this: that proponents of professional freedom think of the market as some magic, snake-oil elixir that cures all ills, and market adherents are somehow mesmerized, by its charms. In fact most adherents of open systems (myself included) soberly understand that, in the Churchillian sense, the market is merely better than the alternatives. There are managers in the private sector who make blunders, and we can think of some public agencies that are well

run. But when comparing statistically valid, sufficiently large samples of both private-sector and state-directed outcomes, the private sector will come out ahead. Indeed, the global laboratory seems to provide good empirical evidence of this in side-by-side comparisons of life in Taiwan and China, the former western and eastern portions of Germany (while East Germany was in the orbit of the Soviet Union), and South Korea and North Korea.[108] Gray (1989, p. 179), summarizing the Austrian school view, put it thusly:

> It is not, indeed, that malinvestment, or waste, will not occur under a regime of full liberal ownership, since the imperfect co-ordination of economic life is an inevitable consequence of limitations in human knowledge, but rather that a decentralized system will promote co-ordination, and eliminate errors in decision-making, better than a centralised system could. This ... is reinforced by the insights ... into the incentive structure of governmental institutions and the consequent lack of any error-elimination mechanism for mistaken allocations of resources.

The Situation Elsewhere

What goes on elsewhere in the world? Here is a summary, a pastiche of factoids for a North American audience (Anonymous, various authors, 2011):

> The term *professional engineer* or *engineer*, has no legal meaning in the UK. … The title *Chartered Engineer* is protected by civil law. However unlike Canada and certain US states, the practice of engineering is not protected in law nor the use of the title *Engineer*. So anyone in the UK can call themselves an engineer, including semi-skilled repair people. … The [title] *European Engineer* (Eur Ing, EUR ING) is an international professional qualification for engineers used in many European countries. The title is granted after successful application to a national member of the European Federation of National Engineering Associations (FEANI), which includes representation from many European countries, including much of the European Union. … Recognition of the qualification and title are generally not specifically incorporated into national law. … In India, engineers with an engineering degree (BE/BTech/ME/MTech) are allowed to practice as consulting engineers. There is no need for any further license or registration with any institution or body.

There is no mention of government-administered licensing or examinations to control who gets to practice engineering or geology. Figure about 2 billion people are covered by the above discussion.[109] Included is much of Europe. Many areas of Europe, need I say, enjoy standards of living surpassing those of Americans.

The Old World may be fascinated by titles much more so than is the New World, e.g., the United States and Canada. A European having earned the right degrees, supervised experience, and vetting by peers will gain a proper professional title. It appears that sporting such a title may give one a *de facto*, as opposed to *de jure*, right to work. Examinations may even be involved. In the U.K., to *call* oneself a *Chartered Engineer*, one needs to pass an exam (Anonymous, various authors, 2011). It may be that exams are much more widely used in Europe to obtain a university degree (and thus a title) than in the U.S. Anyway, those separated by vast oceans from us in the U.S. seem to muddle along, or may be doing quite well, your choice, simply with title regulation rather than a system of state licensing.

From where I write, in the U.S., I daily experience crumbling roads and sagging bridge embankments. Stories of collapsing bridges and depopulating urban centers (Detroit, Cleveland) make the news.[110] There have been published murmurings of letting local paved public roads revert back to gravel for lack of maintenance funding. Try driving the slow lane of Interstate 680, either direction, between Dublin and Fremont, California, without experiencing axle breakage or tire blowout. Slow down, in order to preserve your vehicle's suspension and closely observe the 11-ft-wide, 6-inch-deep ruts where the freeway's 1960s-era concrete has been ground to gravel. Meanwhile, American civil engineers and other infrastructure professionals (geologists, structural engineers, architects) are forced to jump through licensing hoops in order to practice. I don't mean to suggest an arrow of causality from the story of American professional licensing to the gloomy situation of American infrastructure decay.

I *do* wish to report that our (U.S., Canada) systems of government examination and licensing of professionals are highly unusual. It doesn't match with the *laissez faire* system employed by the many highly advanced national economies across the pond. And our unusual system is not necessarily associated with better results in terms of human happiness and flourishing.

Conflicts between the U.S. Constitution and licensing have yielded mixed results. On the one hand, a careful consistent application of certain axiomatic rights enunciated in the constitution would render licensing invalid. A few Supreme Court opinions show glimpses of this possibility. However, the body of constitutional case law has set up no legal obstacles to the key elements of licensing acts, which is partly why licensing laws exist to this day.

4. The U.S. Constitution and Licensing

I think that we should be men first, and subjects afterward. It is not desirable to cultivate a respect for the law, so much as for the right.

HENRY DAVID THOREAU

The science of justice is open to be learned by all men; and it is, in general, so simple and easy to be learned, that there is no need of, and no place for, any man, or body of men, to teach it, declare it, or command it on their own authority.

LYSANDER SPOONER

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The Nature of Constitutional Arguments

This chapter, Chapter 4, begins with a large caveat: I don't find constitutional arguments against licensing to be nearly as attractive as arguments based on economics or ethics.

First, the U.S. Constitution says nothing explicitly about licensing, yea or nay. It's doubtful the constitution's authors were even thinking of licensing when writing any part of it. This could very well be because licensing was largely absent from the political landscape in what was a very free society around the time of the American Revolution (free except for the multitude of slaves). Even licensing of physicians didn't begin until the 19th century. When drafting the constitution, its authors couldn't predict, and therefore didn't struggle with, the many important issues and forces that were to emerge later, for example slavery and states leaving the union unauthorized (cataclysmic tragedy was the result), socialism (another slow-boil cataclysm in the form of the income tax, the dole, and Obamacare[111]), pornography, and practically anything and everything associated with digital media and communication. The constitution's authors tried, but failed, to create a document with sufficient generality that it could handle potential issues that might present themselves.

Second, the courts have indeed heard cases dealing with the conflicts between licensing and the constitution, but essentially none have dealt head on with the question of the constitutionality of licensing per se. Most of the case law is tangential to the main discussion, and much of what we could say on this question wanders off into the realm of the speculative. People tend to have little patience for this.

Third, arguments against licensing from constitutional and related political standpoints, unfortunately, rest within the realm of law. This might seem like an odd statement. Usually when arguing the unconstitutionality of something, one relies steadfastly on the unquestionable bedrock solidity of the U.S. Constitution. If seems if one can invoke the constitution in a debate, it usually ends the matter. To say, instead, that there's an unfortunate aspect to arguing the unconstitutionality of something is to imply that there's something unsound about the bedrock values underpinning the constitution. Rather than being directly on unweathered craton 500 miles from the nearest Holocene fault, we're told we're on shattered, saturated, downslope-dipping Pliocene claystone inches from the North American–Pacific Plate boundary.

Yet this is where one can find oneself when relying on the constitution, because it's merely a law — the most basic, the most revered, the most unchallenged law, yes, but nevertheless simply a law. And it's useful to understand that civil law is *a system*. It's a formal system, like mathematics, chess, or baseball. There's a set of rules one must follow in manipulating the mathematical symbols (or players) and in maintaining their relationships, but as for what values to substitute for the symbols (or athletes to substitute in the field positions), the system doesn't care. The system is only concerned with the form, in the same way that a Jell-O mold is only concerned with the form it puts on the contents and is unconcerned whether the contents are red Jell-O, green Jell-O, or cottage cheese.

Hence, nonsensical or bad laws often arise, such as Prohibition or the order in 1930s Germany that Jews sew the Star of David onto their outer clothing. These laws were the outcome of a legal system, a formal system. But the laws themselves and the people they affect, the contents of the system, can be anything. And any connections between the legal system and ethical principles are, to put it mildly, fragile.

The real weakness arises in that we like to depend on lawyers to tell us what the constitution means and how it applies to any situation. These lawyers are in the form of the nine U.S. Supreme Court justices and other judges at various lower court levels. We use the Supremes as a screen between the constitution and the ethicopolitical principles that inspired it. We simply turn a difficult matter over to a group of wise men and women. This makes our advanced society not all that different from the Aztecs, whose way of life was dictated by priests and shamans. This Emperor's-new-clothes aspect of law applies almost as much to constitutional law as to licensing laws. Both are merely ink on paper.

Tepel, a licensing supporter, gave (1995) a brief but valuable discussion of the constitutionality of licensing of geologists. The conclusion was that title acts have been judged unconstitutional by at least one court, but there is nothing in the cases that have been decided to indicate that practice acts are unconstitutional. This is largely correct. And Tepel's discussion is laudable for being perhaps the most prominent acknowledgment from the prolicensing camp of constitutional questions surrounding licensing.

What appears to be an unfortunate trend, however, is a reliance solely on legal decisions to tell us what is right and wrong. In a practical sense, laws are indeed the biggest factor in what actually is allowed to happen. We can indeed conclude that professional licens-

ing is constitutional as judged by U.S. courts. However, that may be somewhat beside the point. We should give ourselves more of a chance to study how courts explain their rulings. Regardless of a thumbs-up or -down from a court, one may still study particular constitutional amendments, compare them to licensing, and point out apparent clashes and suggest useful questions. The idea that professional advice (including legal and medical) deserves First Amendment protection from government control has been brought up outside the courtroom by others (e.g., Elias, 1993). The Bill of Rights is a short document written in plain language, and most people with a modicum of reasoning ability should be trusted to arrive at their own conclusions if they wish. Unfortunately, some would like to shift the grounds of the discussion from the substantive question, Can we discern any conflicts between licensing and the constitution? to the more formal question, Which way have the courts ruled on the constitutionality of licensing? In the words of Sidney Hook (1980), to look only to expert opinion suffers

> from the questionable assumption that ... unless one knows expertly how to make shoes or soup, he cannot tell whether or where the shoes he wears pinch or whether the soup he eats tastes good .... We are dealing with normal or sane human beings who are not children.

To delve into constitutional arguments for and against licensing is valuable for a few reasons: Some will find them interesting and informative. Others will even find them compelling. Lastly, we seem to think that the constitution may be just slightly more intimately related to bedrock ethicopolitical principles than other laws. It's the country's ultimate and most basic law, after all. And the constitution provides many people with their only familiar access to some of these principles.

A Cautionary First Amendment Tale

What counts as free speech in a constitutional sense shifts from time to time. We need to be aware that speech can often be more than what we think of as conventional speech. For example, computer encryption code, to the consternation of the U.S. federal government, has been ruled to be speech deserving First Amendment protection. In a 1996 decision, a U.S. District Court held that "This court can find no meaningful difference between computer language ... and

German or French. Contrary to [the U.S. Justice Department's] suggestion, the functionality of a language does not make it any less like speech" (Anonymous, 1996e).

Not only does geological licensing prevent unlicensed people from speaking out on geologic matters, it has the potential to prevent licensed individuals from expressing certain (politically incorrect) views on a subject.

Consider the following hypothetical scenario: A licensed geologist, Johnson, has investigated the geology of the site of a proposed residential development. He is ready to prepare his report. Although the site has some bad geologic aspects that cause Johnson serious reservations, on balance he judges that geologic conditions warrant the development assuming precautions are taken. Johnson is aware that a few geologists, looking at the same conditions, might take a more conservative approach and deny their approval, while he estimates that an equal or greater number of his fellow practitioners would arrive at the same conclusion as he. Wisely, he doesn't make any major professional decisions without first imagining how he would sound on the witness stand defending his conclusions in a malpractice suit. Johnson feels confident about this case.

Then he is forced to consider an unusual factor. The development is in a community known for its slow-growth political climate. He becomes aware of the case of another geologist, Aguilar, who studied a neighboring residential site in the same community about 18 months earlier. Aguilar made a similar close call in favor of that particular development. The anti-growth forces in the community then organized and made him a target, seeing him as a vulnerable link in the process of getting the project approved. They questioned his geologic conclusions. They induced the planning department and a sympathetic licensed geologist in the area to question Aguilar's professional judgment. Furthermore, these parties directed the state licensing board's attention to the matter. Aguilar spent considerable effort defending himself against the board's inquiries. The board considered suspending his license, and there were calls from the outside parties to revoke his license. Reason and sound geologic judgment eventually prevailed in the Aguilar case, and his legal status was unharmed, but not after he spent several sleepless nights wondering if he would be forced to find another line of work.

Johnson considers the Aguilar case, which becomes the straw that breaks the camel's back. Fearing the same threat to his livelihood, Johnson decides to censor himself and not express his initial, objective opinion in favor of the development. Johnson's decision now

becomes one of whether to excuse himself from the project or give the project the geologic red light. It's possible, now, that houses will be denied to several hundred people. And a political faction has found a new, regulatory lever, that of professional licensing, or "mob rule," your choice, to squelch a viewpoint it doesn't like. The scenario is fictional. But it has a certain plausibility. This certainly isn't science. It's politics.

Jethro Lieberman (1978) recounted a similar occurrence in the legal profession:

> One of the most stunning examples of this phenomenon occurred in 1966 in Washington, D.C., where Monroe H. Freedman, then a law professor at George Washington University and now dean of Hofstra Law School in New York, happened to give a lecture one afternoon to the Criminal Law Institute, a private non-profit group that was undertaking to train lawyers for the job of representing indigent defendants at trial. Freedman's particular lecture was on the ethics of doing so, and in the course of the lecture he raised several intensely difficult questions, including the problem of condoning perjury by the defendant. Freedman suggested that there might be occasions when it would be proper and necessary to do so. There happened to be a reporter on the metropolitan staff of the Washington Post at the lecture, and the next day a headline appeared in the paper to the effect that Professor Freedman advocated perjury in the criminal courts. Within twenty-four hours Freedman was notified by the grievance committee of the District of Columbia bar association that he was being investigated for possible unethical conduct — not for doing but for speaking out. The proceeding dragged on for about four months and finally, after the national press had picked up the story, sputtered out.

This same sort of phenomenon has been observed exerting subtle political pressure against the news media and their First Amendment rights (Barger, 1994):

> While the First Amendment gives the media organizations considerable discretion and leeway in news coverage and editorializing, they are regulated in countless other ways. The news organizations must remain profitable while dealing with numerous federal and state regulatory bodies. And like major corporations in other lines of business, they are attacked and threatened by interest groups

who enlist politicians as their allies. All of this has a role in shaping the presentation of news.

Earlier (Chapter 3) we saw how the notion of asymmetrical information was used to try to justify government helping buyers make better decisions (Akerlof, 1970; Leland, 1979; also see Olley, 1978). A seductive corollary to this idea is that there's an even greater informational asymmetry involved in the exchange of *information* than in the exchange of tangible products. If one accepts this, along with the belief that government is competent to regulate one type of exchange just as well as the other, then one can be led to believe that government ought to police professors, politicians, pundits, writers of all sorts, and anyone wishing to distribute information, including geologic information. The existence of such a potential distortion of geologic thinking — a threat to free thought and expression and potential subjugation of professional judgment to political machinations — should be disturbing to anyone.

One commentator in the area of speech rights, Adam Powell (1998), had this to share about licensing and the silencing of voices:

> Consider an explicit abuse of the power to license journalists, this one from South Africa 10 years ago, when journalists who opposed apartheid, often grouped under the label "alternative press," were simply refused licenses to report the news. The system was described at a conference of African editors in November by those who'd had firsthand experience with the editors who issued press licenses in the 1980s.
>
> "The alternative press could not get credentials from these 'self-regulating' bodies," said Kanthan Pillay, now managing editor of the daily *Cape Times* of Cape Town. "The overall effect of these regulations on the press was a disaster." When he was challenged by some journalists at the conference, who said journalists should license themselves, just like doctors, Pillay's response drew applause: "The right to express yourself is not part of being a journalist. It is part of being a human being."

Rulings of the U.S. Supreme Court

At least one writer–geologist sees support in the U.S. Constitution for licensing of geologists. Mathewson (1990) said that licensing is "authorized under the police powers granted to government by the people through the Constitution." However, it's unclear where in this document we're to find such a basis for licensing. As said earlier, the

constitution makes no mention of licensing. And the words *police powers* or even the word *police* are nowhere to be found.

To learn more about the powers authorized by the constitution, we'll turn to the written opinions of the Supreme Court justices. Professional licensing in its entirety hasn't, to my knowledge, been directly challenged in a case before the U.S. Supreme Court. Nevertheless, a few cases have been argued in the last few decades that shed some light on the constitutionality of licensing. Obviously, if licensing had been judged unconstitutional then licensing would not exist and there would be little need for me to speak to you. There are court opinions in which the constitutionality of licensing is expressly upheld.

But there are several other court opinions that suggest the unconstitutionality of certain facets of licensing. What has been lacking is a majority of five of the nine Supremes getting behind such an opinion regarding the direct question of licensing.

To find constitutional support for licensing, several writers (e.g., Ira Horowitz, 1980) look all the way back to a decision handed down in 1889, *Dent v. West Virginia*, *129 US 114*. In it, Justice Field's opinion (excerpt below) gave licensing free rein during its modern formative period in the U.S.:

> [It] has been the practice of different states, from time immemorial, to exact in many pursuits a certain degree of skill and learning upon which the community may confidently rely; their possession being generally ascertained upon an examination of parties by competent persons, or inferred from a certificate to them in the form of a diploma or license from an institution established for instruction on the subjects, scientific and otherwise, with which such pursuits have to deal. The nature and extent of the qualifications required must depend primarily upon the judgment of the state as to their necessity. If they are appropriate to the calling or profession, and attainable by reasonable study or application, no objection to their validity can be raised because of their stringency and difficulty.

In the 1960s, however, challenges to government force on grounds of freedom of speech and equal protection began coming with greater frequency. One of the earlier challenges in this vein came in the case of *Ferguson v. Skrupa, 83 U.S. 1028* (1963). Licensing won. Frank Skrupa was doing business as a debt adjuster in Kansas. His occupational activities ran afoul of the law since he lacked membership in the bar. He petitioned the Supreme Court, arguing that this unreason-

able regulation of a lawful business amounted to a violation of the due-process clause of the Fourteenth Amendment. The court, however, ruled that state legislatures may exercise broad powers to experiment with economics, and the court refused to subject the state to supervision at the federal level. Justice Hugo Black wrote, "If the State of Kansas wants to limit debt adjusting to lawyers, the Equal Protection Clause does not forbid it. We also find no merit in the contention that the Fourteenth Amendment is violated."

The case *United Mine Workers of America, District 12 v. Illinois Bar Association No. 33, 389 U.S. 217* (1967) concerned the First Amendment and the method of hiring attorneys. A union hired an attorney on salary and offered his services to its union members. The Illinois bar felt the union was engaging in the unauthorized practice of law. The details of the constitutionality of the hiring method are dull; the broader issues raised are interesting. The Supreme Court found that first amendment considerations (freedom of speech and association) override a state's rights to restrain the method of hiring attorneys. Justice Black, writing the lead opinion, said

> The First Amendment would ... be a hollow promise if it left government free to destroy or erode its guarantees by indirect restraints so long as no law is passed that prohibits free speech, press, petition, or assembly as such. We have therefore repeatedly held that laws which actually affect the exercise of these vital rights cannot be sustained merely because they were enacted for the purpose of dealing with some evil within the State's legislative competence...

However, Justice Black granted "that the States have broad power to regulate the practice of law is, of course, beyond question." In the dissenting opinion Justice John Harlan elaborated on this:

> This decision cuts deeply into one of the most traditional of state concerns, the maintenance of high standards within the state legal profession. I find myself unable to subscribe to it. The Canons of Professional Ethics of the Illinois State Bar Association forbid the unauthorized practice of law by any lay agency. The Illinois Supreme Court, acting in light of these canons and in exercise of its common law power of supervision over the Bar, prohibited the United Mine Workers of America, District 12, from employing a salaried lawyer to represent its members in workmen's compensation actions before the Illinois Industrial Commission. I do not believe that this regulation of the legal profession infringes upon

> the rights of speech, petition, or assembly of the Union's members, assured by the Fourteenth Amendment. As I stated at greater length in my dissenting opinion in NAACP v. Button, 371 U.S. 415, the freedom of expression guaranteed against state interference by the Fourteenth Amendment includes the liberty of individuals not only to speak, but also to unite to make their speech effective. The latter right encompasses the right to join together to obtain judicial redress. However, litigation is more than speech; it is conduct. And the States may reasonably regulate conduct even though it is related to expression. The pivotal point is how these competing interests should be resolved in this instance.... For if an "absolute" approach were adopted, as some members of this Court have from time to time insisted should be so with "First Amendment" cases, and the state interest in regulation given no weight, there would be no apparent reason why, for example, a group might not employ a layman to represent its members in court or before an agency because it felt that his low fee made up for his deficiencies in legal knowledge.

What is most interesting about *United Mine Workers* is that it showed the Supreme Court grappling with the conflict between the First Amendment and state regulation of professional practice. While the court clearly accepted some professional regulation, it suggested that an absolutist interpretation of the First Amendment could pose a serious challenge to licensing. What the court often likes to do, unfortunately, is to dance gingerly around the First Amendment, treating it as not absolute but as one of several competing considerations.

In addition, many people hold the view that speech warrants protection merely because it is critical to the functioning of a democratic form of government. For this reason, commercial speech, including speech uttered for a profit on geologic matters, would be accorded less protection than certain other types of speech. Indeed, the Supreme Court has repeatedly granted commercial speech lesser First Amendment protection than noncommercial speech.

In my opinion, of course, this is a woefully mistaken view, one that fails to see speech not as a means to a narrow, political end but as a sort of end in itself, a basic human right regardless of its role in politics. The right to speech of a political nature is only a special case captured under a more general concept of a complete right to speech.[112] If this is accepted, then all types of speech, including commercial and geological speech need to be granted the same status and protections.

Hackin v. Arizona, 389 U.S. 143 (1967), involved an unlicensed attorney who represented an indigent prisoner at a habeas corpus proceeding. In Arizona, an indigent prisoner has no right to appointed counsel at such a proceeding. After exhaustive efforts to find better representation for the prisoner, the unlicensed attorney provided legal representation and was thus convicted of unauthorized practice of law. His appeal to the Supreme Court was "dismissed for want of a substantial federal question." Justice William O. Douglas dissented:

> The claim that the statute deters constitutionally protected activity is not frivolous. Whether a State, under the guise of protecting its citizens from legal quacks and charlatans, can make criminals of those who, in good faith and for no personal profit, assist the indigent to assert their constitutional rights is a substantial question this Court should answer.

Much more interesting, however, is Justice Douglas's attack on professional licensing from a Fourteenth Amendment standpoint:

> Rights protected by the First Amendment include advocacy and petition for redress of grievances (NAACP v. Button, 371 U.S. 415, 429; Edwards v. South Carolina, 372 U.S. 229, 235), and the Fourteenth Amendment ensures equal justice for the poor in both criminal and civil actions (see Williams v. Shaffer, 385 U.S. 1037 (dissenting opinion)). But to millions of Americans who are indigent and ignorant — and often members of minority groups — these rights are meaningless. They are helpless to assert their rights under the law without assistance. They suffer discrimination in housing and employment, are victimized by shady consumer sales practices, evicted from their homes at the whim of the landlord, denied welfare payments, and endure domestic strife without hope of the legal remedies of divorce, maintenance, or child custody decrees. If true equal protection of the laws is to be realized, an indigent must be able to obtain assistance when he suffers a denial of his rights. Today, this goal is only a goal. Outside the area of criminal proceedings covered by our decisions in Gideon v. Wainwright, 372 U.S. 335, and Douglas v. California, 372 U.S. 353, counsel is seldom available to the indigent. As this Court has recognized, there is a dearth of lawyers who are willing, voluntarily, to take on unprofitable and unpopular causes. NAACP v. Button, 371 U.S. at 443. See also Johnson v. Avery, 252 F.Supp. 783, 784 (D.C.M.D. Tenn.). Some States, aware of the acute

> shortage of lawyers to help the indigent, have utilized the abilities of qualified law students to advise indigents and even to represent them in court in limited circumstances. But where this practice is not sanctioned by law, the student advocate for the poor may be subjected to criminal penalty under broadly drafted statutes prohibiting unauthorized practice of law....

This is novel. Justice Douglas said the Fourteenth Amendment, which guarantees the right to equal protection under the law, makes it crucial that legal services are available to all, including the poor. Yet an acute shortage of legally authorized lawyers (a shortage caused by the legal — licensing — hurdles to become a lawyer?) causes the price of lawyers to be out of reach of the poor. When the poor try to skirt the shortage of lawyers by hiring unlicensed law students, the unlicensed practitioners risk penalties under the licensing laws. This implies that licensing violates the Fourteenth Amendment in that licensing artificially restricts the supply, thereby raising the fees, of licensed attorneys, thereby denying legal protection to a particular segment of the population. Also, there is, again, the suggestion that licensing violates the First Amendment by restricting a person's ability to assert their rights under the law and petition for redress of grievances.

A defender of geological licensing could respond that the implied analogy to geologists fails: attorneys might be needed for persons to assert their rights under the law, such as at court hearings, and these are crucial rights sometimes involving life or death. Geologists do nothing of the sort.

On the contrary, the analogy succeeds. A large proportion of geologists are employed helping property owners fulfill legal requirements set in their path by local building departments. A geologic report is necessary in many areas to convince a building department to let an owner build. If an owner has a legal right to build an addition to her house to shelter a rapidly expanding brood of children if other basic legal requirements are fulfilled, then she should legally be able to get help asserting that right from anyone she chooses. Furthermore, if the law were to recognize that a person has a natural ethical right to erect a shelter, viz., in a Lockean sense, the same as he has a natural right to a fair trial, then it would have to recognize that restricting access to geologic help in asserting that right and raising the price of geologic help are constraints on that natural right.

Law Students Civil Rights Research Council v. Wadmond, 401 U.S. 154 (1971) concerned requirements for admittance to the New York state bar. The bar used fitness requirements involving third-party affidavits

and proof furnished by the applicant that he or she "believe in the form of government of the United States and is loyal to such government." The majority of the Supreme Court held that these screening methods are constitutional. They don't infringe upon the applicant's right to privacy. The rules place no burden of proof on the applicant, and "the form of government" referred to in the application refers solely to the constitution. The screening system shouldn't result in any chilling effect on the exercise of constitutional freedoms.

However, a dissenting opinion was written by Justice Black and joined by Justice Douglas. It's surprising in its tone and emphasis. The viewpoint of Justices Black and Douglas was one in which the right to work is divorced from public-welfare concerns and is made to stand out as something with a special value of its own:

> Of course, I agree that a State may require that applicants and members of the Bar possess the good "character and general fitness requisite for an attorney." But it must be remembered that the right of a lawyer or bar applicant to practice his profession is often more valuable to him than his home, however expensive that home may be. Therefore I think that, when a State seeks to deny an applicant admission or to disbar a lawyer, it must proceed according to the most exacting demands of due process of law. This must mean at least that the right of a lawyer or Bar applicant to practice cannot be left to the mercies of his prospective or present competitors. When it seeks to deprive a person of the right to practice law, a State must accord him the same rights as when it seeks to deprive him of any other property. Perhaps almost anyone would be stunned if a State sought to take away a man's house because he failed to prove his loyalty or refused to answer questions about his political beliefs. But it seems to me that New York is attempting to deprive people of the right to practice law for precisely these reasons, and the Court is approving its actions. Here, the Court upholds a New York law which requires that a Bar applicant not be admitted "unless he shall furnish satisfactory proof" that he "believes in the form of the government of the United States and is loyal to such government." Rule 9406, New York Civil Practice Law and Rules. It also approves certain questions about political associations and beliefs which New York requires all applicants to answer. From these holdings I dissent. Just as a democratic society needs legislators willing and able to criticize national and state policy, so it needs lawyers who will defend unpopular causes and champion unpopular clients.... To force the Bar to become a group of thoroughly orthodox, time-

> serving, government-fearing individuals is to humiliate and degrade it.

This opinion focused most of its disdain on the Bar's requirement that would-be lawyers profess certain political beliefs. However, a secondary thrust was to call out an individual's general right to enter into a profession without restraint from the state or from those already practicing the profession. The problem with someone's right to practice being at "the mercies of his prospective or present competitors" is also interesting. This dissenting opinion began to put the issue in terms of property rights, which can be viewed as the basis for all rights, enunciated in Chapter 2 and mentioned by Groffie (1994). Justices Black and Justice Douglas didn't go all the way with this. At the outset they agreed that the bar may screen applicants. Still, it's possible that if they had carried their understanding of human rights one small step further to its logical conclusion and had convinced three fellow Supreme Court justices to join this opinion, licensing would be in serious trouble from a constitutional standpoint.

In a similar case, *In re Stolar, 401 U.S. 23* (1971), the petitioner, Martin Stolar, a member of the New York Bar, applied for admission to the Ohio Bar. He refused on First and Fifth Amendment grounds to say whether he was a member of any organization that advocates the forcible overthrow of the U.S. government or to list organizations of which he was or had been a member. A 5–4 majority agreed and ruled the Ohio Bar's questions unconstitutional. Justice Black, writing the lead opinion joined by Justices Douglas, Brennan, and Marshall, called the bar's rules relics of the McCarthy era and irrelevant to an attorney's fitness to practice law.

The case *North Dakota Board of Pharmacy v. Snyder's Drug Stores, Inc., 414 U.S. 156* (1973) concerned a pharmacy that was denied a pharmacy operating permit. North Dakota law required that an applicant for a permit be a registered pharmacist in good standing or a corporation or association with the majority of stock owned by a registered pharmacist actively engaged in running the business. The U.S. Supreme Court ruled that the state of North Dakota's pharmacy permitting requirements don't violate the due process clause of the 14th Amendment, and the state was well within its authority to legislate against what it considered to be injurious practices in its internal commercial affairs. In this case, the Supreme Court wished to minimize federal intrusion in state affairs. Snyder's Drug Stores relied on an earlier Supreme Court case, *Liggett Co. v. Baldridge, 278 U.S. 105* (1928), in which it was held that the way a pharmacy was owned can't

have any real or substantive relation to public health, and ownership restrictions are an unreasonable and unnecessary restriction on private business operations. However, Justice Douglas, writing the unanimous opinion of the Supreme Court in *Board of Pharmacy v. Snyder's*, said that the *Liggett* decision "belongs to that vintage of decisions which exalted substantive due process by striking down state legislation which a majority of the Court deemed unwise." Since then, the Court

> has consciously returned closer and closer to the earlier constitution principle that states have power to legislate against what are found to be injurious practices in their internal commercial and business affairs, so long as their laws do not run afoul of some specific federal constitutional prohibition, or of some valid federal law. Under this constitutional doctrine, the due process clause is no longer to be so broadly construed that the Congress and state legislatures are put in a strait jacket when they attempt to suppress business and industrial conditions which they regard as offensive to the public welfare.

Then with some flair, Justice Douglas wrote, "Whether the legislature takes for its textbook Adam Smith, Herbert Spencer, Lord Keynes, or some other is no concern of ours." Exploring the issue of the tensions involved in running a professional business in a competitive market, Justice Douglas wrote, "the divorce between the power of control [of a business] and knowledge is an evil. The selling of drugs and poisons calls for knowledge in a high degree, and Pennsylvania, after enacting a series of other safeguards, has provided that, in that matter, the divorce shall not be allowed." The Court concluded by overruling Liggett, calling it a derelict in the stream of the law.

Ray v. Atlantic Richfield Co., 435 U.S. 151 (1978) concerned a case in Washington State regarding movement of oil tankers in Puget Sound. In *Ray*, the U.S. supreme court allowed for state licensing of pilots of oil tankers in state waters to safeguard vessel safety and the marine environment. The court held that Washington's regulations were not an undue restriction on interstate commerce. As Justice Marshall wrote in a concurring and dissenting opinion, "I would hold that Washington's size regulation does not violate the Commerce Clause. Since water depth and other navigational conditions vary from port to port, local regulation of tanker access — like pilotage and tug requirements, and other harbor and river regulation — is certainly

appropriate, and perhaps even necessary, in the absence of determinative federal action."

State's Rights

We can readily draw analogies from Ray *v. Atlantic Richfield Co.* to geological licensing. Currents and bottom conditions vary from one harbor to the next. Geologic conditions also vary from state to state. Consequently, if a state geologist licensing board were to focus its exam on state-specific geologic conditions, it shouldn't run afoul of the interstate commerce clause of the U.S. Constitution. (However, if a board exam contained few or no state-specific geologic items,[113] wouldn't the exam then constitute a restriction on interstate commerce and run afoul of the U.S. Constitution? I think so.)

One conclusion we can draw from these cases is that the U.S. Supreme Court has given the states broad latitude to administer professional licensing without interference from the federal government. This is the "state's rights" doctrine, that states generally may set their own economic agendas. Case law contains no obstacles to the key elements of licensing acts, which is why licensing exists to this day.

Yet it seems possible that a state supreme court could rule a state licensing law to be in conflict with a state constitution. If such a case then advanced to the U.S. Supreme Court, it might let the ruling stand, citing those same state's rights to order its internal economic affairs. Many state constitutions to one extent or another emulate the U.S. Constitution. A few state constitutions preceded the federal constitution; the federal bill of rights was largely modeled after certain pre-existing state bills of rights (Doherty, 1997). This could mean that state licensing laws are in violation of constitutional rights at the level of the states. And it's conceivable, therefore, that licensing laws could be ruled unconstitutional and eliminated on a state-by-state basis by the respective state courts, with the U.S. Supreme Court staying out of the matter.

There has been a trend, begun in the late 1970s and early 80s, for state courts to consult their own constitutions in extending citizen rights beyond federal Supreme Court precedent (Doherty, 1997).[114] There are now hundreds of recent decisions of this type, and this state constitutionalism is still resurging. This nascent trend represents a reversal of the go-to-the-feds mindset of the 1950s and 60s.

There is also a potential for antitrust action by the Federal Trade Commission (FTC) against state licensing laws. Both Stephen Rubin (1980) and Philip Kissam (1980) concluded that there's hope for FTC

action under *Goldfarb v. Virginia State Bar*, 421 U.S. 773 (1975). Yet, due to the FTC's schizophrenic attitude toward the market, according to Clarkson and Muris (1980), the FTC is unlikely to preempt state licensing laws.

Whether state constitutionalism or FTC intervention will have an impact on state licensing laws is unknown. In either event, we can venture that the likelihood of a large-scale impact is small, given the general reluctance on the part of government officials to think clearly regarding individual rights.

A Noble Calling

Another intriguing possible clash between the constitution and licensing concerns certain sections in Article 1. The founders of the republic in their actions of 2½ centuries ago were reacting to many defects of the Old World order, such as mad kings, taxation without representation, religious persecution, weapons confiscations, and cruel punishment. The authors of the constitution placed many of their checks against such abuses in the Bill of Rights, which are the first ten amendments to the constitution.

Yet people often neglect the main body of the constitution, which outlines the offices and powers of the government but also contains certain protections of individual rights, such as Article 3, Section 2, which guarantees trial by jury. Article 1 also tries to steer the new nation away from taking up one bad sociopolitical habit of the Old World: nobility, or aristocracy. Article 1, Section 9, contains the following clause:

> No Title of Nobility shall be granted by the United States: And no Person holding any Office of Profit or Trust under them, shall, without the Consent of the Congress, accept of any present, Emolument, Office, or Title, of any kind whatever, from any King, Prince, or foreign State.

This clause restricts the power of the federal government. Article 1, Section 10, does the same for the state governments:[115]

> No State shall enter into any Treaty, Alliance, or Confederation; grant Letters of Marque and Reprisal; coin Money; emit Bills of Credit; make any Thing but gold and silver Coin a Tender in Payment of Debts; pass any Bill of Attainder, ex post facto Law, or

> Law impairing the Obligation of Contracts, or grant any *Title of Nobility* [emphasis added].

It would seem valid to explore whether a professional title or license qualifies as a title of nobility, if not in the letter of the law, then perhaps in spirit. The earliest and only raising of this question in my possession is by Sam Aurelius Milam III (1995):

> I believe that privilege, subsidy, etc. are just ways of defining an aristocracy, or a class of nobility. The narrow perception of aristocracy as hereditary is, I believe, in error. Anybody who engages in a privileged activity (doctor, lawyer, driver, beautician, teacher, etc.) participates in an aristocracy that is defined and protected by the government. The protection is through licenses, issued by government, which define the privileged activity and provide for the punishment of intrusions into it by "commoners." These licenses are literal entitlements of privilege, or titles of nobility. Two clauses in the Constitution (Article 1, Section 9, Clause 8, and Article 1, Section 10, Clause 1) prohibit such titles.

This interpretation seems accurate if we observe what certain geologists have expressed regarding professional licensing:

> Some philosophical thinkers recognize that professionals ... should be granted some power and privilege .... It would be folly to maintain that professional registration does not confer at least some semblance of status, power, and turf protection on those registered. ... Can we say anything good about legal recognition of status, power, and turf? If status, power, and turf are conferred by a licensure act, then by implication their limits are also defined. Isn't it a good idea to have these limits? ... [T]he public lacks sufficient knowledge or impetus (barring a catastrophe) to demand licensure with vigor .... Who better to recognize poor practice than the practitioners? Who better to act on behalf of the public in implementing licensure than the professionals ... ? [Tepel, 1995, p. 27–29]

The foregoing excerpt contained the telling phrase "to act on behalf of the public." Yet doesn't acting on behalf of someone require this individual to clearly authorize it? When have we ever seen this? We read few records of instances from preEnlightenment days (antiquity, the medieval era) or from an antebellum U.S. when serfs or slaves acknowledged their nobles and masters to be their genetically

endowed intellectual superiors. We in the 21st century and reaching back to the 20th don't read about consumers authorizing geologists to act on behalf of consumers in deciding who may practice geology and who may not. We don't read about voters sending legislators to their respective state capitols with a clear mandate to enact licensing. The phrase "to act on behalf of the public" becomes even more peculiar if we try to envision why consumers might authorize this. Because, why would a consumer want less choice? This is what licensing does: restrict choices for consumers. Wouldn't consumers be quite content with the state certifying geologists through a title act, or the state forcing geologists to make known their score on a standardized assessment but otherwise allowing consumers choose whom they wish to hire to write reports and then reviewing those reports *on their own merits* regardless of authorship?

Paternalism might be an apt term for much of the prevailing attitude behind licensing. Paternalism in the right amount directed toward one or a few truly helpless young children of one's own, or toward adults with diminished mental capacity, has its proper place in intersubjective relationships (*paternalism* is derived from the Latin root *pater*, or *father*). But paternalism directed by one or a few "leaders" toward thousands or millions of unrelated, unacquainted, generally capable adults, many located hundreds of miles away, in matters that usually don't concern others significantly, is a travesty of immense scope. *Noblesse oblige*, indeed.

Evaluate this paternalistic attitude in light of the meanings of the terms *nobility*, *noble*, and *aristocracy*. The nobility is the body of persons forming the noble class in a country or state. A noble is a person belonging to a small privileged class of high birth or high qualifications. And aristocracy is government by that privileged class. It appears that faint echoes are there between the European aristocracy the American founders were trying to avoid and licensed professionals in the U.S.. Rose (1983) has called licensing a "tyranny of the experts" that smacks of elitism and plutocracy. Consider whether or not the medical profession, with its almost divine power over life and death, has been accorded an almost priestly, shaman-like status by way of its high-level representation in the federal government, the office of the U.S. surgeon general.

The European nobles were marked by a combination of three elements (Brett, 1995). First, noblemen were bound to a king or pope by an oath of fealty, and they themselves had men likewise bound to them. These bonds entailed various obligations, but the performance of military service was the most widespread. Second, this aristocracy

commonly exercised a large measure of judicial, financial, and administrative authority over its dependents. Third, the nobles owned large fractions of the land and maintained themselves through the proceeds of this land.

On this basic level, the similarities between the nobility and the modern professional class aren't readily apparent. Few of us professionals own enormous tracts of land. Certainly the "status, power, and turf" (Tepel, 1995, p. 29) that licensing proponents refer to is the abstract notion of professional turf, not to be confused with actual sod; certainly the professional turf some professionals so dearly wish to hold onto only serves as a poor, abstract, modern-day substitute for the nobleman's vast holdings of the real thing. Another important characteristic of the nobility would appear to make the two classes utterly incompatible: To "live nobly" meant to not work. The nobleman's way of "earning" a living was to get out of bed in the morning. In fact, a nobleman could lose rank by working. In contrast, modern professionals work hard, and professional licensing concerns itself solely *with work* in a profession. Furthermore, nobility typically was gained simply through birth, a feature that has yet to assert itself noticeably in the present-day licensing process.

Nevertheless, land ownership and birthright were not consistently the defining characteristics of the nobility (Brett, 1995). In some places in Europe, the aristocratic preoccupation with birth slowly gave way to titles derived from public functions. In many instances, the nobility was a legally defined elevated class that could be entered through several doors, including military service, commercial success, and begging of favors from the king, and it could mean such socioeconomic favors as official positions and educational privileges. The term *duke* (Latin *dux*), which was widely applied to lords of certain areas, originally meant military commander. It was on the basis of military need that the majority of 10th-century duchies emerged. In Austria, the title implied membership of the highest rank in the social and tenurial scale. The title *count* (Latin *comes*) was the most widespread of such titles originally denoting public office and later social rank. *Comes* originally meant companion or member of the king's household of specially trained warriors. The titles *duke*, *marquis*, and *count* were themselves no necessary guide to relative wealth or prestige, because a few duchies were nearly empty titles. In the 14th century, a number of great merchants in the service of the crown were able to enter the ranks of the nobility. Nobility was often also gained through arranged marriage, a sovereign's favor, or success in war.

A few other writers have caught a whiff of a certain noble European mustiness wafting through the halls of the licensing bureaucracy. R.

Reiff (1974) explained that licensing was associated with the interests of the dominant elite, the church, and aristocracy in Europe. Gross (1978) explained that the guilds, the European forerunners of the American licentiate, maintained a profession's upper-class identification by requiring (or preferring) a period of prolonged university training, training that was unavailable to the lower classes.

Are we stretching this argument past its limits? Perhaps. One could counter that the authors of the constitution were thinking of nobility in its strictest and familiar sense. They were setting up a republic and setting in place all manners of safeguards to prevent government from devolving into monarchy, including such safeguards as the familiar checks and balances between the three main federal branches. The nobility clauses were probably just one more check against aristocracy and monarchy. It's sensible to assume that if the founders wished to ward off guilds or other professional title or practice restrictions, they could have referred to them in just those terms. It wouldn't be the least bit surprising if there never has been nor never will be any constitutional challenge to licensing laws based on the nobility clauses in Article 1.

However, it's wise to keep in mind the general spirit of the constitution. The document, particularly the Bill of Rights, was intended to set up a government that was shackled at the ankles and wrists, that could only serve as a slave to its masters, the people. There was a recognition during the Enlightenment of a general correlation between the improvement of government and the curtailment of noble privilege. Everything we see now is but an echo of the past. With this understanding, and having seen professionals zealously entreat their legislators for licensing along with the titles, power, privilege, status, and turf that come with it, U.S. consumers and thinkers would be wise to take a hint from the Founders and be wary of any legally sanctioned semblance of noble privilege.

Licensing and Other New Words for Old Notions

I'm reminded, at this point, of the little epigraph included at the front of this volume: *All this has happened before. And it will all happen again.* I can't place its source. I heard it many time as an introduction to *Peter Pan* as delivered on audio cassette tape, as in one of those $2 tapes bought in the 1990s that you thrust into your car's tape player to entertain your 3-year-olds on a long car ride. *Peter Pan*, by J.M. Barrie, of course is a classic in English literature. Yet I can't find the line "All this …" in any print edition of *Peter Pan*. It must be something the

audio storyteller inserted. Somehow, it's all fitting. The story of *Peter Pan* and the fact that we read stories to our children and they recycle the stories to tell their children and so on are all timeless. And *all this has happened before, and it will all happen again* is a timeless truth.

- In the place of the older term *guild* we can substitute the newer term *licensed professionals*.
- In place of *guild* we can substitute *the licensing board*.
- In place of *nobility* we could substitute *attorneys*: a majority of political officeholders are lawyers.
- In place of *aristocracy* we could insert Bush 41 and Bush 43. Why, in a nation of over 300 million, purportedly a meritocracy, should a son nearly follow a father as head of state?

Genocide has taken place right under our noses in Rwanda, Africa, (mid 1990s) and Darfur (southern Sudan, Africa, mid 2000s). An attempt at genocide took place in Kosovo, southern Europe, in the late 1990s. NATO, including the participation of our own Bill Clinton,[116] put a stop to what was a human catastrophe and might have widened to something even greater.

In place of the Roman Empire, we could substitute *unipolar world* (1991 to present), or *pax Americana*, or American Empire — shush, please, that term is never uttered in polite company — with its far-flung military bases and alliances.

Slavery exists today. We, in the U.S. in our insular world, believe that the last traces of slavery were eradicated in the 1860s. However, its vestiges still now hold out in pockets in the underdeveloped world. Present-day trafficking in human beings involves false job offers, false migration offers, false marriage offers, sale by family members, intimidation, threats, physical force, and debt bondage. Much of it involves prostitution. Some of this human bondage extends into the borders of the U.S. Certain experts believe that slavery's human toll measured in sheer numbers, some tens of millions, is greater now than at any time in recorded history (Anonymous, various authors, 2012b).

My son was legally required to register for the draft when he hit his 18th birthday a few years ago, as I did a few decades ago. Thanks to historical events (or lack thereof), I've so far escaped any forced call to duty. Still, I am, and he may be, registered for the possibility of taking up arms. My (yours, anyone's) earnings from January through April or May of this or any year are confiscated, in one form or another, by the powers that be.

Most wars are a sort-of repeat of the last one. World War 1 was followed, with only a short interregnum of 20 years, by World War 2. Germany still felt compelled to sort out the injustices forced upon it. The Korean Peninsula still, technically, may be considered in a state of war: the 1954 armistice between the communist, totalitarian, self-tortured north and the capitalist, open, flourishing south was never formally converted to a peace treaty. Iran touts its nuclear power program as devoted to "peaceful purposes," which likely means "we nuke [a certain nearby nation we don't like], and then there will be peace." The next conflict to take center stage will probably be a similar, delayed, patient redress of old grievances. See Appendix B for further thoughts of mine on the topic.

The point of all this discussion is that the terms we use change. Superficialities change. Styles of clothing and art change. The ways in which we relate to one another have even changed somewhat. But in most important ways, human nature has changed very little. Man's inhumanity toward man remains. History goes ignored. People still act like sheep. And great leaders are few and far between.[117]

I'm Not Alone in Asking These Questions

Very recently, George Will (2017) wrote an op-ed piece in which he lists questions that Neil Gorsuch should be asked in his Senate hearings for confirmation as a Supreme Court justice. Interestingly, Will devoted a full *third* of his essay to the (un)constitutionality of licensing:

> … [W]as the [Supreme] court wrong in the 1873 Slaughterhouse Cases? It erased the Privileges and Immunities Clause, holding that it did not secure natural rights (e.g., the right to enter contracts and earn a living), for the protection of which, the Declaration of Independence says, governments are instituted. … Should the Slaughterhouse Cases ruling be revisited?
>
> The court, without warrant from the Constitution's text or history, has divided Americans' liberties between those it deems "fundamental," such as a speech and association, and others, many pertaining to economic activity and the right to earn a living, that are inferior. Abridgments of the latter have been given less exacting judicial scrutiny. The court calls this "rational basis" scrutiny; it should be called "conceivable basis" scrutiny. If a legislature asserts, or the court can imagine, a rational basis for the abridgment, it stands. Do you think judges should decide which liberties to protect? Should courts examine evidence of whether

> economic regulations are related to public health and safety or merely reflect economic interests?
>
> The Ninth Amendment says: "The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people." Robert Bork said this is akin to an "inkblot" on the Constitution that judges should ignore. Do you agree? How can judges be faithful to this amendment? Is the Ninth Amendment pertinent to, say, the right to earn a living free from unreasonable licensure requirements or other barriers to entry?

Occasionally, I will think I've thought of something original. Invariably, a few years later, I find that someone else has already thought of it. Here we see Will, without even intentionally focusing on licensing, throwing several constitutional amendments at it. I'm encouraged.

Licensing substitutes the free play of political forces for the free play of economic forces. Numerous hazards and absurdities are the result. A principle one is that licensing doesn't perform as advertised. It does little to stanch the ugly conflicts that erupt between professions. It advances neither professionalism nor competence in beneficial directions.

5. Other Objections: Professional, Practical, and Political

He [King Charles] has erected a multitude of new Offices, and sent hither swarms of Officers to harass our people and eat out their substance.

U.S. DECLARATION OF INDEPENDENCE

Government is not reason; it is not eloquence. It is force. And force, like fire, is a dangerous servant and a fearful master.

GEORGE WASHINGTON

It seems to be difficult if not impossible for human beings to avoid thinking of government as a mystical entity with a nature and a history all its own. It constitutes for them a creature somehow interposed between themselves and the great flow of cosmic events and they look to it to think for them and to protect them.

H.L. MENCKEN

Quis custodiet ipsos custodes? *Who guards the guardians?*

ROMAN SATIRIST DECIMUS JUNIUS JUVENAL

In this section we'll explore further whether licensing is something we want to do and whether it really takes us where we want to go. This resembles the sort of examination of licensing that sociologists have done, although it's a little too scattershot to fit that mold. The questions to be posed are similar to the questions asked earlier in this book regarding the ethics and economics of licensing. All are variations of the fundamental question, What are the true costs of licensing and are we willing to pay them? Here we ask some more-pragmatic questions and approach them in a more direct way: How does licensing fare in its quest to advance professionalism and advance the profession vis-à-vis other professions? How well, compared to the alternatives, do its mechanisms lead to a better professional product to be put to use by consumers? And how loudly can we applaud the behavior of this creation, licensing, after it is stitched together in committee fashion from the body parts of slain private-sector quality-control mechanisms, sparked to life, and allowed to wander the American landscape?

Rivalry with the Engineers

The placement of geology into a real world where engineering is also practiced is the source of a strong, if not the strongest, impetus for licensing of geologists. Engineering geologists have often felt stepped on by civil engineers. Engineers were licensed before geologists. Engineers greatly outnumber geologists. Engineers run many of the businesses operating in the construction and extraction industries (though this is somewhat a function of the high engineer-to-geologist ratio already mentioned). Spellman (1990) expressed some of these concerns more succinctly and frankly than most:

> If the California [geology] Board is abolished ... the California geologists and geophysicists would be squeezed out of business. For example, geologists would be required to work as employees for registered engineers or registered sanitarians to do much of the same type of work they are doing now as entrepreneurs. Registration provides equality between geologists and other professionals, and helps establish credibility in the court room.

Grover Emrich and Richard Wright (1990) echoed this same complaint regarding working for engineers, fearing "the damage to our

profession and our ability to apply our training and experience directly without filtration through, or supervision by, another profession already recognized by statute." Slayback (1990) contributed this observation:

> Engineers are running the major contamination investigations in this country today. Some are hiring geologists and allowing them to function as they should, but other geologists are handcuffed in the exercise of their professional judgment by their engineer superiors. Even though a project is 95 percent geology, agencies prefer to award it to an engineering firm. Lawyers, who control much of the contamination work for corporations, often understand the value of geologists but prefer to hire engineers for their client's litigation because that P.E. license carries a lot of clout on the witness stand.

E. Paul Hartzell (1990) spoke about the conflicts between engineers, of which he is one, and other professionals as a result of "bad legislation," as he calls it: "A prime example of this is in the State of Pennsylvania where we have been face to face with the soil scientists over questions of geology and engineering. It is difficult for me to understand how a person who knows how to grow carrots and is primarily interested only in the upper soil layer that promotes growth is qualified to do engineering design."

Philley et al. (1990) displayed thinly veiled anger in describing how the lobbying efforts and tactics of the licensed engineers in Kentucky in 1982 and 1986 kept geological licensing legislation bottled up in committee, where it eventually died. The engineers "succeeded in thwarting proposed registration bills by employing well-connected lobbyists, by disseminating misinformation, by adding numerous irrelevant amendments, and by stonewalling any efforts for genuine compromise."

Edward Graham (1990), in describing some of the wrangling between licensed geologists and engineers in Oregon in the 1980s, talked of the so-called gray areas, i.e., areas of practice claimed by both professions. He said (all italics and punctuation from the original) that these gray areas

> were like demilitarized zones: bombed out, blood soaked, burned over wastelands littered with unexploded land mines and untold secret booby traps. "Whoa! Stay out of there man, the *other* board will be all over you!" Of course, you can't have a "DMZ" until *after* a battle. There were battles. Both "professions" (during this

> period, even the use of the term was questionable) attacked each other establishing territorial footholds. The confused public was again the loser. They didn't know who to retain: Is it engineering? Geology? Engineering Geology? Geological Engineering?

The same unprofessional friction occurs between licensed engineers and architects. Their tussle appears to be much more heated than anything between engineers and geologists, judging from the literature published by the engineers (see Anonymous, 1996b). In 1995, the National Society for Professional Engineers (NSPE) asked the U.S. Justice Department to investigate whether architects had violated antitrust law by seeking to restrict consumers' ability to choose a P.E. to design a building. The Justice Department closed that investigation for unspecified reasons. The engineers remained worried. As it turned out, the Justice Department had conducted an investigation on the architectural profession in the early 1990s. And the architects, said the engineers, show no signs of letting up. The top legislative issues faced by the American Institute of Architects in 1996 included legislation in eight states dealing with overlaps between architecture and engineering under state licensing laws. The AIA applauded successful efforts by architects in Arkansas and Delaware opposing the right of licensed professional engineers to design buildings. The NSPE (Anonymous, 1996b) explained why the engineers need to forcefully resist the architects rather than attempt accommodation. The NSPE's repeated attempts at conciliation were rebuffed. In 1993, despite protests from the NSPE, the National Council of Architectural Registration Boards adopted a model architectural licensing law with the goal of putting engineers in a subservient position to architects in designing buildings. In 1994, the NSPE pursued a "truce" with the architects, but architects' challenges didn't stop. The architects, according to accusations by the engineers, have (or had) plans to contact banks and other lending institutions to persuade them that architects rather than engineers should be hired to design buildings.

The engineers felt emboldened by their forceful efforts. They believed they successfully educated the Justice Department on the building design issue. They felt confident that architects would now hesitate to pursue "improper" activities given the "potential consequences."

It would seem that Koogle (1990), an ex-president of the NSPE, phrased it diplomatically when he said to an audience of geologists that

> There have been instances during the past decade where conflicts have developed between practicing engineers and technical specialists who are licensed and engaged in occupations that create a working interface with the historic patterns of engineering practice. There have been instances whereby certain groups have attempted to restrict the practice of engineering by qualified and licensed Professional Engineers. These conflicts are based on the definitions contained in the State Licensing Statutes, and these occurrences have created some considerable difficulties and the establishment of adversarial relationships. It is the belief of NSPE that conflicts of this nature first do not serve the public interest.

Note Koogle's observation that a factor responsible for these heated conflicts is the licensing laws themselves and the recognition that these sorts of conflicts cause restrictions. (Lacking, though, is any recognition that restrictions may cause collateral damage to consumers.) In the health-care field, licensing has been called "the main weapon in each jurisdictional joust" (Frech, 1974). Lieberman (1978) described a fierce legal turf battle between lawyers and real estate salespersons in Arizona.

At times, engineers have felt disdain for geologists and have often scoffed at the utility of geology itself. To some extent, this has improved with the times, is natural, is sometimes just harmless and playful, and is returned in equal measure. What engineers also still do, however, is play capriciously with the careers of geologists out of their disregard for geologists or ignorance of geology. And engineers have sometimes performed geology, often poorly, and have held themselves out to be geologists (though this could be excused on account of some fuzziness of the conceptual boundary between the two professions). Some nongeologist engineers continued to advertise their firms as doing geologic work in spite of practice laws, evidenced by one low-profile case in northern California that continued to annoy geologists in the mid 1990s. In some instances (in California, this was decades ago) engineers also tried to prevent geologists from gaining licensing.

The response from some geologists — grumbling and irritation — is understandable. Much of this emotion has been converted into action: the enacting of licensing of geologists. Licensing is seen as a way to eliminate conflict, controversy, and fragmentation (Hartzell, 1990). In this context, licensing of geologists is seen as a way to achieve parity between infrastructure geologists and civil engineers. Licensing has become the chosen route to giving geologists a

deserved socioeconomic status, legal standing, and protection of turf.[118]

The response from geologists is inappropriate for a subtle but crucial reason. Licensing is the injection of force into a previously peaceful situation. Engineers used no illegitimate force to gain their enviable status before licensing. They've eaten no geologists as a food source to allow themselves to reproduce in great numbers. Any teasing of geologists is an example of the timeless good-natured rivalry between groups, and, in any case, is merely speech and can be tolerated. No engineer ever forced a geologist to work for him. And the practice of geology by engineers or other "nongeologists" can't be classified as force in the absence of significant outright misrepresentation or gross negligence. Anyway, there are already ancient laws in effect to correct any real instances of misrepresentation or negligence.

Even if an engineer harms a consumer through negligent geologic practice, only the consumer is harmed. No geologists are harmed. Some might think so — erroneously — because the negligent services provided by the engineer represent work that should have, and therefore would have, gone to a geologist. But one party denying work to a second party doesn't constitute harm. No one has a right to a job.

Some geologists might argue that engineers are licensed, which is the use of force, and thus the required response is one of counterforce: licensing of geologists. Such a sequence of events would seem to have a certain symmetry to it, and symmetries are seductive. But an apparent symmetry isn't always a true symmetry. If your neighbor sneakily moves the common fence between your respective properties 2 feet onto your property, and later you sneak the fence back to the property line, then, for all practical purposes, a symmetry has been achieved. This is the sort of parity some people think is achieved when licensing of geologists is the response to licensing of engineers. Instead, licensing of engineers works to prevent those who would practice engineering "below standards" from practicing and prevents their would-be consumers from peacefully entering into professional agreements with all engineers. Licensing of geologists does the same with regard to the practice of geology. Licensing of geologists affects not only engineers who would practice geology but also geologists who would practice geology and consumers who would hire either of those would-be professionals. Yet only a minority of engineers would like to practice any significant amount of geology. This minority may numbers less than those geologists and consumers who licensing prevents from entering into peaceful professional relationships.

Licensing shows itself as the crude weapon it is. This weapon wielded by both rivals causes far greater collateral damage than that landed on the intended recipients, the rival professionals. The little nostrum we're taught on the playground, "two wrongs don't make a right," is an apt response to the use of licensing as a weapon in the battle over professional turf. Perhaps the playground metaphor is doubly appropriate: the rival professionals themselves sometimes seem more like youngsters handed a weapon — licensing — inappropriate to their age. Or triply appropriate: tykes battling in a sandbox squash many innocent tiny bugs — ants and beetles — unbeknownst to them, and our clashing titans, the rival professionals, inadvertently squash the little consumers in much the same manner.

Thus, if we see engineers with an inflated sense of their importance or encroaching on geologic turf, then we may consider any number of options. We may start our own consulting businesses, or become engineers, or educate engineers and consumers of geologic services in the value of good geology done by good geologists, or any of several other ethically permissible options. Licensing of geologists isn't one of those options. And if we see engineers using licensing as a tool to lord over geologists (or anyone else, consumers included), the proper response is to seek the end of licensing of engineers, not to seek licensing of geologists.[119] This should be made clear: the data and arguments summarized elsewhere above and below — extrapolated and generalized — apply equally to geologists and engineers, and licensing of engineers should be scrutinized just as closely as licensing of geologists.

A limitation of this argument is that it's best directed at those who want licensing of geologists to correct a perceived imbalance in the geology–engineering rivalry yet are also potentially concerned about the collateral damage. It's uncertain whether this is the thinking of many geologists. Perhaps many geologists in favor of licensing want licensing partly because they are comfortable with any collateral damage. They might even disagree with my use of the words *collateral* and *damage*; they think it fine that any potential practitioners they judge to be substandard are banned from practicing.

Even if I've digressed much in this discussion, I think it can be of value. It shows the ugly distortions in relations between professionals that licensing creates. The nasty pre-Thatcher, semi-sydicalist Britain of the 1960s and 70s — let's be Marxists, the labour unions will control nearly all the means of production, let's all strike and paralyze the economy — may serve as one example. This discussion hints that, besides licensing, there may be other effective, allowable solutions to

the problem of turf battles. And it shows that someone who values licensing mainly for its capacity to protect turf and enhance status vis-à-vis a rival profession has some serious things to ponder. Licensing is a net too tangled with unintended consequences and innocent parties to be reeled up out of the deep and onto the boat without a lot of peculiar, undesirable creatures coming aboard with it.

Licensing, Building Ordinances, and Professionalism

Licensing is also touted as a tool to reap greater levels of professionalism for geologists. Does it work? In many ironic ways, licensing works against this goal.

We can begin at a very simple level and ask whether one becomes a professional by obtaining a license. A very simple answer to this simple question is no. This answer would be based on the simple concept that to become a professional one does not step over a line scratched in the pavement. The idea of what makes for a professional is not one that is easily captured with binary (on–off, yes–no) thinking, as explained near the end of Chapter 2. Professionalism is a fuzzy concept spanning a continuum based on the idea of hidden work.

Perhaps, then, the question can be rephrased to include fuzzier terminology: Does licensing confer professionalism on an individual? My answer, again, is no, because I'm allergic to any dependence on a legal definition of a concept that requires lawyers to tell people what it means or the point when one is covered by a definition by crossing a threshold. Fox (1995) ably explained this: "We're all so accustomed to the term *professional registration* that we don't recognize its inherent ambiguity (the term is actually more oxymoron than ambiguity).... Professional registration is a *legal* notion, professional status an *ethical* one."

Thus, licensing fails to capture or adequately deal with the idea of professionalism. Irony shows up when licensing actually detracts from professionalism. This occurs when licensing is teamed with its main partner, building codes. Building codes, as explained near the end of Chapter 3, are often associated with licensing laws. Avolio (1994) perceptively pointed out that when building ordinances and licensing are coupled, our professional status as geologists is not enhanced, instead

> it seems that a geologist in fact loses professional status .... The contention is that an individual, having satisfied the state that he or she meets the minimum requirements of education, experience,

> and knowledge, the individual is now a qualified professional and should now be accorded those privileges due a qualified professional. ... A professional geologist generally knows more about geology than the client and therefore is and should be the responsible person capable of telling the client what needs to be done to satisfy the client's need. What happens in practice? In many instances the state, now having certified that the licensed geologist is capable of independent professional judgment, refuses to allow this individual to use this tested knowledge and judgment independently and insists on review of all work. The review includes the possible rejection of the work if "guidelines" are not followed. The guidelines have become requirements. It is interesting to note that in these cases the state gets to eat the cake and have it too, in that if the project goes wrong the professional can be sued but the state that approved the work slips out of any responsibility whatsoever. But the real point is that if the state is going to review the work, why does a professional have to do the work? Isn't the state in the same position as a supervising geologist with junior geologists and technicians working for him?

Avolio brought up a second irony. Licensing laws are also touted as promoting something else: professional ethics. The laws are offered as a means to protect consumers from unethical practitioners (the reckless, the underqualified, and the charlatans). Yet, instead of encouraging ethical behavior, the building-ordinance-plus-licensing cocktail partially backfires. Avolio (1994) wrote

> In practice this now means that a large percentage of the clients do not want the services of the licensed geologist but are forced by the state to hire one. When a client of this type chooses between excellence and cost, it is no surprise which factor wins. Also, this type of client exerts constant pressure to do less than required and thus sets up the professional for ethical dilemmas.

Perhaps the root of this second anomaly Avolio pointed out is that licensing is based on a static analysis. It assumes that people's preferences can be manipulated with no side effects whatsoever: people will just shrug their shoulders and change their behavior in just the way the technocrats want and foresee. Technocrats and legislators are frequently ignorant of the side effects and unintended consequences of their actions.

Consumers, where regulations exist, are forced to hire certain (licensed) geologists and adhere to building codes when they wish to

engage in certain economic activities (e.g., build a home). But a balloon, when squeezed on one side, forms ugly distorted bulges on the other. Consumers, when forced to do something they perceive as unjust and irrational, often react with resentment, evasion, and subterfuge. These behaviors and the negative attitude behind them are often directed at the geologist, whose job is then made more difficult and who is looked on as more of an antagonist than an ally and whose profession is thereby debased.

There's a related deficiency, or absurdity, concerning licensing and the role it wants to play in ethics. Licensing is a program to extract ethical behavior from practitioners, yet licensing involves little direct attempt to prevent unethical people from entering the profession, aside from requiring references. Notably absent are requirements for ethics classes and ethics questions on any licensing exam. An examination of licensing requirements across all 50 states by Brad Johnson et al. (2005, p. 654) "revealed marked heterogeneity with respect to explicit screening for character and fitness indicators. There appears to be minimal consensus regarding those elements of a candidate's previous experience that should be scrutinized prior to licensure." Instead what licensing seems to do is try to indirectly stem unethical practice by way of revoking permission to practice from those who treat consumers in an unethical manner. Yet there are already statutes on the books that deal with that. And why the indirect approach? Bayles (1981, p. 129) asked, why not just test for good moral character? "Not requiring evidence of good moral character for admissions would thwart the purpose of licensing."

Licensing vs. Private Certification

It is frequently said that licensing is more effective than private certification. Hartzell (1990) said he wouldn't rely on a geologist whose sole credentials were membership in AIPG or SIPES (respectively, the American Institute of Professional Geologists and the Society of Independent Professional Earth Scientists). Hartzell quotes a source who considered "self-certification as worthless, and suggested that framing a pretty Christmas card and hanging it on your wall would be about equal in value." Self-certification? I would agree that certifying oneself is of little value. It appears that Hartzell meant certification by one's peers without the benefit of an exam. He is correct about the limitations of private certification in a restricted sense. By more effective, licensing proponents mean (1) that licensing casts a far wider net over practitioners than does a professional association and

(2) that licensing can remove a practitioner's livelihood rather than just his or her association membership. In all, licensing potentially has a greater effect on standards of practice. The advocates have arrived at a valid conclusion.

But it's a conclusion to an inadequate question, one that doesn't map point-for-point onto the issue of professional licensing and consumer benefits. This line of reasoning in favor of licensing is often paired with a poor mode of argumentation, either implicitly or explicitly: restricting the debate to a false set of choices. Licensing advocates generally take the explicit route by saying there are only two ways to *regulate* the profession of geology: by means of state registration laws or by means of professional association certification.

I've presented the term *regulate* in italics, above, for emphasis. As it's typically used nowadays, *regulate* usually denotes control through state action, which uses force that emanates from the lock on a prison door. Control of geologic practice by private associations wouldn't qualify as regulation in this sense. However, *to regulate* has a wider meaning: to direct by some principle or to put something in good order. So, if the implicit goal is to direct the level of geologic practice to a higher level and put the profession in good order, then we can be open to many possibilities. We can be open to regulation by the state, and we can look at how well professional associations help achieve high levels of practice. We should consider, as in Chapters 2 and 3, the numerous other means of evaluating professionals and forces for putting a profession in good order: private intermediaries (companies, unions, universities, retailers, referrals, publications), information surrogates (advertising, prices, sunken costs, guarantees, time in business, tendering of insurance certification, geographic agglomerations of sellers), preservation of reputation, disclosure laws, title acts, suasion, education, boycott, peer review, and recourse through legal channels. Note that the last one, legal redress, falls under the heading of state action but removes the locus of action from a bureaucratic regulatory body (licensing) and replaces it under the purview of the judiciary.[120]

The licensing-is-superior argument also implicitly assumes that tighter regulation is better than looser. As discussed in Chapter 3, tighter regulation might not be better. For example, Shimberg (1982) said that requirements that go too far tend to thin the supply of practitioners and cause consumers to pay too much for the services of the remaining practitioners. Never have advocates of licensing themselves put forth a detailed set of criteria for evaluating how much regulation is best, nor have they carried out such an evaluation. Even licensing proponents, when the fog lifts briefly for them, acknowledge

that no one "could cite an accepted and objective way of evaluating or validating a board's enforcement program" (Tepel, 1995, p. 79). Many feel that a board can be evaluated by comparing its enforcement program with other similar boards (Tepel, 1995). However, this would merely be using an average of the status quo, perhaps a sort of is–ought conflation.

It's also claimed that licensing is more accountable to consumers, whereas professional associations are more accountable to their members. The licensing board is appointed publicly, may contain lay members, and holds meetings in convenient locations in a public forum. Professional associations display none of these important characteristics. In theory, a professional association, by rejecting all input into its operations from outsiders, could indeed act as a source of great power to its member professionals vis-à-vis the consumer. A professional association could do so if it were to certify professionals while addressing complaints in secret, conspiring to routinely dismiss legitimate complaints from consumers, failing to discipline members, and generally executing a program to allow standards to grow lax. Its certificates would then constitute a sort of fraud. For a time anyway, until consumers caught on, some consumers could suffer. This hypothetical scenario is conceivable. It's also a strange one.

As so often happens, one must extend one's thinking outside the box imposed on us by others or by our own thought processes. It hasn't been shown that, while licensing boards are accountable to the consumers in theory, they are accountable in practice. As discussed amply in Chapter 3, later in this chapter, and in Chapter 6, licensing boards display many of the self-certification characteristics of private certification. In searching the literature on this topic, one often has to read discussions of self certification in some depth before one can be sure whether state certification or private certification is being discussed: both can be found under the label "self certification."

To the charge that the business of private certification is conducted in private there is the response that any privately produced product is made in private, from Dodges in Detroit to televisions in Sony factories. The proof is in the results, in what consumers see when the product is delivered to their doors. It's fully plausible even that private certification is *more* responsive to consumer dictates than state licensing, since private certification puts itself directly out in the market as a service to live or die by whether its users are willing to pay for it. In contrast, there is no such auto-self-destruct mechanism to guarantee that a state licensing board will disappear when it stops delivering.[121]

Licensing is a system far removed from its consumers as a whole through multiple layers of bureaucratic inertia. While any one consumer may easily communicate with a licensing board and receive satisfaction, for a *dis*satisfied consumer (or even a group) to alter this system or choose between professionals from competing boards is virtually impossible.[122] The licensing board is a state-sanctioned near monopoly. Monopolies, it's generally agreed, don't have particularly great incentive to be responsive to consumer desires. While private certification bodies may function alongside the state licensing board, all consumers and professionals still must go through the state licensing board. Ironically, this very feature that licensing proponents tout as making licensing *more* effective — its compulsoriness — might actually tend to make it *less* effective in advancing consumer interests. In his 1978 paper, Stanley Gross explained how state licensing institutionalizes a lack of accountability to consumers. He summarized thusly (p. 1009):

> The present review of historical, economic, and sociological research indicates a specious association between licensing and the competence of practitioners. Rather, it is suggested that the evidence reveals licensing to be a mystifying arrangement that promises protection of the public but that actually institutionalizes a lack of accountability to the public.

Competence and Consumer Protection

When looking closely at the mechanisms of licensing, we find additional reasons why it has trouble reaching its goal of producing a better product for the consumer. This becomes evident as we examine the specific restrictive features of licensing. Typically, three such features are (1) the number of years of supervised work one must perform before being allowed to sit for a licensing exam, (2) the questions on an exam, and (3) the passing score on the exam.

Tepel discussed passing scores in Chapter 16 (How Should the Passing Score Be Set For a Licensure Examination?) of his 1995 book. He explained a criterion-referenced method in which psychometricians create an exam and set a passing score such that the examinees who pass possess something called minimum competence. Minimum competence is determined by subject-matter experts. We can surmise that these experts are some combination of educators and practitioners. How, though, is it determined that these experts are themselves competent? Is there a bit of circular reasoning here?

More importantly, what exactly is this minimum competence that the experts weigh? At what point does one become minimally competent in a subject? It should be evident that we begin to traipse down the path of arbitrariness and capriciousness if we lack a firm and, above all, useful concept of competence. A definition that's rigorous, quantitative, and sensible is lacking. (Ironically, the criterion-referenced method for setting a passing score is advocated as being free from the arbitrariness of other methods.)

A licensing board could ratchet up the difficulty of an exam or its passing score such that only 5–10% of examinees pass — there are probably geologists who might insist on such a high level of expertise before calling someone a true geologist. Or, the requirements could be relaxed such that 80–90% pass. Either way, it could be argued that only minimally competent practitioners, people we could call geologists, are passing the exam. By handing the question over to a group of experts, we expect to get a number somewhere in between and well away from those two low and high endpoints. This might give us some degree of satisfaction. All we've done, though, is make competence the agglomeration of some unstated ideals residing in the minds of a set of experts. Smith (1937 [1776]) and Young (1978) saw evidence that licensing requirements in general are arbitrary. What is this definition of competence in the minds of these experts? Perhaps if pressed they would say that competence is something they can't define but they know it when they see it. The problem here is that people are trying to take an inherently fuzzy concept and digitize it. These same issues of fuzziness and digitization were discussed in Chapter 2 when tackling definitions of the word *professional*.

Naturally, then, the relationship between licensing and competence is much in dispute. Reuben Kessel (1970) complained, speaking of the medical field, that no relationship has been established between licensing requirements and competence.[123] Gross (1978) said that his review of historical, economic, and sociological research indicates a poor correlation between licensing and practitioner competence. In his 1980 book, Gross devoted a chapter (p. 117–134) to doubts regarding licensing requirements and competence. David Johnson and Daniel Huff (1987, 1988) looked into licensing of social workers in Idaho. They concluded that there was no demonstrated relationship between passing the written exam and practice competence. They evaluated ten factors that might act as predictors of success in professional practice and found that grade point average, graduate education, and race[124] were the best predictors of success, casting doubt on whether

the licensing exam is useful in measuring knowledge necessary to do social work.

Wilson discussed the value of civil service exams of different types (1989, p. 140):

> For a long time industrial psychologists believed that no single test could predict performance across a wide variety of jobs, and so heavy reliance was placed on tests developed for a specific job as well as on interviews and experience. Recent research had shown this view to be false. By combining the results of thousands of studies done on a great variety of jobs, scholars have been able to show that tests of general mental ability are better predictors of job performance (as measured by such criteria as supervisors' ratings) than any job-specific test.[125]

Wilson explained the history of one federal test of general mental abilities called PACE, or Professional and Administrative Career Examination. It was developed over several years and was used for about 5 years in the 1970s in the U.S. federal government. It was abolished in early 1981 amid complaints that the scores of blacks and Hispanics were too low. Administrators began recruiting in different ways, including the writing of job-specific tests. Serious problems developed. "Privately, several top officials said that [this] was leading to a drop in the quality of entry-level managers. One executive described the decline in quality as a 'death spiral'" (Wilson, p. 141).

Research by psychometricians has shown that narrowly tailored tests are poor predictors of job performance. Meanwhile, advocates of geologic licensing present no research to show that their exam closely predicts who will provide effective geologic services for consumers. The justification for licensing contains a gap here.

Along a different line of inquiry, we have work by Maurizi (1980). He described how a licensing exam may do little to raise quality while imposing a deadweight cost. Contractor license schools (in Maurizi's example) obtain the exam questions or their near equivalents. Lower-quality contractors take the course and become licensed contractors. They circumvent the process, and it costs money to do so. Thus consumers may be receiving a quality of service quite similar to what would prevail in the absence of licensing, yet they may be paying higher prices for that quality.

Curiously, licensing typically aims much higher than its stated goal of setting a minimum level of competence. It often seemingly tries to set an inordinately high level of competence (Hogan, 1983). We might see this

in geological licensing in California, in which only a minority of examinees, between about ⅓ and ½, pass the exam. Oddly, the examinees, those allowed to sit for the exam, are only those who have already passed other significant hurdles: they have earned a college degree in geology (or closely related major), have worked for years in supervised geologic practice, and can provide letters of reference. It's difficult to see how the idea of minimum competence can be stretched to cover a situation where the prerequisites shrink the pool of potential geologists by some unknown percentage and then an exam shrinks the already dwindled pool by more than half. Many of us probably know individuals, as I have, who have taken and failed the geology licensing exam two or three times, and we might in fact, with little reservation, call these individuals good geologists. Again, we need to ask ourselves if a minimum floor is being set or if, instead, a much greater restriction is being imposed.

There's a still more-serious problem, though. Even if we could simply wave off these many questions surrounding the words *minimally competent*, we still stand at a dead end. We could grant that there's an arbitrary relationship between passing scores and competence, but we have established *no relationship between competence and consumer benefits*. Young (1978) raised this objection. Richard Hare (1992) surmised that government regulation of professional ethics may fail to achieve the desired goal of public interest. Hare ranked custom, self regulation, and legislation on a continuum, custom being the ideal way to achieve optimum professional quality, self regulation by the profession itself being saddled by conflict of interest, and legislation being cumbrous and unworkable due to legislators who don't know what to do. Rick Carlson's (1976), based on a review of the literature, reported that "while licensure does seem to have an impact on manpower utilization patterns, ... there is little evidence which can be used to demonstrate the relationship of licensure to quality of medical care." He guessed that licensing could contribute at most a few percent to human health. His prescription was that medicine should be "loosened up" via a relaxation of licensing laws, lay control of boards, and more reliance on institutional licensure. According to Chris Paul (1984), medical licensing isn't associated with any lower mortality rates among various population groups. A relationship between competence and consumer benefits is necessary because competence itself is not an adequate end goal (although it may serve as some sort of intermediate goal). Licensing advocates, however, rarely if ever state that competence is their end goal: rather, consumer protection serves as that goalpost.

Nor is there a clearly stated rationale whereby licensing achieves the goal of consumer protection or overall benefits. The usual methods for filtering professionals are education requirements, an exam requirement, and a certain number of years of supervised practice. Yet, where are the data that correlate these education, exam, and practice requirements to respective monetary benefits for consumers? Where have licensing advocates presented a one-for-one mapping of the knowledge of geologic facts A, B, and C on an exam to respective savings for consumers of X, Y, and Z dollars per practitioner per year? I think these sorts of questions are more than mere intellectual nitpicking and hairsplitting. They're obvious and relevant enough to occasionally make their way into the popular press:

> Occupational licensing: These are requirement that go beyond public health and safety concerns. Does a hair braider really need 900 hours of instruction in all aspects of cosmetology? Is it essential to the well-being of young children that daycare center directors possess master's degrees? (Anonymous, 1996d).

And:

> If a woman wants to set up a hair-braiding business, she's supposed to spend 1,600 hours in cosmetology school learning how to cut, color, curl, straighten, perm and manicure — but not to braid — at a cost of thousands of dollars. That's ridiculous. Natural hair braiding is an African-American tradition …. Despite that, California law requires … a cosmetology license. In 1997, the state's Department of Consumer Affairs used an undercover agent to bust a woman braiding hair at her home; she faces misdemeanor charges. … The state should get out of the braiders' hair. (Anonymous, 1999).

Similar findings have been reported in the area of continuing education (CE) requirements. Todd Vaughn et al. (2006) studied the literature regarding CE requirements for the renewal of licenses by health-care professionals: they found a nearly total lack of any relationship between participation in mandatory CE classes and improved patient outcomes.

We see no rigorous empirical studies showing a positive correlation between licensing requirements and consumer savings. This isn't an implied-perfection argument or one that fails by way of the nirvana fallacy. Rather, with this argument, we ask to see evidence that licensing hasn't in fact failed by its own standards. Left without this

evidence, we can only infer that licensing requirements are developed with an eye to common sense and practicality but also with large measures of educated guesswork, intuition, and homages to political imagery.

Grandfathers and Competence

These disappointments are made clearer still when we consider grandfathering (*grandparenting* in politically aware social science writings). Grandfathering is the term applied to the giving of exemptions to "grandfathers" under a licensing law. Grandfathers are those individuals possessing the minimum legally specified college education and real-world experience when a licensing law takes effect. In grandfathering, individuals with many years of experience under their belts are given a license without taking the entrance examination. Would-be professionals not qualifying as grandfathers have to pass an entrance exam.

As proponents explain, there are two main justifications for the grandfather clause. One: it's a political reality. Licensing laws are too difficult to enact without allowing those already practicing to continue. (Some sort of ethical–constitutional justification for the grandfather clause is mentioned in some of the prolicensing literature, but licensing proponents haven't fully articulated what it is; we can only guess at it, as in Chapter 2.) And two: grandfathers shouldn't have to pass an exam that tests entry-level knowledge. Grandfathers have forgotten much of that sort of knowledge. What makes grandfathers valuable are highly specialized skills and advanced judgment. These abilities allow grandfathers to practice at about the same level of consumer protection provided by tested licensees. The enforcement provisions of a licensing law still apply to all licensees, and if a grandfather performs shoddy work, he or she puts his or her license at risk.

Most of this is quite reasonable. However, a little thought shows that grandfathering puts licensing on the horns of a dilemma. To, perhaps, lose the battle but win the war, it seems that licensing should seek the dubious safety of the political-reality horn. It might be distasteful for licensing advocates to admit that to be enacted a law has to be phased in and that a large class of people needs to be given an exemption. A law that is purportedly so beneficial and protective of consumer safety shouldn't have to go to such political lengths to make itself palatable. Yet this seems to be the only safe remaining justification for the grandfather clause.

The other justification, that grandfathers use advanced knowledge that serves consumer interests yet isn't tested on the exam, is a horn that licensing must avoid at a risk of undercutting its own justification for existence. Because, the assertion that grandfathers are qualified is a serious indictment of the licensing exam and is a tacit admission that all the other nonlicensing quality-control forces available work quite well.

If grandfathers are generally believed to be qualified, then how did they become so? The only significant factors are some blend of time (experience), market processes (competition), and criminal and civil statutes guarding against fraud and negligence, weeding the unqualified from the qualified over years of practice. Licensing is rendered unnecessary.

Great reliance is placed on the fact that grandfathers can be removed from the supply of practitioners by *post facto* enforcement (after wrongdoing by the practitioner). If this works as well as licensing advocates advertise (and I would agree that it does), then what justification is there for *ante facto* entrance requirements, namely, an exam that assumes everyone to be deficient until proven otherwise to the government? By way of *post facto* enforcement, licensing proponents offer the enforcement provisions in licensing laws. The existing alternative consists of criminal and civil statutes against fraud and negligence. The two alternatives work about the same. One could conclude that in this regard, again, licensing is unnecessary.

One geologist writer used a bright analogy to explain that the licensing exam tests "what one needs to know to demonstrate minimum competence at the entry level" but "does not test the advanced knowledge and skills used by practitioners with many years of experience." Asking a grandfather to take the licensing exam is like asking "a 15-year Boeing 747 pilot to demonstrate his skills in the Cessna 152 in which he learned to fly but hasn't flown for 30 years. The process is meaningless ..." (Tepel, 1995, p. 68).

There is much going on here. Somehow the grandfather lacks much of the knowledge that the exam tests for. Yet the exam is touted as testing for something called minimum competence. Evidently, then, the grandfather possesses Boeing 747 knowledge and judgment that make him qualified to practice and make up for the untested Cessna 152 knowledge. An interesting question, though, is this: Did the grandfather ever have the complete mastery of the Cessna, which the exam tests for? If we could send the Cessna test back 15 years in time to the grandfather of 15 years earlier and give him enough time to study, would he pass? Or if he were to spend

many months studying for it *now* would he pass? Let's assume this test is a very difficult one, like many geologist exams, and less than half of the examinees pass. So, would this grandfather rank among the many young would-be entrants to the profession who take the exam several times, ultimately fail, and give up to pursue other avenues to success? It's likely that a significant portion of grandfathers fall into this category of those who could never have or could never now pass the exam.[126] Shouldn't a grandfather who falls into this category be deemed unqualified? On the other hand, if this same "unqualified" individual is obviously doing a satisfactory (perhaps exemplary) job using advanced knowledge, techniques, and heuristics she has picked up over the years, then isn't she qualified? Shouldn't she be considered qualified, competent, professional, and (better than) satisfactory? (And, of course, my answer is yes, and I suspect yours might be also.) Isn't any grandfather's place among the ranks of the qualified bolstered by the board never having considered disciplinary action against her (the case with most grandfathers)? There's a paradox here, and it leads one to question whether the exam adequately tests for competence. And if the exam is a poor indicator of competence, then does filtering by licensing correlate in any significant, measurable way with any consumer protection?

Yet another question arises when assuming the grandfather could have passed the exam early in his career but would have some trouble now, like the 747 pilot climbing into the Cessna for the first time in many years. Between his entry-levels days and now he has exchanged (forgotten) an enormous number of factoids for enormous sums of relevant knowledge and judgment. It might not be any exaggeration to say that this switchover occurs in only a few years. My observations and personal experience show this to be the case. Of what use is an exam that tests information that is relevant for only a few years? If a lot of knowledge acquired on the job is critical to a professional's practice and if an exam is not testing this knowledge, then of what use is that exam in protecting consumer interests during a professional's middle and later years? How can an exam deal so poorly with the enormous shifts in knowledge that one possesses between when one passes the exam and when one gains the equivalent few years of experience of the average grandfather? The ultimate question to ask, again, is whether the exam tests for anything useful and, therefore, whether we can know that licensing accomplishes anything in the way of consumer protection.

Perhaps we've set the limbo stick too low for licensing. Perhaps it hasn't been shown exactly how the licensing exam protects consumers

because it simply is too difficult to measure. Just because the exam has flaws doesn't mean licensing is irreparable and insupportable, might the reasoning go. Some might say we don't technically know *how* licensing works but it's good enough that it does work, like some pharmaceutical drugs (and like markets themselves). And many believe geological licensing does work, based on certain vague theoretical writings (Akerlof, 1970; Leland, 1979) and unrelated empirical studies (Alfors et al., 1973). Yet the notions offered in support of geological licensing (and licensing in general) have been shown to be defective (Chapter 3). This leaves licensing insupportable until shown otherwise. A medication administered to people purportedly for their own good must first be shown to be safe and effective. The questions surrounding the licensing exam and the other hurdles would-be professionals have to clear cast doubt on whether licensing is effective on balance together with its social costs. As an antidote to the problem of screening the input to the pool of professionals, Hogan (1983) recommended that we instead focus on the output, in other words, the work that professionals put out.

Sources of Quality

If we're looking to improve quality, but licensing doesn't deliver, then what will? Perhaps one clue can be gleaned from recent macroeconomic events.

Although it's now a fading memory, many were familiar with the turnaround of Japanese industry in the 1950s through 1980s. Before 1950, Japan had the well-earned reputation of turning out shoddy goods. Then, soon after their humiliating loss in World War 2, Japanese industrialists embarked on a program of quality improvement. By the early 1950s, it began paying dividends. By the end of the 20th century, the world became awash in Japanese goods, and Japan's competitors were playing catch up in terms of quality. Readers of my generation will recognize the importance of these names: Toyota, Honda, Datsun (now Nissan), Sony, and Yamaha. Younger readers will recognize these names: Hyundai, Kia, Samsung, Lenovo, and (fill in the blank with practically any brand or nameplate). Chances are these products were made in China or South Korea or thereabouts, those countries being Japan's (or Taiwan's, Hong Kong's, or Singapore's) copycats on an export-driven path to prosperity.

One man given much of the credit for Japan's education in quality is W. Edwards Deming (1900–1993). In 1950, Deming accepted an invitation to help the Japanese. It would be difficult to overstate the

role he had in transforming Japanese industry and, thus, trade and the landscape around the Pacific rim. Yes, the actual landscape: consider the massive development of ports on the U.S. west coast. If one were to point to a single individual responsible for the pattern of artificial glow that can be discerned from Earth orbit at night, one might point to Deming and the ports around the Pacific Rim. U.S. heavy industry — arrogant and bloated — once largely ignored Deming's methods of applying statistics and intelligent leadership to quality control. In 1982, Deming set forth his strategy for an audience of American managers in the book *Out of the Crisis*.

Deming was a strong proponent of industrial standards. Standards, he said (1982), have given people lower prices and better quality, safety, and service. At any given time, thousands of executives and technical experts are continually working together to develop and revise standards in U.S. industry. These committees produce standards and safety specifications for electrical wiring, fire hoses, appliances, tires, lamp sockets, shirts, musical notes, and measuring cups.

Deming (1982, p. 298) did see a role for government regulation. "A regulation is justifiable if it offers more advantage than the economic waste that it entails .... Suppression of fraud and protection of citizens against the rashness of others undeniably comes within the province of regulations." And regulations, to maintain order and the public conscience, must be strict and enforceable. Deming gave traffic lights as an example.[127]

This makes it surprising that Deming (1982) then went on to put up a spirited defense of voluntary guidelines in place of government regulations:

> As it does not involve any mandatory prohibitions, a voluntary standard does not require the signature of a minister before it can be put into effect. Instead of passing through the rather rigid filters preliminary to ministerial decisions, it can be prepared by the mutual agreement of all those who have contributed to it by their voluntary work ... [p. 299].
>
> Government obviously has the right to set standards for the goods it buys. It is an interested party, and should be an active and watchful one. There are trends, plans, and proposals currently under way, however, that would make standardization wholly or mainly a function of government, and I am opposed to them. I do not want my talented, capable, and sincere friends in the federal agencies in Washington to write the industrial standards of this country. Too much is at stake. If you control an industry's standards, you control that industry lock, stock, and ledger. On the day

> that standards become a governmental function and responsibility, as is now being threatened, the government will take a very long step toward the control of American industry. ... Standards made under such conditions tend to ... reduce consumer choice. No government planner knows enough to write the standards for the rest of American industry and all other American people. Nazi Germany practiced standards by decree and paid the price for it ... [p. 302].

Deming's program is largely a statistical one. Collect statistics on the things you're making, and you can learn where to improve the production process. Nowhere did Deming call for collecting data on workers or for any worker screening or examination process. These, he said, would undermine worker morale and effectiveness. What he did call for were wiser leadership, programs of worker training and self-improvement, learning the needs of the consumer, measuring *product* variation, and many other measures and changes in thinking.[128] But worker exams, no, let alone state licensing. If there is one core precept in his management approach, it might be that workers aren't to blame for defects but that rather the system, the process, and management are. Perhaps this stems from Deming's definition of quality as the degree to which a product meets or exceeds the customer's expectations, not as an arrogant edict handed down from on high by a third party. Deming (1982) went to great lengths to explain that his program applies equally well to industrial products and commercial services.

One last way in which licensing can affect quality is in the area of innovation. Friedman (1962) discussed how licensing reduces quality by discouraging technological advances. A member of a profession who wants to stay in good standing in the profession will impose on himself severe restrictions on the kind of experimentation he will do. If licensing is the chosen way to filter those professionals in good standing from others and to deny work to those professionals who are not in good standing, then some amount of innovation, and thus quality, will be put off into the future. Naturally, when innovation and quality are put off into the future, those of us who reside in the present will suffer.

Metastasis

As Deming and many others have recognized, government programs have an ugly tendency to expand rather than shrink. Licensing is no exception. There are several aspects of this tendency to make one

squeamish. Readers with no qualms about government expansion into all areas of life, domestic and international, may skip on ahead. (Make it a point, though, someday, to read some Orwell.) Others might wish to continue reading. It's time now to touch on this unpalatable topic.

Licensing of various professions and occupations generally originated with the consolidation and expansion of local programs, i.e., guilds. In California, licensing of geologists began as programs administered on city and county levels, which then grew to become a single state-administered program (Spellman, 1990; Kresse and Serlin, 1990; Neel, 1994). As Howard Spellman (1990, p. 168) explained, this was because

> geologists could only practice in those few cities and counties where they were licensed, but were restricted from practicing in adjoining cities and counties. This plethora of local boards resulted in unnecessary restrictive regulations, greater expenses for everyone, and in many cases poorer work and reports .... The State Board ... was a plus for the geologists because anyone registered by the Board could legally practice geology and geophysics in any part of California, not just at the local level.

The same rationale like an echo is being voiced for a nationwide expansion. There are urgings to take licensing from separate state-administered programs to a national program. Some important steps toward this include easy reciprocity and a uniform exam, as James Williams (1990) advocated:

> Many geologists working in any specialty must travel widely and work in numerous states with different geology. Therefore, ease of reciprocity is essential for the benefit of the public. For nationwide reciprocity to be a success, it is essential that examination requirements are standardized. It is also necessary that qualifications, most definitions, registration requirements, and reciprocity procedures are uniform from state to state [p. 85].... Some [geologists responding to a questionnaire] preferred a nationwide rather than regional model law approach [p. 89].

There might seem to be consolation for those like myself who are apprehensive of snowballing federalism. Slayback (1990) points out that a single national licensing system might not be allowed by the U.S. Constitution. The 10th Amendment states that "those powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the States or to the people."

However, the 10th Amendment rarely stops the federal government, which is the *United States* in the 10th Amendment, from taking over numerous functions that were and could just as well be performed by state or local governments — or by the people. The federal government finds justification for this in interpretations of the commerce and general welfare clauses in Article 2, Section 8, of the constitution. Those interpretations come from the federal government itself and from those who would like to see only selected (their selection) limits to its authority and its intervention into the totality of all human action within its territorial jurisdiction. Thus, there is little in the way of constitutional safeguards to stop licensing from going national.

Licensing doesn't need to go national all at once for its expansion to ripple outward from one state to surrounding states. Benjamin Shimberg (1982) talked of the dangers of a snowball effect, in which state governments feel compelled to raise standards in line with neighboring states: "No state likes to acknowledge its standards are lower, because this implies that its citizens are not as well protected as citizens of other states."

States often copy other states. State legislators (and their lobbyists and professional associations) often observe what is going on in other U.S. states. With information and communication being as far-reaching and ubiquitous as they now are, these observations needn't be restricted to neighboring states and may extend thousands of miles in any direction and leapfrog into far-flung U.S. states. State legislators copy laws and regulations of others states and adopt them as their own legislation and regulations. Geologists, in the form of their professional associations, assisted by their paid legislative lobbyists, have fostered this idea with their model practice act (Anonymous, 2011c). In the 1980s and 1990s, pundits often optimistically said, "as California goes, so goes the nation." I no longer hear this, as California has mired itself in political, economic, and demographic muck, but Shimberg's (1982) snowball effect still has the power to exert itself elsewhere across the U.S. or worldwide.

There's also what White (1979) called *the ratchet effect*. Think of a socket wrench (which contains a ratchet), with its dial set for tightening: whichever way you crank it, it will tighten a bolt or nut rather than loosen it. The ratchet effect occurs when a licensing act contains a grandfather clause and the entry requirements for new licensees are sufficiently restrictive. The grandfathers enjoy an immediate advantage (or, certainly, at least no disadvantage) when the law takes effect. The pool of licensees then changes little as grandfathers die and are

replaced by new licensees who pass the exam. Wages (the advantage), accordingly, remain healthy also. Meanwhile, there is no provision for a gradual relaxation of entry restrictions with a repeal of the licensing law. Instead, were licensing to be (hypothetically) repealed, new workers could enter immediately, and wages could fall immediately for everyone that was licensed before the repeal. No one wants a sudden (or even gradual) decrease in their salaries or incomes. The result is that the members of a profession expend as much or more energy *protecting* a licensing law once it is enacted as getting it *enacted* in the first place — hence the term *ratchet*.

The snowball and ratchet effects give useful explanations, on a political level, for the tendency of licensing to grow ever larger. They take much wind from the sails of the claim that the spread of licensing is simply a healthy sign of a maturing profession.

Tepel (1995, p. x) shared his observation that "Licensure comes when a profession is mature enough to accept it." I think this tells only half the story. What we might be seeing is the members of a profession not showing healthy maturation but rather being caught up and swept along in a larger phenomenon of cultural aging. Economist Mancur Olson discussed this in his *The Rise and Decline of Nations* (1984). His thesis was that as *a society* matures, ever more (and more powerful) interest groups emerge.[129] The main purpose of such groups (e.g., professional organizations) is to lobby the state for greater collective action in their favor. Some refer to this phenomenon as *demosclerosis*. No one seems willing or able to take a leadership role in ridding an aging, sclerotic democracy of this disease.

In the 1970s and thereabout and at various times during the Cold War, there was talk — predictions — of some meeting in the middle. In this scenario, the societies of a republican, capitalist West and a totalitarian, centrally planned Soviet Union would gradually, over much time, of their own accord, evolve and come to resemble one another. Peace would be the result. The West, I would posit, has largely done its part.[130] The Soviet Union did the same, although by way of a slightly more convulsive process. Prediction confirmed, more or less. But I digress.

The tendency for licensing of geologists to expand also has its origins in the science itself and the way we view its role in society. According to a certain viewpoint, nearly everything geologic comes under the purview of licensing and points to the need for licensing. For example, Hempen (1990) reasoned that "Surely the universal concerns of ground water and hazardous/toxic wastes affect the life expectancy and pocket books of nearly every U.S. citizen. Therefore,

the practice of geology should be controlled in every state by licensure." Other writers in the same vein supply additional assertions and take this notion a few steps further:

> The future could witness a change in the way "the safety, health, and welfare of the public" is protected if more engineers participated in societal roles and if all engineering societies were united in this effort ... One may wonder whether such an expanded societal role for engineering leadership is practical or even possible. One might compare the success other professions like medicine and law enjoy in the legislative arena. One might also conclude that the engineer, when dealing with societal projects, should regard society as his patient just as the physician regards an individual as his patient ... Thus regulation becomes necessary ... [Pletta and Gray, 1985, p. 195–196].

> Expansive soils ... can cause property damage that can be a considerable threat to the financial health (welfare) of property owners.... [T]he independent resource geologist who evaluates resource potential for owners or potential investors can have a direct financial (welfare) impact on members of the public.... [I]t is economic value that the public seeks to have protected. Even governmental agencies that rely on property tax revenue can be said to have an interest in protecting property from geologic hazards. If a geologic hazard devalues a property, then the tax revenue from the property also will go down [Tepel, 1995, p. 32-33].[131]

According to this reasoning, any activity by anyone that might be less productive than an alternative activity or might result in less tax flow to the state becomes an activity that the state may regulate for the purpose of maximizing societal welfare and tax revenue. What is bad for the individual is bad for the collective. I don't think it's exaggerating to say that the potential consequences of this notion, with the state reaching far into private behavior, would be astounding.

If someone should wish to retire "early," become a sculptor rather than a geologist, destroy a brilliant sculpture of his own in a fit of rage, or watch football on the weekends rather than do crucial preventive maintenance on his rain gutters, roof, or car, he would be adversely impacting his financial welfare — and collective welfare and tax streams. If someone should wish to birth nine babies from six various baby daddies, thereby running the risk (a near 0.89 probability) that supporting the progeny will fall upon the state welfare and foster-care systems and adversely impact local classroom environ-

ments, then she will be placing a burden on the collective welfare system, tax streams, the educational system, and (most likely) the criminal justice system. The collective, the state, therefore, would see it as its right to intercede in such decisions. For this reason perhaps football broadcasts should be banned as harmful to collective property values. Talk of licensing parents (e.g., Westman, 1994; Grigg, 1995) and the press appears with sunspot regularity in the social science literature and popular media. I think it safe to say most of us would find these ideas unacceptable. Last time I checked, choosing to watch football[132] and becoming a parent were personal decisions. And by a sort of *redutio ad absurdum* we would also have to reject this argument in favor of licensing, that we members of the collective are all somehow stakeholders in all the decisions made by everyone around us.

There's a potential irony in all this, also. Some would try to promote our belief in licensing by depicting us as stakeholders concerned about collective welfare and tax revenues; at the same time we're faced with the conclusion of a majority of social scientists that licensing is a drag on the economy — with a consequent drop in tax revenues.[133] How, then, are all of us "stakeholders" to look upon geological licensing?

The numbers of occupations and workers ensnared in licensing has also increased markedly. In the mid 1950s, 5% of U.S. workers needed a state license to do their jobs. In 2008, the figure stood at 23% (Simon, 2011). Some of the 1,100 jobs included in the current list requiring licensing in various jurisdictions across the country are amusing: florists, software designers, interior designers, private detectives, hearing-aid fitters, conveyor-belt operators, and shampooers. If only this list weren't really rather tragic instead. If this rate of increase in licensing over the last 50 years were projected forward, 100% of U.S. workers will need government permission to practice their trades, sorry, their "professions," by the end of the current (21st) century. Graph it, on paper, as I did. Thus our national history would unfold as a sort of mirror image of that of our former Cold War foe.[134] I can't bring myself to believe such a projection. Still, ask yourself what sort of change in thinking would be required to reverse, stop, or even just slow the current trend.

Various Consumer Parties and Their Levels of Discernment

Tepel (1995, p. v) provided a list of so-called stakeholders in quality geologic practice. Although the list is relatively short (too short, as

we'll see below), it is superficially impressive, impressive enough for me to devote a brief discussion to it here. In the best tradition of rhetoric, the word *taxpayers* appears five times in rapid repetition, and the terms *agency*, *agencies*, *utilities*, and *all* are sprinkled throughout. The "[c]urrent and subsequent owners, occupants, and users of the facilities" are merely buried in the middle of the list.

The way the list is designed seems intended to imbue the topic with an all-important public component. Gosh, we are *all* taxpayers, are we not?! Yes, consumers and their neighbors in the oval bubble in Appendix A could be expanded. Does the introduction of taxpayers create an uncomputable level of complexity, like forecasting the weather 12 days in advance? No. Does the graphic model in Appendix A collapse down to a cringing, hunkered-down level of clutching onto licensing for life support? No.[135]

Recall Figure 1 and note the graphic in Appendix A. From these starting points, we could expand the role of agencies and taxpayers and push aside general consumers and relegate them to a minor role. And we could create something like Figure 3, below.

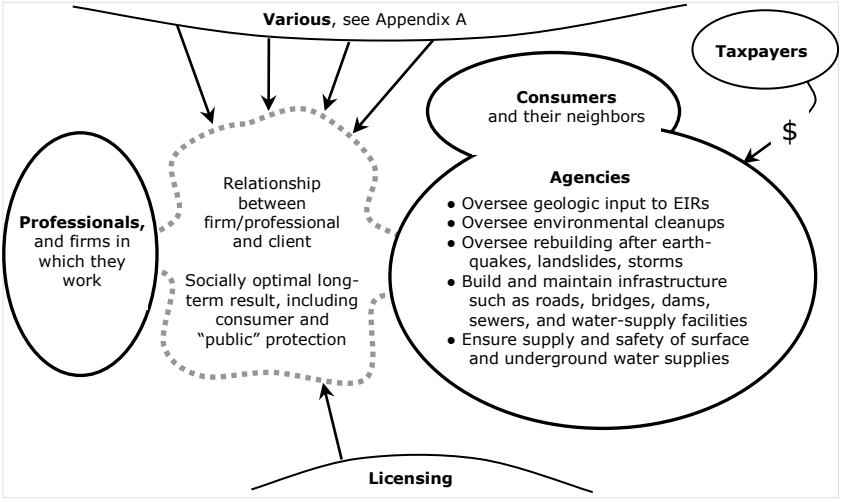


Figure 3. Some of the parties involved in licensing. Emphasis here is on consumers, particularly agency consumers of geologic services. Compare to Figure 1. See also Appendix A.

Taxpayers fund government agencies. The role of taxpayers in the process pretty much ends there. Taxpayers would love for their funds to show optimal results and be well spent. Unfortunately, for taxpay-

ers to check that this actually occurs requires that they negotiate a labyrinth of politics, governance, and administration.

Taxpayer-funded agencies contract with professionals. More specifically, they contract with firms who employ professionals. Agencies publish long, detailed RFQs and RFPs (respectively, requests for qualifications and requests for proposals). Firms reply with long, detailed SOQs (statements of qualifications) and proposals. SOQs include elaborate lists of previous projects and references. Presumably those previous projects had good outcomes, and the references can vouch for those good outcomes and the high level of service provided by the candidate firms.

Agencies are thus in a good position to sift from among the professional-services firms they evaluate and eventually contract with. Taxpayer-funded agencies stand in this position by way of (1) dangling high-value contracts, (2) internal requirements that they dole out contracts using strict protocols, and (3) resources (taxpayer funds) that allow devoting many management hours to preparing RFQs and RFPs, evaluating qualifications submitted to them, and negotiating contracts with the firms they eventually select. One may question whether licensing is needed as input. One may even question whether agencies need much of *any other sort* of help in contracting for professional services. By other sorts of help I mean the shortcuts, informational proxies, and backstops that come in the form of the legal system, economics, ethical suasion, and miscellaneous mechanisms, i.e., the *Various* in Figure 3 and the four upper bubbles in the diagram in Appendix A.

Agencies who sit in such comfortable positions are those who dangle high-value contracts in front of engineering geologists and other design consultants. These contracting agencies build and maintain roads, dams, domestic water conveyance systems, sewers, flood-control structures, and storm drains, and ensure the safety and supply of groundwater and surface water. I added these agencies and functions to the list by Tepel (1995, p. v) in Figure 3, and I don't understand why Tepel neglected them. These governmental agencies could be considered *sui generis* in terms of their excellent, unassailable, nearly perfect ability to select professionals to provide services.

Tepel's (1995, p. v) list focused on taxpayers and the agencies that act as overseers: overseeing EIR preparation, environmental cleanups, and cleanup after natural disasters. I doubt taxpayers pick up much of the tab in these activities. From personal experience, I've observed that developers pay essentially all the costs of EIR preparation. Based on what I or anyone can glean from personal experience or being

generally cognizant, we know that developers, property owners, and their insurance companies pay much or most of the costs of site cleanups in the case of environmental contamination and rebuilding after natural disasters. Consequently, I don't see why the role of taxpayers should take center stage in these situations.

One other party one could include in a list of "stakeholders" in quality geologic practice is other design professionals. Architects and civil, structural, and geotechnical engineers engaged in private practice are often involved in hiring engineering geologists for a project. They may be considered intermediaries between the ultimate consumer and the professional, in this case the engineering geologist. They may select from among engineering geologists in a firm in which a variety of professionals work. Or, if they run a tiny outfit, they may select from among a stable (like horses) of engineering geologist with which to work, either as contractors under the outfit's corporate umbrella or by way of introduction and recommendation to the property owner consumer. Unfortunately for us engineering geologists, these architects and engineers tend to obtain, possess, and develop the necessary contacts with clients. Typically, clients run first to architects or engineers or construction management firms run by engineers (or MBAs). We engineering geologists (unfortunately) tend to serve as tag-alongs and find ourselves low on the food chain. We still tend to find ourselves in this position even several decades afterward where licensing of geologists was enacted.

The As, Es, and MBAs, Specifically

One may wonder how well these architects, engineers, and business types perform their function in this intermediary role. They have the opportunity to observe our general intelligence, work ethic, communication skills, judgment, and wisdom. This function doesn't pose huge problems, and I'd give the results a grade of C.

The A/E and MBA types also have the opportunity to observe our competence in wielding numerous general geologic principles and drawing on many years of advanced on-the-job learning and judgment to solve complex geologic problems. Unfortunately, their judgments are often flawed, and I'd give the results of this process a grade of D.

When looking back on when engineers/managers have selected geologists to work on projects or selected from among geologic conclusions presented by differing engineering geologists, I've been concerned when observing certain cases. In many cases, certain geologists used severely flawed reasoning to arrive at incorrect inter-

pretations, and these same geologists were able to hoodwink engineers into believing him or her, despite another geologist presenting an alternative, correct interpretation.

The case of the amateurish fault traces. A published planner's map was prepared showing fault lines passing through various topographic saddles, as an undergraduate geology student might do, without regard to principles of neotectonics or attention to bedrock geology. I have a hunch this fault-hazard map was actually prepared by a geologist who may have barely earned a B.A. in geology somewhere but achieved little else of practical worth. Subsequently, a geologist whom I observed latched firmly onto these mapped interpretations. He then reviewed aerial photographs and added yet more illusory photointerpreted fault traces. Faint lineaments involving oak trees and subtle soil tones, crossing laterally through the middle of a set of coalescing alluvial fans highly disturbed by human clearing activities but otherwise undisturbed topographically, in his eyes, became faults. "They're faults!" he insisted. I looked down the same stereoscope at the same aerial photographs and gently said, "no, they're candidate fault traces at most." Actually, they were barely perceptible features at the limits of human visual perception. And based on what I had learned of neotectonics and geomorphology both in school and in practice, these faint "lineaments" were nonsense drowned out by noise: crud below any signal-to-noise threshold.

I reminded myself of Percival Lowell's canals of Mars, which he documented by peering through his telescope from a mountaintop in Arizona early in the 20th century. Whatever Lowell perceived — his "canals" — supposedly were the work of a race of Martians feverishly distributing water from wetter to drier regions to make the planet habitable. Few other contemporaneous astronomers could duplicate Lowell's work. Even at the time, Lowell's perceptions and interpretations were debunked. Eventually, with the Mariner and Viking robot flybys, orbiters, and landings of the 1960s and 1970s, they were permanently relegated to the dustbin of pseudoscience.

Meanwhile, back at the ranch — literally, returning to our photointerpretation of this ranch site in central California — and to cut a long story short: a combination of managers and engineers believed in this random lacework of lineaments. They embarked, and I was involved as a trench soldier, on a program of several thousand lineal feet of trenching. Nothing of interest was found.

Inattention to sedimentology. A geologist used sedimentology — e.g., particle rounding, particle relationships, rock types, and provenance — to interpret soil/rock cores from a site and arrive at a (correct)

interpretation: Pleistocene alluvium. A second geologist reviewed the same sample cores and interpreted the material as Jurassic volcanic bedrock (incorrect). A high-ranking engineer acting in an overall managerial role believed the second (faulty) interpretation by the second geologist.

Drastic alteration of core logs. The same first geologist in the previous case entered a zone of poorly sorted/well-graded sand (correct) on a draft core log. The same *second* geologist (same case as above) deleted this entry and altered it in the final report to read "Jurassic volcanic bedrock" to suit his preconceived notions. Again, the engineer went along with the second (incorrect) interpretation. These alterations and errors were, amazingly, incorporated in a final geologic report in a forensic project to address a legal dispute (the client, one of the disputants, was one of the dozen or so largest city governments in California). The firm presenting this final, error-ridden report was eventually replaced by another firm. The replacement firm employed a sort of "gold standard" in subsurface exploration, large-diameter downhole logging, which confirmed the logs and interpretations of the first geologist with the first firm and exposed the errors of the second geologist and his engineer referee.

Placing undue trust in published geologic maps. A geologic map published at a scale of 1:250,000 showed a contact passing a hundred feet west of a project site. This small-scale (crude) map showed the Omega Formation west of the contact and the Epsilon Formation on the east side (these are, obviously, fictitious geologic formation names intended to protect the identities of the individuals involved). Thus, the map showed the project site underlain by the Epsilon Fm. One geologist stated that the site was in fact underlain by the Omega Fm. based on subsurface samples collected at the project site itself. A second geologist, who should know have known better, and an engineer, who was being duped, insisted that the contact could *not* have been slightly misplaced, and the site could *not* be underlain by Omega and *must* by underlain by Epsilon. Later definitive data collection by an independent third party confirmed that the site was in fact underlain by Omega and not Epsilon.

Sketching to mislead engineers. A geologist performed a seismic-refraction survey showing a depth to bedrock of about 6 ft with minor random variations of ±1 ft. This was a gently sloping, topographically uniform site. Subsurface energy was delivered via sledge hammer. A diagram, Figure 4, is useful (the 120-ft-long seismic refraction survey goes "*into*" the diagram).

A second geologist disagreed: depth to bedrock could vary randomly by ±15 ft within a horizontal distance of 30 ft. For his engineer/manager, he drew a highly sinuous soil/bedrock contact on a whiteboard, as in Figure 5. He recommended a new seismic refraction survey up on the roadway embankment. This new seismic refraction survey would presumably be more accurate because it would (a) address the purported ±15-ft depth variation of the soil–bedrock contact and (b) be 40 ft closer to the proposed pipeline tunnel. This, despite (c) the depth limitations of seismic-refraction analysis when using a sledge hammer for energy input, roughly 35 ft, and (d) a need

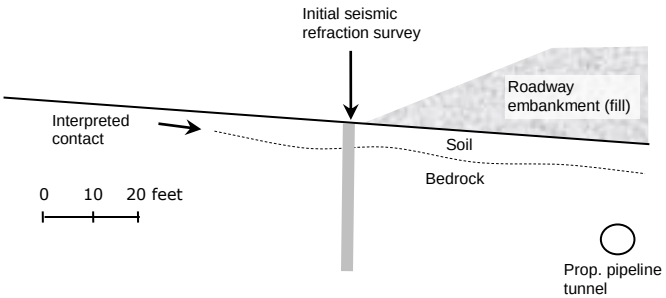


Figure 4. Work and subsurface interpretation by first geologist.

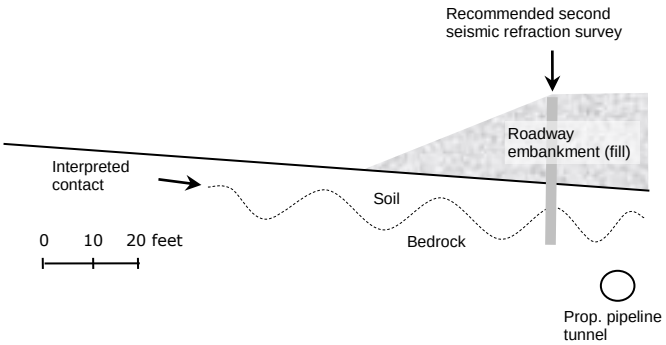


Figure 5. Subsurface sketch and recommendation for additional work by second geologist.

for delicate interpretation of seismic energy passing through a 25-ft. thickness of engineered roadway fill over native soil, which presents a case of possible seismic velocity inversion (higher over lower) and which is impossible to resolve using the simple techniques at hand.

The individual serving as project engineer and manager, observing this technical disagreement, was bamboozled by the conjectural, misleading soil/bedrock contact sketched in Figure 5. The second seismic refraction survey up on the roadway went ahead. Naturally, as one might expect, the subsequent survey showed no unusual depths to bedrock, could resolve no wild depth-to-bedrock variations, and gave no improvement over the initial survey, off the roadway.

The case of the illusory active fault trace. A geologist investigated a hilltop site within the Alquist–Priolo earthquake fault zone for the Hayward fault (California, specifically the San Francisco Bay area). Investigation was via a 170-ft-long trench perpendicular to regional fault trends, across the hilltop. This geologist logged bedrock consisting of basalt, serpentinite, and then basalt again in three thick alternating steeply dipping zones (slabs). The two contacts between the three rock slabs were interpreted as extinct (late Mesozoic to Paleogene) shear zones dipping into the hillside, i.e., typical bedrock juxtapositions seen in the region. Well-developed Pleistocene soil horizons were logged passing uninterrupted over the bedrock shear zones. A, B, and C horizons and their subdivisions were documented based on zones of Pleistocene carbonate development, oxide imprinting, and translocated clays. An official reviewer, another state-licensed engineering geologist, observed the exposed trench walls and agreed with these interpretations. The nearest active fault trace was interpreted as passing nearby but offsite, as documented on a highly regarded map of the Hayward fault trace by a respected U.S. Geological Survey scientist. The geologist recommended a generous, responsible buildable zone for a few building units, although the zone was slightly restricted by end-of-trench setbacks for lack of data beyond where it was practical to explore (city street on one end, extremely steep slope [fault scarp] on the other).

The owner wasn't fully satisfied. Watch this now: The owner and *his engineer intermediary* brought in a second geologist.

The second geologist, for reasons unknown, excavated short trenches across the two shears logged by the first geologist. In this second investigation, basalt was reinterpreted as serpentinite and serpentinite as basalt. Gleying (amorphous, semirandom, grayish-greenish-bluish coloration zones caused by recent anoxic conditions) due to localized landscape irrigation fooled this second geologist into misinterpreting the two main bedrock types and also into logging a wild assortment of other igneous, sedimentary, and metamorphic rock types. No pedologic soil horizons were logged. A barely perceptible dip of some 1 to 2 inches in a soil/bedrock contact, of the random

type we routinely see wherever we geologists trench, was interpreted as an active fault trace. This fault trace trended 50 degrees off the main trend (strike) of the Hayward fault in the vicinity. This purported offset connected contacts between the misinterpreted rock types (no wonder its orientation was wildly skewed). It also purportedly showed a normal-fault sense of displacement, counter to local hillside-forming processes by the Hayward fault that should display a thrust style of displacement. It also was mapped as passing straight across a hilltop, a broad, nicely rounded knoll through which no one had previously mapped any geologic (hazard) discontinuity. This would be a first: a pressure ridge, but in a reverse configuration(?), or a sag pond, but in a reverse configuration(?!), and an active fault trace wildly skewed from regional trends and passing across a hilltop, and based on a random, barely perceptible blip in soil depths, and on wildly faulty bedrock interpretations, and on an ignorance of soil stratigraphy and critical fault age dating.

Presumably the findings of this second geologist could make their way into the State of California's database of official fault traces on future earthquake fault zone maps. I hope not. This geologist may find himself stuck in a quagmire that enveloped the case of the illusory Antioch fault. I considered reporting this situation to the state's Department of Consumer Affairs, specifically its Board for Professional Engineers, Land Surveyors, and Geologists. I'm human, and the temptation was there. I then reminded myself that state interference in professional–consumer relationships is unwise. Several other considerations also stopped me (see Table 1 and discussions, below).

Recall that I said that an engineer acted as intermediary between the owner and the two geologists in this case. This engineer facilitated the switch from the first geologist, who arrived at correct interpretations, and the second geologist, who botched the job. What guidance did this engineer have? Licensing didn't provide any. Both geologists were professional geologists licensed by the State of California and both were engineering geologists certified by title act by the same state board.

In all the cases described above, one geologist presented correct interpretations, a second geologist presented incorrect interpretations, and an engineer, given alternatives, still selected the incorrect geologic interpretation. This occurred when an engineer chose the wrong interpretations from a selection, either acting as a manager selecting among geologists and their interpretations within a firm or when acting as an intermediary in a more complex, distant set of relationships between a landowner client and distinct professionals. Which-

ever the case, Tepel (1995, p. v) was correct when pointing out the stakeholder role of "fellow design professionals, engineers, and architects, who rely on our expertise …".

It would seem that architects and engineers and construction project managers, who act as intermediaries between us geologists and the ultimate consumers, need assistance in making selections. Did licensing of geologists provide this needed, critical assistance? No. This fact bears repeating: The geologists in the cases described above were all PGs licensed by the State of California and CEGs certified by title act by the State of California.

How well did companies fare in selecting for a high level of geologic practice? Not so well either. Thus, we see the weaknesses of both licensing and corporate functions in providing a certain level of service to consumers of geologic services.

Let's summarize, in Table 1, where we're at.

Table 1. Summary of scenarios discussed.

Question: Did the erring PGs successfully employ …
… geologic principles at an **advanced** level?
… geologic principles at a **basic** level?
… principles of **ethics**?

In the case of the …			
Amateurish fault traces	YES	MAYBE	NO
Inattention to sedimentology[a]	YES	YES	NO
Altering of core logs	NO	YES	NO
Undue trust in geologic maps[b]	YES	MAYBE	NO
Sketching to mislead others	MAYBE	YES	NO
Illusory active fault trace	YES	MAYBE	NO

a. We can't expect that all minimally qualified geologists have done well in an undergraduate course in sedimentology and a graduate course in sedimentary geology.
b. We can't expect that all minimally qualified geologists have done well in Field Geology.

Note how Table 1 parses these scenarios in terms of ethical behavior, basic competence, and advanced geologic knowledge. All the scenarios presented involve professionals with several years of experience under their belts. The experiences of these professionals were all in California, a highly challenging environment in terms of engineer-

ing geologic practice. Thus, what we've been examining were cases in which advanced geologic knowledge was important. It may be unfair for us to expect licensing to perform well in these cases. Licensing is only intended to set a floor for ethical and minimally qualified practice. Review the first two columns in Table 1: perhaps licensing is just minimally competent at setting a minimal level of ethical and competent practice in engineering geology.

One may legitimately set the bar high for firms and expect them to do these basic tasks and much more. And earlier (Chapter 3 and elsewhere), I offered firms and the intermediary role they serve between professionals and consumers as an important informational buffer. Firms, when they take on complex assignments, need to provide ethical behavior, basic competence, and competence at the upper margins of professional practice if they're to serve their clients well.

Consider this: I've noticed, anecdotally, that firms tend to thrive when they give good geologists free reign, as managers, to select good subordinate geologists and their correct interpretations. I could cite by name several such firms. Those firms in which engineers and other nongeologists do the selecting tend to wither, and, again, I could cite by name several examples. Firms in which technical competence, training, communication, analysis and wisdom, and internal cooperation are appreciated and promoted tend to flourish. Those firms and other informal agglomerations of associates that practice and promote politics, incentives (to the exclusion of training), elbowing, internal conflict and aggression, management by decree, cost cutting and other arbitrary metrics, and technical ignorance tend to fall by the wayside. Some firms have staying power; others (most) don't. Firms come and go. In contrast, a licensing board is always present, never to come or go regardless whether it hits any (low-level) targets presented before it, and it can be hard to spot where licensing serves as a decisive factor where critical, high-level geologic decisions needed to be made.

We could, thus, start a whole new round of argument at these upper echelons of professional practice. We could reach for a legislated, administrative solution, i.e., higher levels of licensing and certification. Or we could allow companies plus a galaxy of voluntary/legal solutions to serve as filters and place their spotlights on the practices of wise, intelligent, highly technically competent practitioners. The reader, perhaps armed with the data presented everywhere else, earlier and later in this book, will be able to choose wisely.

This discussion has been (ironically) only *minimally* relevant to our analysis of the foundations of licensing. It may not even deserve

placement in this book. If it does, it would be for these lessons which it serves up: (1) We need to pay attention to relevant data categories. Do the data inform us as to ethical and minimally competent practice, which licensing addresses, or advanced practice, which licensing does not? (2) Anecdotes are just that. I'm a scientist, and I recognize when anecdotes are no substitute for a scientific analysis with proper controls for relevant variables. Anecdotes are not scientific data until and unless we collect enough of them and analyze them critically and thus turn them into true scientific data. I have not done so, and a critical reviewer may take me to task for this. Anecdotes stand at the beginning of the scientific method: the observation stage. They are a launching point for hypothesizing, testing, and analysis. (3) We are all enamored with case histories. They're fascinating. Licensing proponents like to cite anecdotes in support of licensing either as talk among geologists themselves to invigorate and marshal the troops or as testimony to influence legislators. When doing so, they would be wise to examine exactly what they are doing.

Analyzing motives is problematic. It might serve only a limited purpose. Verbalizations of financial motives by professionals are rare, camouflaged, and censored. Still, published studies and other circumstantial evidence suggest that licensing is an interest-group deal cloaked in public-interest clothing.

6. Motives

Were it possible to find "master minds" so unselfish, so willing to decide unhesitatingly against their own personal interests or private prejudices, men almost god-like in their ability to hold the scales of justice with an even hand, such a government might be to the interest of the country, but there are none such on our political horizon, and we cannot expect a complete reversal of all the teachings of history.

FRANKLIN D. ROOSEVELT

In spite of everything, I still believe that people are really good at heart.[136]

ANNE FRANK, 1944

✍

Licensing proponents appear to have latched onto one of the cardinal rules of political advocacy: that one must cloak one's proposal in appeals to public interest. This is probably why it's been rare in recent years to see statements such as one by William Henkle and Ellen Hodos (1993) that geological licensing results in "increased professional credibility, prestige and recognition ... [and] potential for increased rates or salaries for geologists." Or this one by Neel (1994): "In the late 1950s and early 1960s, engineering geologists became disturbed by the salary and job status inequities between themselves and civil engineers," prompting engineering geologists to seek licensing of their profession.

Monetary incentive was once earnestly listed among the benefits of licensing. Such utterances are now shushed. You may hear them whispered among the professionals to be licensed, safe from eavesdropping by those outside the profession (legislators, consumers, the press). But you will no longer see them placed into publication, and the licensing advocates and leaders in the profession have performed well their job of marshaling the troops and focusing their efforts.

The debate over motives and power is one of the thornier ones in the issue of professional licensing. Many licensing opponents contend that those who advocate licensing do so out of a desire to raise incomes, achieve higher social status, protect professional turf, and obtain more power.[137] The advocates are appalled at the charge. They may say they've wracked their memories and searched their hearts and give assurances they've neither seen nor felt such avaricious desires: licensing is only pursued for the benefit of the public.

There would seem to be an impasse. One can't ever know for certain what's in someone's heart or what someone's motives are. One often has to take someone at their word.

In fact, it might seem risky to search out and criticize selfish motives when one of the main arguments against licensing rests on the elegance of the market (Chapter 3). *Self interest* is itself at the root of the market. Self interest harnessed by the market becomes a force for good and leads to the high levels of prosperity and freedom found in the western economies.

In the following statement Tepel (1995, p. 27) might have been trying to hitch licensing to this idea of self interest as a force for good:

> Some philosophical thinkers recognize that professionals play an important part in our society and that, if they are to do it well, they should be granted some power and privilege.... [A]ccusations are made with an understated underlying assumption that the mere seeking of status, turf control, or power, or professional parity, is in and of itself reprehensible behavior.... [T]here might be redeeming virtues underlying the efforts of the power seekers.

Possibly.[138] Close. But I think not. The way self interest in a market works to the general benefit has been well documented since 1776, beginning mainly with Adam Smith's *The Wealth of Nations* (a work that placed the guilds under the glare of examination). In contrast, conditions where self interest and political power are allowed to interbreed to the general *detriment* have been documented repeatedly throughout history.

Self interest is like a gas that fills any size container it's admitted into. In a market, self interest is well contained. Both parties in a transaction know that the other is operating out of self interest. It's a natural, accepted, implicit element in every transaction. Both parties are aware of its proper limits. Self interest is limited by the fact that the potential parties to a transaction are free to go elsewhere if the terms aren't to their liking. Neither is forced to trade. If one party detects unchecked self interest in the opposing party and finds the terms not to his liking, he can go his own way.[139] And it's rarely a one-to-one negotiation. Prices and quality are determined by the preferences, voices, and actions of thousands of people acting across thousands of miles of country. The price tag on, and quality of, a bunch of carrots at your local market, or the fees you might pay to (or quality of) your accountant, doctor, dentist, or lawyer, or the fees you as a geologist charge your clients are all a reflection of the *millions* of decisions people around you have recently made and are making at the very moment you read this. It's all highly, sort of, democratic.

In politics, however, self interest is hidden. Policies are routinely cloaked in the language of "the public interest." Policies are decided by politicians, in meetings, at regular time intervals, in special wood-paneled meeting rooms, and with highly regulated rules of order. Those same politicians are voted into office by way of little more than a popularity contest, as in the title *senior class president* in high school. At the same time, self interest is allowed to expand nearly unchecked. The general population isn't free to go elsewhere to escape a political decision except at great personal expense (pack up and emigrate), and sometimes not at all (stare across the sea from a beach in Cuba). If

one is in the minority in a vote, one is forced to go along with the majority. This gives the winners tremendous power over the losers, who can number in the millions. And where there is tremendous power, self interest and other motives exert a tremendous effect. The politics of greed always comes wrapped in the language of love. Secrecy, hypocrisy, wealth, and power make a volatile mixture.

I so enjoyed Steve Kroft's exposé of greed in Congress, televised November 13, 2011 (Kroft, 2011). I say *enjoyed*, since my estimation of Congress can't be lowered any further, and my estimation is roughly matched by U.S. public approval for Congress, which hovers in the single digits or low double digits around the time of this writing. It was reported that members of Congress and their aides have regular access to powerful political intelligence, obviously, and many have made well-timed stock market trades in the very industries they regulate, and they've been treated as immune from legal prosecution for doing so. Observe Kroft's dialog with former U.S. Speaker of the House, now Minority Party Leader, Nancy Pelosi (D., Calif.), in a press conference:

> Steve Kroft: Madam Leader, I wanted to ask you why you and your husband back in March of 2008 accepted and participated in a very large IPO deal from Visa at a time there was major legislation affecting the credit card companies making its way through the — through the House.
> Nancy Pelosi: But —
> Kroft: And did you consider that to be a conflict of interest?
> Pelosi: The — y — I — I don't know what your point is of your question. Is there some point that you want to make with that?

More flustered denials from Pelosi followed. Watching the broadcast, I so wish Kroft then had simply said, "No point. Just a question. Your response, please." Later, Congresswoman Pelosi's office called Kroft's report a right-wing smear.[140] Soon thereafter there was a flurry of congressional action to purportedly "address"[141] Congress's formerly secret supposed immunity from laws against insider trading.

The roles of campaign finance and money in politics — political action committees, donations, influence peddling, lobbying, and outright bribery — are so often denounced. And legislation to stomp out such antidemocratic forces is so often attempted. Yet so few will point out that such stompings are merely bandaid, patchwork solutions to a deeper problem. Few will point to a true solution: limit the power that legislatures have over economic issues and shut (nearly) the federal spigot that spews vast amounts of money, and you'll attract far fewer

lobbyists and super political action committees. Extinguish the flame, and the moths will flutter elsewhere.

The Value of Motives

As powerful as any such revelations might be, the question of motives isn't of paramount value in our discussion. This may come as sort of a letdown. Even if motives could be divined, what would motives matter? Is anyone ever harmed merely by another's motives?

Anderson might sit in his living room night after night seething with a desire to literally crush his neighbor, Jones. Is Jones harmed by Anderson's thoughts? Suppose Jones has no knowledge of Anderson's mental agitation. Or suppose Jones *does* know; is the situation changed? How? Suppose Jones also knows that Anderson is paralyzed from the chest down and is completely incapable of ever lifting a finger to harm Jones; what then? Alternatively, suppose Anderson is a healthy, physically hyperactive individual, and suppose he runs to Jones' house and threatens to drop a boulder on Jones' foot, and suppose he carries out the threat. Is Jones harmed at the point the boulder drops, or earlier, when Anderson makes the threat, or even earlier, when Anderson begins to entertain his crazed motive?

What if Anderson has no such motive but nevertheless drops a boulder on Jones' foot accidentally while Jones pays a visit to Anderson's house? Clumsy oaf. Is Jones entitled to any less compensation from Anderson for his medical bills and pain and suffering in this case than in the case where there was a motive? Maybe making Anderson pay would teach him to be more careful. Note that, presuming that you've been involved in an automobile collision, motives usually don't figure into any payment calculations.

Thus, motives are information of such dubious quality. Searching out motives stems from such primitivism. Motives are mere circumstantial evidence. It's all rather distasteful compared to gathering information using economics and the other sciences of observation to show that licensing enriches licensed professionals at the expense of consumers, particularly poorer consumers. It seems so much more fruitful to concentrate on actions and outcomes than motives.

Yet, that doesn't mean there isn't any more to be said regarding the motives of professionals when they press for licensing. People generally seem to be very interested in other people's motives. This is probably because knowing motives serves some primitive, sociobiological survival value. If Jones thinks he knows Anderson's motives, they become a clue regarding potential future events involv-

ing his neighbor, Anderson. They could suggest to Jones whether Anderson poses a hazard (in the future). Motives could help in fingering a suspect in a crime (an event in the past). Say Jones has a boulder dropped on his foot by someone wearing a sheet with holes for eyes: the prime suspect might be a motivated Anderson under the sheet. Judges and juries impose prison sentences on guilty criminals based largely on their motives: such people pose a danger. Likewise, motives yield the same sort of information regarding whether someone currently is being taken advantage of.

Observers appear to *perceive* a shortage of hard evidence and hard arguments for or against licensing. And in situations where information *seems to be* lacking, people will seek information of any grade and source, and risk using it, when the stakes are high enough. (I trust, though, that the data presented prior to this chapter already constitute a sufficiently sturdy summary of arguments against licensing.) People are interested in motives.

Smoking Guns

Recall that at least one geologist has said "there's no smoking gun": there's no evidence for any malevolent motives behind geological licensing. Licensing proponents think this makes their position unassailable. In a sense, perhaps it does. Indeed, there's little in the way of a smoking gun (if we ignore, for now, the financial motives that a few careless licensing proponents have exposed and presented in writing).

But this is a distraction. Asking for a smoking gun is expecting the impossible. There never could be a smoking gun unless someone wants to round up certain geologists, physically restrain them, inject them with truth serum, and interrogate them with regard to motives.

A motive is only an abstract concept. It's not a physical object to look for as evidence in a crime, as in a smoking gun. When we speak about an abstract concept as if it were a physical object, we engage in reification, one of the more virulent errors in thinking. And when we give credence to the lack-of-a-smoking-gun defense, we are letting ourselves be unduly impressed by negative evidence. As former Santa Clara County (California) Geologist James Berkland liked to tell me, "absence of evidence isn't evidence of absence," when he and I stood on opposite sides of a counter to discuss investigations of geologic hazards. Berkland was citing a principle that has roots far back in the history of science and further back into antiquity and guides scientists and philosophers to this day.

Still, licensing isn't quite as immune to accusations regarding motives as it appears. Most of us have probably discussed licensing with one or more of our fellow geologists from time to time. I, too, have had a few such discussions with members of the San Francisco Section of AEG, of which I was once a long-time member. Three out of perhaps six individuals I spoke with on the subject expressed a fear of the adverse impact to their (and my) jobs and incomes as their primary concern with regard to the continued existence of licensing in our state of California. Our jobs and incomes as licensed geologists would suffer as low-ball paraprofessionals enter the market offering to write $500 geologic letters for property owners, presumably based on a cursory review of published maps and minus so much as even a site visit. I offered no immediate, detailed disagreement or consolation. Their view might have a glimmer of merit.[142]

The extent to which incomes of licensed geologists in an area would decrease, if licensing were abolished, is unknown; it's doubtful their particular incomes would increase.[143] The intriguing outcome of this, for me, was that of the few such conversations I can remember, the unsolicited, first, primary concern expressed by my companions was for the incomes or status of geologists — not for consumer protection. These individuals are people I couldn't possibly respect and like more, both as geologists and as people. Two were, at the time, former high-ranking officers in the San Francisco Section of AEG. I would consider these and the other people I've spoken with to be reasonably representative of the profession. These are only anecdotes, and the evidence is only anecdotal.[144] Yet it shows how one can make one's own informal assessment of the motivations of one's fellow professionals. Make your own inquiries and hold your own discussions. Also, ask yourself: Does the high degree of concern for the professional's income I encountered seem to be some bizarre aberration? I suspect not, and it's not because we have a tendency to be suspicious in general of our fellow professionals' motives; quite the contrary.

Those Who Seek Licensing

Economists have long suspected that the motive behind licensing is to restrict the supply of practitioners, thereby raising the comfort levels of the licentiate. One of the main indications of this motive is that licensing is usually initiated by the professionals to be licensed rather than consumers (e.g., Friedman, 1962; Stigler, 1971; Gellhorn, 1976; Ostry, 1978; Rottenberg, 1980; Shimberg, 1982). If one wants

to see a recent naked instance of this kind of situation involving engineering geologists, read Neal (2011). This seems to have the tail wagging the dog. If things were normal, it would be consumers doing the initiating, since consumers purportedly gain protection from licensing. I've yet to observe anywhere — published literature, popular press, anecdote, personal communication — an instance in which a consumer or group thereof has asked for licensing.[145]

Tony Crespi and Joseph Gillen (1995), psychologists, argued for licensing of marriage and family counselors; the subtitle of their paper: "Autonomy and opportunity for health care providers." The newly founded Professional Cat Groomers Association wants cat groomers to be licensed (Simon, 2011). It's doubtful many consumers (cat owners) have expressed an interest in this. But the groomers' professional association, of course, has.

Numerous observers in various fields have seen this inversion. Smith (1996b) reported that consumers and legislators in California generally express little interest in licensing. "Past efforts to license professionals and protect consumers are regarded largely as flops by the California legislature and the administration." There have been complaints "from both liberals and conservatives about the functioning and integrity of consumer boards, some of which date back to the 1920s." Marjorie Berte, director of the California Department of Consumer Affairs, called the boards barriers to competition: "Eliminating some boards and streamlining others trims the tangled web of bureaucracy and promotes competitive business while still safeguarding consumer interests." Smith (1996b) said that the state's conclusions have attracted little opposition from consumer groups. Two excerpt from a lengthy study of teachers' unions by Dale Ballou and Michael Podgursky (2000) read as follows:

> There is a clear correlation between union influence and the establishment of a professional board. … Both the NEA and AFT have been strong supporters of the certification of teachers [p. 75].

> Teacher professionalism offers some clear benefits to unions. The activities over which the profession seeks control — accreditation of teacher programs and teacher licensing — are well-recognized means of restricting supply. … By limiting the number of practitioners, licensing boards restrict competition and put upward pressure on salaries [p. 76–77].

Licensing of geologists in California came under political attack in 1996. It was saved for another four years, until the next sunset review, due to strong support "from individual geologists, county and city agencies and professional organizations, primarily the Association of Engineering Geologists," according to the State of California Board of Registration for Geologists and Geophysicists (Anonymous, 1996g). It's reasonable to infer from this that there was no outcry from California's consumers for saving the licensing board. The California licensing board's own conclusions regarding AEG's role in saving licensing suggest the benefits that accrue to the profession from the often tight relationships enjoyed between the licensing boards and the leading organizations of the professions being regulated. Donald Martin (1980) observed that special-interest lobbying prevents most boards from being sunsetted. Despite the fact that 29 states had enacted sunset laws by the time of his writing (Martin, 1980), sunsetting hasn't had much effect. Economists have often complained about their lack of success in educating state legislators in the ways that licensing benefits licensed professionals at the expense of consumers (Rose, 1983).

Consider Emrich and Wright's (1990) chronicle of events to get geological licensing enacted in Pennsylvania. They characterized their efforts from the beginning in the early 1970s through the early 1980s as round after round of disappointment. Bills were introduced at various points during those years but always died an early death somewhere in the legislative process. In the early 1980s, geologists in Pennsylvania bought themselves some political savvy in the form of a paid lobbyist. By 1985 the geologists and their lobbyist were able to shepherd a bill through the legislative houses only to see it vetoed by the governor, who could see no reason for yet another licensing board. The geologic community then felt particularly stymied. In 1989, companies with geologic ties formed a group, the Pennsylvania Council of Professional Geologists, to monitor geologic issues and pay for a lobbyist. Emrich and Wright (1990) reported that in 1990, "the registration bill for geologists in Pennsylvania has been re-written under the direction of our lobbyist and introduced into the legislature. We believe that only through a strong confederation of dedicated geologic firms and geologists, who are willing to expend both time and money, can and will geology take its rightful place in the legislative process."

One might look at this article as just the telling of the story of a group of geologists slowly learning to crawl, then get on their feet, and then walk in the political arena as they try to get licensing enacted

in their state. What is striking about the story, though, is its overall tone and what the story lacks. Although the writers offer a few perfunctory nods to public health, safety, and welfare, the overriding theme of Emrich and Wright's (1990) paper is the tenaciousness on the part of geologists to have their profession licensed. As the story is told, the Pennsylvania geologists struggled repeatedly for almost 2 decades to enact licensing, spending much of their own time and money, and bouncing back from numerous setbacks along the way. And they fought for licensing essentially on their own. There is no mention of any input or assistance from consumers, who were purportedly the focus and beneficiaries of the proposed legislation. There is no mention of any economic studies used for backing nor any soul searching into whether licensing were the right thing to do. In this paper, as is nearly always the case, any motives are hidden in the grass. Yet, one can often sense a motive with some confidence when given an adequate description of the actions of a group of people. Savit (1990b), a geophysicist, was willing to recognize that most, if not all, initiatives for geological licensing originate not with consumers but with those who would be licensed. And based on this and other observations, Savit concluded that the motive for licensing is simple restriction of entry into the profession.

The benefits from such relationships have been pointed out in other, larger professions. For example, Paul (1984) concluded that decisions by state governments to require licensing of physicians were usually a result of special interests rather than consumer interests. He found that the year a state enacted licensing of physicians was related to the number of members of the AMA in a state. Indeed, the AMA was launched by a movement that formed to defend licensing of physicians when it came under pressure in the 19th century (King, 1982). Paul Feldstein (1977) perceived that health associations act like firms in that they try to maximize the interests of their existing membership. Pruit (1993) reported how the American Medical Association followed a campaign early in the 20th century to abolish medical schools outside its control. It was easy for the AMA to do this because it controlled the medical licensing boards, which would, sometimes by statute, consider only graduates of schools approved by the AMA. Thomas Moore (1961) reported that citizenship requirements were imposed in regulated occupations in Illinois in 1939, at a time when there was a large influx of trained practitioners from Europe. Judith Shival (1995) concluded that the Israeli medical profession used licensing along with other mechanisms to maintain its boundaries and control in the face of the arrival of 12,000 immigrant physicians from the former Soviet Union as it dissolved.

According to Boulier (1980), dentists too recognize that licensing advances their economic interests: responses to questionnaires showed that dentists in states where fees are above average were less in favor of nationwide reciprocity than dentists in states where fees were below average.[146] Paul Swiercz and James Skipper Jr. (1983) charged professsionals with using their associations, the legal system, and licensing in concert to gain power and privileged position. According to Koogle (1990), an engineer, NSPE adopted licensing of engineers as its primary mission from its beginning. The organization was a prime lobbyer for registration. Being licensed is even a requirement for full membership in the NSPE. Interestingly, Koogle (1990) said engineers pursue licensing, naturally, out of concern for public health, safety, and welfare, whereas when *other* technically oriented groups — which often find themselves in conflict with the NSPE — pursue licensing, it is "*hopefully* in the public interest" (emphasis added).

One of few writers who has taken a less jaundiced view of the situation is Xueguang Zhou (1993), who said that, along with occupational power, simply the growth of state power also played a significant role in the advancement of licensing in the U.S. during the 1890–1950 period. Depending on one's view of the growth of state power, though, this might not provide much comfort.

Shryock (1967) noted a time when consumers actually took the lead in rolling back licensing, specifically medical licensing during the Jacksonian Era (1830s United States). This event is so striking that it bears repeating, with emphasis, to drive home the point: *consumers took the lead in rolling back licensing of doctors*. That particular era in U.S. history was characterized by populism, with common Americans trying to exert their influence against government policies and big institutions, including monopolies. Shryock said a strong movement succeeded in abolishing or amending many of the medical licensing acts in force at the time. Americans had become disenchanted with the restrictive practices and attitudes prevalent in the medical societies. The years following deregulation saw no stagnation in medical technology. Indeed, Tabachnik (1976) reported that this temporary deregulation of the medical profession in 19th century America stimulated the growth of medical schools, increased the number of doctors, raised average standards, and wasn't as bad as the leaders of American medicine at the time expected it to be.[147]

Altruism

Licensing is frequently defended by saying that geologists don't enter the geology profession looking to get rich. Clearly this is correct. Geologists don't. Neither do they intend to nor do they.

Like many arguments offered in favor of licensing, this is off the subject. Geologists might not become geologists to get rich, but it's also equally true that few people, once in the geology profession, would turn down a raise in pay if it were offered to them; likewise, we could expect many to resist a potential cut in pay. It's doubtful that geologists support licensing because it promises a cut in their pay.

Some defenses of licensing, however, do push almost that far. In response to the charges of impure motives, some licensing proponents profess their motive to be altruism, a relatively pure desire to assist consumers in obtaining quality professional work. This statement by a prominent licensing advocate, brief as it is, is so revealing that it deserves special, standalone, block-quote status:

> If professionals who promote licensure are guilty of anything, it is altruism (Tepel, 1995, p. 29).[148]

Now, perhaps I'm just not discerning enough or good (altruistic) enough myself to see this altruism in others, but I find Tepel's claim to be a thoroughly amazing one.

We can probably accept that most people are altruistic some of the time, some people are altruistic most of the time, and Mother Teresa was and a handful of others are altruistic all the time. But to assert that geologists are being wholly altruistic when promoting licensing, and most of them do indeed support licensing (recall Gale et al. [1990]), is to say that the geology profession is an anomalous, saintly cross section of society, containing an unusually large percentage of Mother Teresas, perhaps somehow endowed with that special extra altruism gene. It's possible, and I wish it were so. But most of us will agree that this probably just isn't the case.

It seems reasonable that geologists, instead, are just normal. I think that altruism, particularly among strangers in business relationships, is uncommon. Instead, an insistence on simple fair dealing is the norm rather than altruism.

If geologists who advocate licensing of their profession espouse as their pure motive to better public health, safety, and welfare, then it's odd that they concentrate such an inordinate amount of energy on instituting licensing of geologists.[149] Surely there are greater man-

made threats to public health, safety, and welfare than geologic malpractice in the absence of licensing. Wouldn't such threats include climate change, tensions in the Middle East, politically induced famines in Africa, illiteracy, sovereign debt crises, and the general coarsening of social relations? Surely the fact that we're geologists doesn't disqualify us from trying to alleviate these serious problems.

We're geologists. We could donate a few weeks per year in Africa helping locals there develop simple maintainable systems to access drinking water from safe, close-at-hand underground or surface sources. Women wouldn't need to spend most of each day trekking 17 miles round trip to a filthy spring to haul a few gallons of questionable water back to their families. They could instead spend those hours growing cash crops, which they could sell to earn money to buy a bit of schooling for their children. Surely such efforts would yield an immediate 10-fold return on investment by preventing infant deaths by internal parasites and by development of human capital. Is Africa too far for you? Or have the Chinese beaten you to it?[150] Then seek out a forgotten Native American reservation or rancheria in the southwestern U.S., where a new well and some piping and water analysis could do wonders.

We're geologists. We could volunteer to serve as experts in mediation or arbitration in small disputes between consumers and professional geologists. I speak not of doing this as highly paid experts — at rates of $250 to $300 per hour — in high-level legal disputes. I envision geologists serving *pro bono* or for low fees in service to mediators in low-dollar-figure disputes in which consumers may have felt wronged by a geologist. Appendix C presents a detailed discussion.

Surely if one wishes to aid human health itself, one could work to outlaw fast food, high-fructose corn syrup, or tobacco, or if one wishes to promote safety, to outlaw motorcycles, hang gliders, scuba diving, mountaineering, or rock climbing. Ah, but then those all things people involve themselves with voluntarily, are they not? (and no matter: outlawing tobacco and taxing fast food are just around the corner anyway).

If geologists feel such altruism toward consumers, why doesn't it express itself in a call for geologists to donate a week's labor every year toward constructing low-income housing projects? Or why not call for a special tax on geologists, say $250 per year to go into the general fund? Or why not find out in the first place what sort of gift the public would like?

It seems such outlets for purely altruistic feelings by we geologists towards consumers — pardon me, "the public" — should be as likely

as professional licensing. Licensing is only one of many possible altruistic actions that could be taken by geologists. Instead, all we see are the exertions of a few geologists injected into the political arena to push for licensing of geologists. Thus it seems unlikely that altruism is behind licensing in any significant way.

Lay Oversight

How are licensing boards to be constituted; specifically, how many lay members should serve on it? Is there justification for a board with no lay members, as in Idaho (Hansen et al., 1990), or just one or a handful? Elton Rayack (1983) recommended a fully lay board to reduce the social costs of licensing, i.e., the "self aggrandizement," to use his term. Rayack would like to see boards made up of expert lay persons without any vested interest in a particular licensing act, with licensed professionals acting only in an advisory capacity.

If a fully lay board is too much, then what is the exact ratio of lay vs. the licentiate that results in that arrow in the bull's-eye: overall economic benefit in the aggregate? The nature of state force requires that such a number be explicitly selected. Theoretically, selecting an optimum number would need to be based on some sort of scientific study. We've seen few studies or even good discussions (e.g., Cohen [1980], Rayack [1983]) of what this number should be. Christine Cagle et al. (1999) studied the trends in appointing lay members to legal and medical licensing boards in three states. Those authors concluded that "although public acceptance of licensing boards might improve in the wake of appointing citizen members, such a cosmetic change does not necessarily ensure that the 'public interest' is protected [p. 734]." In contrast, note that a market economy requires no conscious selection of a number of overseers or any such lay/professional ratio.

The critical question is this: If the true goal of licensing and the true motive behind it is a blend of consumer benefits, value, and protection, then shouldn't a board consist mostly or wholly of lay consumers? This would seem axiomatic, as Young (1978) has pointed out. Yet, utterances to this effect from the licensed professions are difficult to find.

Many have paid lip service to the idea that the era of big government is over (does anyone besides me recall President Bill Clinton's insincere 1996 State of the Union Address when he said just that?). This lip service extends to the engineering profession, which recognizes that state licensing boards have become ensnared in plans to streamline government and save money (Anonymous, 1996c). But,

lumping engineering boards under umbrella state agencies along with boards for barbers, opticians, and pilots doesn't make sense, engineers say. Among the complaints are a lack of staff and financial resources to investigate and prosecute alleged violations of state licensing laws, insufficient money for educational efforts and travel to professional conferences, little budget and staffing control, and licensing and examination fees that get rerouted to help pay for the operations of other boards.[151] As a result, some boards fear being absorbed deeply into the state bureaucratic body, whereas boards meanwhile are striving for greater autonomy.

This seeking of greater autonomy from the governmental regulatory structure, of greater ability to use the resources and knowledge of the profession to police itself (Siegel, 1996), contains the potential for reducing consumer input through government. This shows an intolerance of oversight by lay consumers. This, in turn, I suspect, shows an unarticulated desire on the part of some licensees to see the profession take on some of the characteristics of a guild or an old boys club. We see the possible daylighting of this motive in utterances such as this: "Engineers cannot take a backseat to public administrators. The expertise lies with those in the profession. They know best how to protect the public health and safety" (Anonymous 1996c). We also read, "the public lacks sufficient knowledge.... Who better to recognize poor practice than the practitioners ...?" (Tepel, 1995, p. 29). Indeed, this view has a certain consistency and reasonableness to it. Ian Campbell (see Spellman, 1990) suggested that board members who hold licenses regulated by that same board can be trusted to uphold consumer interests. Interestingly, there is also the issue of unlicensed reviewers on design review boards sitting in positions to review work by licensed professionals. In this arena it is considered intolerable that the unlicensed judge the licensed (e.g., Chandler, 1990; Tepel, 1995).

Campbell's comment is especially odd in light of what judges (sometimes) and politicians (practically never) do when there is a potential conflict of interest, for example they own stock or an interest in a firm or industry under review. They simply recuse themselves from decisions where someone might infer such a conflict. They do so for both ethical and legal reasons. Gellhorn (1976) pointed out a subtle contradiction in this vein: licensing purportedly exists to address the concern that professionals aren't angels, and yet it is professionals who push for licensing and sit on its boards. I would say it's all quite ironic. Or incestuous, unethical, undemocratic, dishonorable — you pick the term you want to go with.

The U.S. Supreme Court took up this very issue in 2014 (*North Carolina State Board of Dental Examiners v. Federal Trade Commission, Case 13-534*). In an impartial analysis, Eric Fraser (2014a) wrote

> These state licensing regimes frequently have the effects of excluding competitors, raising barriers to entry, reducing supply, and raising prices. A private cartel would almost surely violate the Sherman [Antitrust] Act if it took the same actions as a state licensing board. But the licensing boards are blessed by the states … The FTC picked a good target for this important case. By law, six of the eight members of the dental board in this case must be dentists with an active practice.

In a 6–3 opinion handed down in early 2015, the court decided that a state licensing board is immune from the Sherman Antitrust Act *only if* a controlling number of board members are *not* the workers being licensed (read: are instead public members) or if the board is under active supervision by some other branch of government. I doubt much will change as a result. Who gets to select the public members on a board? The rest of the board. Which other branch of government is going to do anything but rubber-stamp the activities of a board? None. The oral arguments, however, were interesting (Fraser, 2014b):

> Justice Kagan … asked whether a state could look around at existing private trade associations and pick one to be a state agency. Counsel for the dental board answered that the formerly private trade association would instantly gain immunity from federal antitrust laws, as long as the members took an oath to enforce state law and were subject to open records laws and the state's administrative procedure act. That was a telling question and an even more telling answer. Under existing law, a state cannot extend antitrust immunity by allowing a private guild of winemakers to fix prices. Under the dental board's theory, [however,] the state could exempt the same guild from the Sherman Act by annexing it into the state bureaucracy. Justice Scalia said he doesn't buy it. At that point, he told the lawyer, "I get off your train." Justice Scalia never appeared to get back on the train, nor did most of the other Justices.

Licensing, then, appears to be snarled in a paradox of its own making. It exists to help consumers, requiring that consumers at some point oversee licensees. Yet licensing is built upon the notion that lay

consumers are unable to judge for themselves who can do geologic work.[152] Licensing proponents are unable to agree at which point of responsibility, of oversight (if anywhere), consumers — plus, let's not forget, their neighbors who live upslope or downslope or draw water from nearby wells — are to have a say in how licensing is to be carried out. It is said or suggested that only licensed professionals are in the proper position to police themselves. "Consumers, trust us." This is paternalism, and it speaks volumes about motives.

Licensing Fees

Professionals who are licensed pay the lion's share of the cost of running their respective state licensing boards. I've not seen a detailed cost accounting of licensing fees paid in one column versus board expenses in another column. Presumably the one proverbial pants pocket (income) is not connected to the other pants pocket (expenditures) of the licensing board, and the state's general fund acts as an intermediary banker and buffer between fees paid and board expenses. It may be possible for someone with much time on their hands and perhaps a freedom-of-information-act request to assemble such an accounting.

We could, however, compare rough order-of-magnitude fees and expenses. Licensing fees run approximately $200 per year per practitioner. Multiply that amount by a few thousand practitioners (in an average state) to obtain an annual income of roughly $1 million per year to a licensing board. This annual income may, or may not, cover the cost of running a state licensing board, but it still amounts to a substantial chunk. Tepel (2004, p. 22), provides his input:

> There is essentially no chance of changing the prevailing legislative philosophy that assigns the cost of a licensure program to the licensees, so continuation of licensure means that we licensed professionals will continue to pay its costs. … We [professionals] pay the costs of licensure and the public benefits …

There's no mention of financial input from consumers, presumably in the form of general state taxes paid into the general fund. What is this "legislative philosophy that assigns the cost of a licensure program to the licensees"? Is it a rationale that suggests that "we licensed professionals" are the beneficiaries of a given licensing program? Perhaps the legislators, with their "legislative philosophy," seem to "get it." Perhaps the legislature merely votes "aye" and — in order to look like

champions of "consumer protection" and being allowed to devote attention to more important matters — turns a blind eye and lets professional associations and their licensing boards do their own thing.

I do experience paying taxes on property, retail sales, gasoline, vehicle-registration, and income to the state in substantial amounts, and my neighbors do too. All of this goes into the general fund to finance the protection of my health, safety, and welfare and that of my neighbors. Output, in various forms of protection, goes to the services of police officers and firefighters (and education, under the rubric of general welfare), and other miscellany. These are all taxes and public functions that date back several decades or centuries. If the particular civilization in which I reside, California, weren't such a recent phenomenon, then such *impuestos* (impositions, taxes) and the functions they finance might even date back several centuries or millenia.

Anyway, when I peruse my tax bills and store receipts, I notice something very interesting. Contained within are several line-item taxes for specific public safety functions:

- Fees for sewer, storm water, and flood-protection systems on my property tax bill, to protect us from the obvious.
- Assessments and bonds for special school and library projects to educate my children, and, once they're out of school, to protect us from free-roaming out-of-school children.[153]
- Fees for mosquito abatement and other disease-vector controls.
- A waste-disposal fee on my used-up tires when I buy new ones, to presumably do something with the old tires and protect us from mountains of unwanted discarded tires.
- Well-publicized, voter-mandated, specific portions of sales taxes directed to mass transit and highway lanes, to protect us from congestion and smog.
- A redemption fee on beverage containers, to protect us from trash.

Most or all of these itemized fees and taxes are relatively new, just a few decades old. Local voters, as I've observed, have enjoyed imposing new taxes on themselves when allowed the opportunity to vote on them and after being shown the value of the new services they will receive in return. The epidemiologic hazard posed by mosquitoes is, obviously, new science dating back only about 100 years. The waste troubles posed by old automobile tires and throw-away

single-serving beverage containers are, similarly, new issues dating back only a few decades. Consequently, fees — imposed on individual property owners and consumers — to address these issues are also relatively recent.

Licensing of geologists, is also, likewise, a relatively new notion. It dates back roughly 5 decades (or less, depending on where you reside). We would expect, then, that consumers would (directly) pay the needed fees for this alleged consumer protection service. However, they don't. We see no assessments on property owners or developers that is specifically collected for or directed toward licensing of design professionals.

That's odd.

We see only a situation where professionals, behind the scenes, pony up substantial one-time and annual fees to, respectively, obtain and maintain their licenses to practice before the public. Or, perhaps, it's not really so odd: perhaps it was recognized that consumers and taxpayers couldn't be cajoled into voting to assess (tax) themselves to pay for licensing of design professionals. The reader may infer for himself or herself what all this says — or doesn't, your choice — about the motives and role of professionals who push for licensing versus those of the general population.

The Double-Edge Swords: Motive and Emotion

Intermixed with this discussion of motives are complaints regarding emotionalism. In sorting through this mix, we find that charges of motives and emotions are swords that can, and have, cut in both directions. Licensing opponents charge the proponents with having less-than-pure motives, as we've seen, and the proponents bristle at this charge, as we've also seen. Yet, while licensing advocates don't want their motives impugned or even questioned, in the next breath they will often label those who question licensing as being "advocatory," "biased," or emotional. This is illuminating and a bit inconsistent. To try to pin labels such as these on those you disagree with is, itself, to question or impugn someone else's motives. Mr. Pot (who calls the kettle black), meet Mr. Kettle.

One may go further and call such behavior less than humble. This seems to me one the best description available, when prolicensing writers try to blanket a vast body of antilicensing literature with the labels "partisan," "advocatory," and "biased," and believe they can get away with it, while they spill rivers of ink spewing a prolicensing viewpoint. As an alternative, perhaps one could just call such

behavior *uninformed* when prolicensing writers slinging such labels seem to be blissfully unaware of the published data. Whichever adjective you choose, I find it simply embarrassing to watch as licensing proponents do little more than call their opponents biased while there is an abundance of antilicensing literature in peer-reviewed journals and vetted monographs by respected social scientists.

Anyway, as with all motives, how is one to judge whether a writer is biased and the resulting work is partisan? How are we to choose the objective standard against which to recognize a bias? Even if one could recognize a so-called biased mind, how does this really affect the validity of an argument? Aren't the writings in favor of licensing biased in the same way (or have we found that Holy Grail, the wholly impartial analysis of the issue)?[154] As pointed out earlier, doesn't all expression in some way stem from the learning and experiences of the writer, and so aren't most writings inclined to favor one viewpoint? Aren't biases a result of the many varied ways all individuals see the world, or is such individuality intolerable? Aren't we truly tolerant of all forms of individuality? Must everyone toe the line or be marginalized? And, how is someone to say that an investigator hasn't seen the issue from both sides, arrived at a conclusion in a reasoned manner, and chosen to concentrate on articulating that conclusion in a reasoned manner?[155] It seems difficult to say with certainty. I think some licensing proponents don't make enough room for this possibility. This apparently is because they view the antilicensing viewpoint as one founded largely in emotion.

I do agree, for example with Tepel (1995), that emotions play too large a role in this debate. However, I'm not sure the problem of emotionalism deserves such emphasis. Really, it's obvious — a trite and uncontested point — that emotions don't have a welcome place in any intelligent discussion. And I'm not ready to infer, as Tepel seems to do and wants others to do, that licensing opponents are driven by emotions. I hope the bulk of this book serves to stand this notion on its head.

Numerous ivory-tower social scientists — they're tenured academics and some would have Nobel Prizes coming their way — researched reams of data, sifted them mathematically, arrived at conclusions, staked their reputations, and published papers that quash the utility of professional licensing. (Yes.) And they did this — because they're emotional and biased — out of a desire to pick a fight with some of us physical scientists and engineers? (No.) I trust you detect a note of sarcasm here.

It's also worth noting at this point that there could be plenty of emotion to go around in the licensing debate. It's likely that geologists, who have watched engineers practice (or try to practice) geology and have responded by drawing the licensing saber from its sheath, have responded at a visceral level. That response partly stems from the pride that one feels in one's calling, a prejudice some feel toward engineers, and the frustration felt from having one's livelihood impacted. We often read that licensing must be protected in order to protect our livelihoods; people certainly get emotional when they feel their livelihoods are threatened. Finally, at heart, most calls for government programs are based in emotion. Rarely are they based on scientific analyses, and in the geological licensing debate we've seen little introduction of published studies. Instead, they're based on the following sort of pseudo-reasoning: "High gas prices? A bomb? Waves of immigrants? Do the skies seem to be raining jets? Then pass a law, any law! In fact, many laws and regulations! And fast!" Government too often mobilizes to address a fear, to "fix" a "problem," with the introduction of a bill the day following an unpleasant news event. One feature of a devolving democracy is people using laws to satisfying their emotional whims and to grant themselves benefits from the public trough at the expense of their neighbors.

If there's a sure way to eliminate emotion from the issue of geological licensing and substitute reason in its place, then paying attention to the right scientists, e.g., statisticians and economists, is it.[156] Currently, geological licensing is promulgated without the benefit of sufficient scientific backing. If one is a scientist, a scientist who wants to denounce dumb but harmless endeavors like astrology, water witching, and psychic earthquake predicting, one would do well to avoid participating in a gangly, superficially simple yet cartoonishly complex, scientifically unproven, politically driven scheme such as professional licensing.

In summation: Licensing derives much of its energy from emotion and self interest on the part of the professionals who are to be licensed. In the absence of a "smoking gun" of motives, which earlier was called a distraction because it's impractical to produce, we can employ the reasoning exemplified in this American proverb: If it swims like a duck and quacks like a duck and hangs around with other ducks, it's probably a duck. This circumstantial evidence means (merely?) that licensing proponents need to work doubly hard, using philosophic, economic, and legal arguments, to convince us that licensing is more than simply a quack solution to a practically nonexistent problem.

An Abrupt About-Face

That said, though, I don't think that self interest is the only driving force behind licensing, and I don't think that the motives of licensing proponents are wholly wicked. For this to be so, geologists would have to be a very unusual group, pathologically self centered, akin to a gang of street thugs. As I said earlier, geologists by and large are normal. Most geologists, like most normal people, would have difficulty engaging in a relationship where their one-sided desires are carried out to the utter detriment of other parties. I disavow any implication that geologists are nefarious people.

Geologists reside among the upper decile or quartile of society in terms of learning, intelligence, and wisdom. We geologists, along with our engineer brethren, view things in scientific and technological terms. I wish we would keep in better touch with this blood in our veins and reconnect with our distant cousins the economists. (Economics has become so highly quantified that some, derisively, call it applied mathematics). We geologists and engineers, at the same time, tend to reject the reptilian, power-hungry, nontechnical maneuverings and manipulations of the many who also reside among us in this same upper cohort of society: the attorneys, politicians, lobbyists, business managers, and marketers. I wish we would be less willing and energetic in lending our faith in science and technology and our highly honed abilities, and with them our personal energy, to politics and bureaucracy and thus to licensing.

When a few among us do so, it may be understandable. Not justifiable, under sufficient data- and theory-driven scrutiny, but understandable. We are generally benevolent. Sometimes we're just misinformed. Human energy has many outlets, some of it public minded but directed wrongly. Much human effort entails experiment and wastage. Biological evolution is much the same. Recall the many odd terrestrial mammalian megafaunal species that roamed during the Miocene, Pliocene, and Pleistocene Epochs. Consider them biological attempts to do right.

One could say, then, that I've taken this discussion of motives far afield, in a misleading direction. It might seem like I'm contradicting myself now. On the contrary, I've intentionally presented a rather one-sided discussion of motives up to this point, stopping short here only about one stroke before midnight, for an important reason: to help geologists see that self interest is indeed a large factor in bringing about licensing. With self interest exposed — but seen as only part of

the problem — it becomes possible to take a more balanced approach, finally, and consider all elements functioning together.

Government, those same folks who gave us the IRS, the ATF, the wars in Vietnam and Iraq, and a $19 trillion sovereign debt, has got to control who gets to pursue their calling and offer their services to people: to write tests, set pass rates, set an arbitrary minimum number of years of practice, set definitions, and make sure only some get to provide for their families by working as geologists. We'll all enjoy a burgeoning economy that way. Yeah, that sounds like a reasonable theory, doesn't it?

7. Concluding Remarks

> *To change your mind and defer to correction is not to sacrifice your independence; for such an act is your own, in pursuance of your own impulse, your own judgment, and your own thinking.*
>
> MARCUS AURELIUS

✍

Geologists who support licensing probably see in it a complementary meshing of their own interests and those of consumers. These geologists project onto the minds of consumers a perception of two supposed problems: externalities and asymmetrical information. With not just one but two notions producing uncertainty and insecurity, there may be a sort of multiplier effect, creating an unnecessarily high level of anxiety. Yet the amount of anxiety or hope projected onto the minds of consumers may be exaggerated or totally illusory, since events show that consumers generally don't ask for licensing. Professionals do.

Geologists then rationalize licensing and try to give it intellectual backing with what could be called the Alfors–Akerlof doctrine and by adopting a utilitarian frame of mind to the exclusion of rights considerations. (Having once been in favor of licensing, it should be acceptable for me to speculate into the thinking behind licensing.) The study by Alfors et al. (1973) gives certain geologists reason to believe that government-directed building codes with mandatory geologic input are carefully crafted using economic analyses to yield near-Pareto-optimal conditions. And with government-mandated geologic input there arises a need for a government monopoly to screen geologists. Meanwhile, geologists extrapolate from Akerlof's (1970) theory that without governmental screening of geologists, the quality of practicing geologists is bound by economic laws to spiral downward to harmful, appallingly low levels, down to the level of quacks. That's the standard model. Roger Blair and David Wassermann (1980) called licensing "a curious sort of social contract," one in which "society pays a bribe in the form of noncompetitive fees and then hopes that this will prevent low-quality service."

Let's not forget historical events: First, engineers were licensed. Then, in California, grading ordinances promulgated in the 1950s through 1960s created a huge distortion, a vacuum into which a combination of satisfactory and unsatisfactory geologic input flowed. These government-induced abnormal conditions led to licensing of geologists. As California goes, so goes the nation, and regulators and geologists in other U.S. states wanted in on the action and were caught up in a tumbling snowball. Combine these historical events, the intuitive appeal of the theories of Alfors and Akerlof, and a profound underappreciation of market workings on the part of professionals and nearly everyone else, and you get licensing of geologists across much of the U.S.

Speculation into the thinking of others has been directed in both directions. A few licensing proponents have tried to draw thumbnail sketches of the thinking patterns of those who value professional freedom. For example, Hoose and Tepel (1990) theorized that those who hold views opposing theirs "seem to have a skeptical anti-registration set to their minds. It is apparently so ingrained..." Slayback (1990), to repeat an earlier quote, said that "much of the opposition is simply stubborn 'rugged individualism'."

Rather than take offense, I find such forays into the hearts and minds of the antilicensing opposition utterly delightful and interesting. Such forays, in turn, tell us as much about the thinking behind the prolicensing view as that behind the antilicensing view. The charges can be likened to brave but tentative explorations into an unknown wilderness. They are the expressions of an explorer's longing to know as well as a display of frustration with an inability to know. Licensing proponents, I suspect, are extremely curious how their opponents could miss the inescapable, simple, feel-good logic of their program. And of course their program is built on the simple notion that for every problem, however minor or complex, a solution is only one law away. Laws are levers, easily flipped, with easy-to-predict results. Society is viewed by such experts much as experts once viewed certain Soviet (now Ukrainian) and Japanese nuclear power plants from their giant glimmering control rooms. There is such a thing as better living through bureaucratic oversight.

This sort of thinking reflects a vast, profound lack of imagination.

I hope the foregoing chapters provide observers with the desired map of the antilicensing landscape. Perhaps this will dispel the notion that those who question licensing do so out of an ingrained mulishness or have fallen prey to hair-splitting intellectualism. What licensing proponents refer to as myths, common challenges, and the results of overly creative efforts to find tiny flaws in licensing might in fact not be such fantasies. Rather, the foundations of licensing are riddled with gaping holes and unproven claims, the main ones being that licensing is permissible, value-adding, and superior than the alternatives. There is an abundance of peer-reviewed, published data and discourse by respected thinkers (Nobel laureate economists among them)[157] that can be woven into a tight network of interlocking arguments casting grave doubt on licensing.

I think observers interested in this issue may wish to learn what real scholars have to say on the subject. We don't necessarily need to reach back to the writings of Democritus, Aristotle, or William of Ockham. But we may find wisdom in what philosophers and social

scientists of the last few centuries, particularly the 20th, have written on the topic of licensing and its earlier version, the guilds. I think observers can be rightly disappointed when advocates of geologic licensing

- Look for guidance regarding ethics from a few obscure industry-focused sources and come up blank,
- Present scant data from economics, and when doing so lean on faulty, irrelevant sources,
- Cloud their supposed exploration of the issue with trivia, such as how members of a state licensing board can be polite to one another, *Parva leves capiunt animas,*
- Engage in science denialism as they ignore the flood of writing by social scientists and philosophers that shouts loudly that professional licensing is an absurdity.

There undoubtedly are errors in a book such as this. There will be those who would derive entertainment from such errors, and, perhaps, from the tone or stylistic attributes of the text or the personal attributes of this writer. Indeed, as I said at the outset, I hope any errors of mine are interesting rather than trivial ones. When my cat sits beside me and I point to something, she only sniffs my finger. My much smaller and younger — yet smarter — Chihuahua, on the other hand, is able to triangulate, as can a 2-year-old child: She will direct her gaze and attention toward what I'm pointing at. Intelligent. I hope you're more like my Chihuahua than my cat. Let's not let sideshows distract us from the main ideas I've presented. These main ideas are questions:

1. Licensing is an action, a large-scale action taken toward human beings, who have rights. What makes licensing consistent with those human rights? Is it moral?

2. An action should have a rational basis. In the face of ample evidence from a chorus of responsible economists showing licensing to be counterproductive, where are the data showing a rational economic basis for licensing of geologists?

3. Where are the data from interstate and international comparisons showing that licensing leads to the correct level of competence, leading, in turn, to consumer savings, taking into account the social costs of licensing?

4. If licensing advocates view the science of economics as irrelevant or dismal, how do they, ironically, become instantly confident when foisting an "economic" program, licensing, on their neighbors?

5. Doesn't simply the review of geologic reports take us a long way toward maintaining high quality levels? Isn't the quality of the work (output) more important than the attributes of the worker (input)? Or do report reviewers (that's us, we geologists, peer reviewers) just want to minimize our workload and let others serve in a filtering role?

6. Does licensing actually enhance professionalism in geologic practice? Regardless, is our professionalism really an important concern in light of the conclusion that consumer benefits are the only legitimate goal of licensing?

7. Why has the burden of proof in this issue been spun in such an odd, backward direction? Why are educated professionals obligated to prove themselves innocent before legally being allowed to practice? And why have existing forces (markets, courts, certification, review, other miscellaneous) been superficially deemed imperfect and hastily replaced with a system (licensing) that is given immunity to criticism of its underlying doctrines?

8. Are we prepared to acquiesce when geological speech is accorded a lower rank and less protection than other types of speech?

9. What really are our motives when pressing government for licensing?

I'm confident that once any distractions have played themselves out, these nine questions will remain standing, largely intact, with their question marks waiting patiently for coherent answers. I doubt my own ability to, infallibly, give all the right answers. Indeed, I can't claim that I've myself supplied any answers: I've left that task for others and summarized their findings for your consideration. However, I am sure I've asked the right questions.

If we claim to be scientists, then we must consistently apply science to the problems we encounter. For one, we ought to let scientists do their work, and if there are social scientists who have done the research and done the math and wish to tell us what they have learned about the economics and other social aspects of what we do, then we should listen. For another, we should appreciate how science works: by an incessant search by many minds, which will yield more (and more valuable) knowledge than any attempt by a single board to plan paths of discovery. Markets function by this very spontaneity. And we ought to act like scientists and hesitate to shoot without first aiming.

We as scientists are in the business of asking questions and not being satisfied until convincing scientific answers appear. The fact that answers to many questions about the justification for licensing are not available to us and won't be in the foreseeable future ultimately leads to this singular admonition, directed at those who feel a need to order other people's lives: Yes, by all means, work to elevate your profession, but don't do it at the expense of your neighbors and those people you would artificially exclude from the profession. Rather, do only those actions you have first proven are for the betterment of all.

An important lesson I learned very early in life is this: One advances, truly and in the long run, when we encourage and uplift all those around us and help them advance in their goals. Doing the opposite generally results in tragedy and chaos for all concerned.

Licensing is a strange creation indeed, a recipe for disappointment. Its lodestar is big government, or power concentrated in those few who are only politically astute, who know only how to wield power and can do nothing else of practical consequence to benefit their neighbors. Licensing is thus a deeply flawed doctrine that thrives only in the darkness of ignorance. It withers when met with the sunshine of reason.

Suggestions for Further Reading

Those wishing to explore this issue further might first consult *Of Foxes and Hen Houses: Licensing and the Health Professions*, by Stanley Gross (1984). Despite the title, this is actually a scholarly, well-researched volume, perhaps the best single source on the subject. A similar good book is *The Rule of Experts: Occupational Licensing in America*, by S. David Young (1987), which has a good handle on the economics literature and theory in conflict with licensing. Gary Gaumer's 1984 paper does a worthy job scrutinizing licensing of health-care professionals. Volume 7, Numbers 2 and 3 (combined, 1983), of the journal *Law and Human Behavior* is a special issue dedicated to economic and sociological questioning into licensing. Any essays by Robert Tepel in *AEG News*, Tepel's *Professional Licensure…* (1995), and Tepel's (1990, as editor) *Proceedings...* from the national colloquium on geologist registration are all mandatory readings in the position in favor of licensing of geologists and ancillary issues. Altogether these volumes and papers comprise about as balanced a reading list as may be possible to find.

Those wishing to begin branching out into economics would do well to read Robert Heilbroner's very lively book, *The Worldly Philosophers* (1986). Will Durant's *The Pleasures of Philosophy* (1981) and Michael Sandel's (as editor, 1984) anthology *Liberalism and Its Critics* are good points to start in exploring philosophy and modern political philosophy, respectively. Akerlof and Schiller's (2009) *Animal Spirits* provides general background to the proregulatory viewpoint.

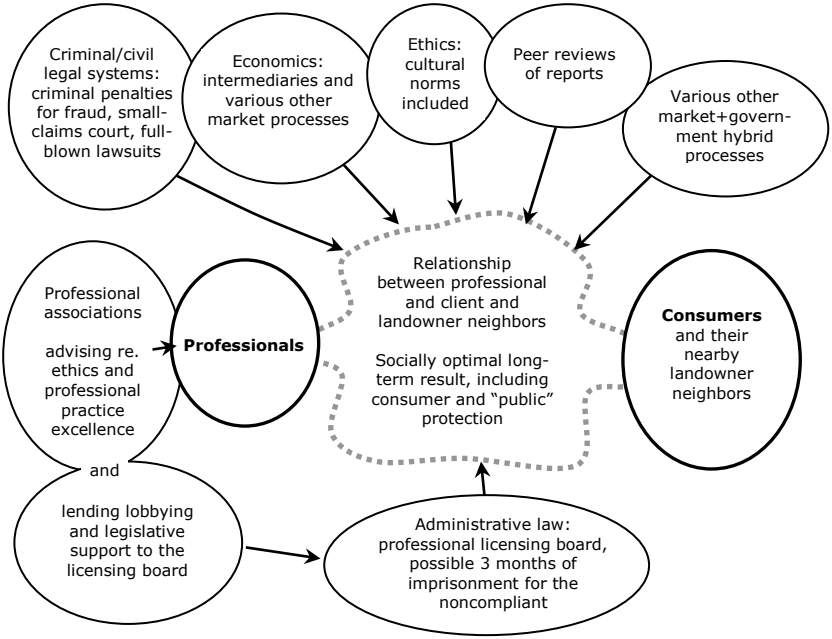
Try to find and enjoy *The Myth of the Rational Market*, by Justin Fox (2009), anything by Nicholas Taleb, including *The Black Swan* (2007) and *The Bed of Procrustes* (2010), and the *Tao Te Ching* (ancient, various translations).

Most of these sources of good reading are listed with the references. All are, to one degree or another, scholarly (or at least well-regarded literary/nontechnical books) yet accessible to the intelligent lay reader.

Let me leave you to consider Einstein's advice (quoted in Safire and Safir, 1992, p. 95): "Never regard study as a duty, but as the enviable opportunity to learn to know the liberating influence of beauty in the realm of the spirit for your own personal joy.... "

Appendix A

Here, in comparison to Figure 1, is a more fully fleshed graphic diagram of the relationships between the various forces and parties involved in professional licensing. The (two) principal parties are shown in bold.



This book focuses on how the five upper entities and forces in the diagram achieve a socially optimal result better than the one or two entities/forces in the lower part of the diagram. Undoubtedly, many other (minor) arrows of interaction and additional parties can be drawn. Undoubtedly, licensing proponents could pull themselves away from the trivia of licensing and create scrambled, convoluted, extended, or truncated versions of the above diagram.

Whether the socially optimal, long-term result at the center of the diagram (and the focus of our study) should be measured in wholly monetary, economic terms or some blend of consequentialist and nonconsequentialist values is a question best left to others. Those others may be those rare interdisciplinary scholars — covering philosophy, economics, and history — who have published monographs, e.g., Friedrich Hayek or Francis Fukuyama, or reviews of

analyses by others, e.g., Jeffrey Friedman, editor of the journal *Critical Review*. One would do well to start there and work outward.

Appendix B

My candidates for most likely sources for outbreaks of major international hostility in the near or not-so-distant future, say over the next 30 years, are these:

North Korea, versus its southern neighbor. This odd, impoverished, totalitarian, highly militarized nation is just itching to get out of its rut. It has isolated itself in every sense of the term except geographically. As one of the last vestiges of Stalinist socialism, its leadership foists unmentionable cruelties on its own people. Its leadership may be looking for a way out, but we can only watch and hope that a glimmer of wisdom emerges from the darkness (the country is a dark blank at night, when viewed from space, from a lack of electricity) and, guided by its neighbor South Korea and its clients the Chinese, it will find a nonmilitaristic path to normalcy. And, it now possesses a few nukes and intercontinental ballistic missile technology and has tried launching missile payloads into Earth orbit. Odds of a North Korean military adventure over the next 30 years: 20 to 1.

Iran, versus Israel plus perhaps certain other Arab nations it doesn't like. Russia would love such a disruption in Middle East oil supplies so that its own oil exports could extract far higher market prices. China wouldn't mind much if the West were distracted by yet another war in the Middle East, thereby allowing China to entertain its expansionist tendencies in the South China Sea, although its imports of oil from the Middle East would be disrupted. Odds: 15 to 1.

The new Middle East regimes are difficult to predict. The people of Tunisia, Egypt, and Libya threw off dictatorships in leaderless revolutions that surprised all watchers. The former Egyptian regime had historically enjoyed U.S. support that was rapidly withdrawn. The toppling of the Libyan regime (Khadaffi) was given a bit of gunboat assistance from NATO from the Mediterranean Sea. The civil war that erupted soon afterward in Syria is one in which the current regime enjoys active support from Russia and Iran. How any new governments in these countries will develop and how they will behave toward their neighbors is difficult to predict, as is the reaction to ISIS. Odds of international trouble (disregarding an invasion of a U.S. embassy and torture and assassination of a U.S. ambassador) beginning here: 10 to 1.

China, in a confident, expansionist mood. Mainland China has been itching to retake its renegade island province of Taiwan since the Nationalists fled there in 1950. Such a conflict would pit a giant Communist Party of China against a small democratic island nation. China might also much like to punish Japan for its invasion and rape of coastal China in the

1930s. The Chinese memories may be long and their grudges and nationalistic pride great, and their patience in wait of opportunities are substantial. China engaged in border conflicts with Russia and India in the mid 20th century and initiated a bloody war with Vietnam in 1979. Due to its official one-child policy and a cultural preference for sons and consequential wide-scale female abortions and female infanticide, China has a surplus of males; males generally find outlets either in nurturing families or in war and conquest. China currently craves oil and coal (energy), timber, and hard-rock minerals and would welcome an opportunity to bully its neighbors into giving China preferential access to their natural resources. Land, too, is an issue. It has exported its favored ethnic Han majority by the millions to swamp the ethnic minorities in Inner Mongolia, Tibet, and the Xinjian region and has encouraged major emigration to the east coast of Africa. With a population of 1.3 billion, China appreciates additional places to disperse its citizens. The European Nationalist–Socialists of the 1930s gave the name *Lebensraum* to a similar ideology. The Chinese used a missile to destroy an orbiting satellite and have sent submarines to bob up next to U.S. warships, just to say "hello, gotcha." It probes, hacks into, and disrupts the web servers of private corporations and western government agencies. Thus, China's interests, recent history, autocratic government, and mood may resemble those of Germany and Japan in the first few decades of the 20th century. Or, ignoring styles of government and ideology, China may somewhat resemble the U.S. when it entered the world scene around the turn of the 20th century under Bill McKinley and Teddy Roosevelt. Odds that the Chinese finalize their gobbling up of "The Cow's Tongue" of the South China Sea and/or retake Taiwan during some period of profound U.S. weakness: 3 to 1.

All three of the above. The three main Axis powers of World War 2 found it advantageous to launch expansions and mete out punishments for past grievances simultaneously and in concert in the late 1930s and early 1940s. All were headed by autocratic, peculiar governments. (All three nations, Germany, Italy, and Japan, now happen to be healthy democracies, but that's beside the point.) The three national points of concern listed above (North Korea, Iran, China) may find it in their mutual interest to initiate a sort-of 21st-century-version repeat of World War 2. Note how all three share advanced technology with each other and are currently headed by peculiar autocratic governments with little regard for human rights. Odds that this threesome will challenge the rest of the world: 50 to 1.

Then again, maybe not. Potentially arrayed against China and standing in its way now — if the situation were to become bellicose — are, of

course, Japan and Taiwan, its other relatively small neighbors, perhaps India, and a blue-water U.S. Navy.

We may also take comfort in these predictions: If China's confidence and expansionistic mood are dampened in coming years, it would be because

- Its 10% per-annum GDP growth of recent years can't continue indefinitely. It can't satisfy its restless hinterlands-to-cities migrations with jobs and economic growth year after year. As of 2015, GDP growth has shrunk to a reported 7% and may be much lower or negative.
- Its Communist Party lacks the knowledge from practice that numerous Western government bureaucrats gained in trying to centrally plan large national economies over the last century or so. Inevitable malinvestment, maladjustment, waste, monetary inflation, and a declining Chinese economy will result.
- Its Communist Party can't squelch communication and democracy forever. The Tiananmen Square massacre of 1989 may have been more than just an outlier.
- Rapid development has placed a horrific toll on human health, land, water, and air in the form of environmental degradation. Perhaps the Chinese bureaucrats believe their smog will quickly lift and they can somehow eventually work their way through their issues of respiratory diseases and contaminated aquifers, rivers, farmland, food, and coastal marine environments.
- China's population will begin to age before it fully enters its industrial or postindustrial age. This may be unique. No known major historic nation has yet had to contend with a demographic bubble of aged, infirm retirees unsupported by a strong base of capital infrastructure and healthy young workers to fill in behind it.

Europe, Japan, and Russia became industrialized in recent history. And they now are experiencing declining birthrates and populations. A defining issue and trend of the 18th through 20th centuries was a rapidly expanding global human population. A defining issue of the 21st century may be declining birthrate curves and populations in many regions and a leveling off of human population globally. I would emphasize that China's situation may be unique. It may reach a low-growth-toward-industrialization stage, definitely short of an everyone-is-a-lawyer-or-business-manager stage like in the U.S., well before its burgeoning class of old, sickened retirees becomes a burden on its shrunken (and sick-

ened?) pool of young industrial and agricultural workers. Europe and Japan escaped this bottleneck. They grew wealthy before old age and depopulation set in.

By the way, the U.S. is well positioned to avoid either of these unpleasant situations. The U.S. is well along on the technological/political/social advancement curve. More importantly, its population is also increasing by both immigration and internal births. It may be the only advanced nation whose population is increasing by significant increments. It has huge amounts of so-called flyover territory — take a trip from Nashville, Tennessee, to San Jose, California, as I have several times to see what is meant by this term — to absorb many more people. The U.S., I would argue, is easily the one large advanced nation best capable of welcoming and integrating immigrants, wherever they may come from, into its geography, and its economic, social, and cultural institutions, and into its own globally inspired, philosophically grounded set of freedoms. But I digress.

Perhaps, by luck, the next 10 to 30 years will come to pass without a major international military conflagration centered on Korea, the Middle East, or China, initiated by the three or so players discussed above. If so, then we may set our sights on other potential players, below:

The U.S., in some peculiar mood. The U.S. hasn't ever initiated uncontrolled, large-scale international military conflagrations. Events in Korea, Cuba (nuclear-tipped missile crisis), Vietnam, and Iraq may have come distantly close. Nevertheless, America's relationship with Israel, reliance on Middle East energy, global alliances and bases, internal social/political problems, and nuclear arsenal make the U.S. a target for malcontents (e.g., 9/11) and place it in a position of vulnerability. And sometimes the U.S. takes its role of global policeman too seriously. The U.S. might foolishly inject force into regional conflicts involving Iran, Syria, ISIS, or other players in the Middle East. It may react erratically again to a 911 replay. It could continue pushing NATO too closely to Russia, deal poorly with organized drug-gang violence that could erupt into small-scale civil war in Mexico right alongside the U.S. southern border, or deal irrationally with its monetary relationships with the European Union or its Asian creditors. The U.S., because of its polarized, relatively unstable internal political environment and debt, could descend slowly down a long slope of (self-imposed) cash starvation and blindly lash out internationally at perceived foes. History shows that America, so far, has survived existential threats or periods when it nearly came unhinged: a civil war, Pearl Harbor, Nazi U-boats off its eastern seaboard, the 1960s, and a cold war with a giant, nuclear-armed, ideologically opposed, expansionist foe. History and optimism suggest that

this nation will choose wisely even in the face of present circumstances and despite its $10s of trillions of debt. Geologists have found and tapped new oil and gas fields in several U.S. states over the last few years, solar and wind power are increasingly coming on line, and there is speculation of finally ending U.S. dependence on foreign fossil fuel and lessening a horrific international trade deficit. I rate the odds of the U.S. serving as reckless instigator of crisis over the next 30 years at roughly 50:1.

Russia vs. Ukraine. As of early 2015, there were U.S. officers on the ground in Ukraine training its troops to deal with what have been called Russian-backed separatist forces or what may in fact be Russian weapons manned by Russian soldiers. Odds of a nasty widening conflagration here: 150:1.

Someone, somewhere, who knows when. It's been said that history is merely a list of surprises. In perfect accord with that truism, we could say that future events usually emerge from either the dimly perceived unknown or from some unknown unknown. I can speculate only — by definition — on unknowns of the first type, those dimly perceived.

Some discontented parties may still try to sneak weapons of massive force (biological or other) into the hearts of the cities of the West. I'm still a bit unclear as to what U.S. Homeland Security has done to prevent some such party from launching an innocent-looking ocean-borne freighter from some international port, parking it briefly off San Francisco Bay, and dropping off about four speed boats laden with nuclear bombs or other dispersants, which would then drive to Pier 1 of San Francisco, Jack London Square on the Oakland estuary, the port of Richmond, and up the Guadalupe River (at high tide) to near downtown San Jose to discharge their load under darkness, under a new moon, and under cover of an (incredibly) dense summertime San Francisco fog. Recreational sailboats could even be launched from a freighter in the daytime and approach their destinations leisurely, amidst, under the cover of, hundreds of similar pleasure sailboats. Thousand-to-one odds for such an event.

A true nuclear bomb, however, is best detonated a few hundred feet above a city for maximum destruction. Thus, ships sailing on an estuary or river may not do. Aircraft may be needed. There may be little to stop an ISIS or Al Qaeda band from turning an oil tanker or container cargo ship into a small aircraft carrier. Make room on it for about two planes capable of carrying munitions. Hide or disguise the planes among a bunch of empty phony cargo containers on deck. Once in the waters off San Francisco, quickly dump the phony cargo containers to expose a flight deck. Launch the loaded planes toward a few nearby densely

population urban centers. Given about ½ to 1 hour of flight time and assuming that U.S. intelligence and fighter planes aren't quick enough to intercept this effort, the possible results should be obvious. Similar scenarios are possible in any metropolitan area around the world that has a maritime harbor. Fortunately, only a few careful, responsible nations possess the technology to create a nuclear detonation from a device small enough to be carried on a medium-size plane. And, hopefully, the small but hugely important, largely clandestine efforts by Western intelligence and special forces to decapitate, harass, and demoralize Al Qaeda and ISIS will mute this threat. So, 1000:1 odds for such an event.

On the other hand, a modern, compact, powerful nuclear bomb may not be needed. A dirty bomb — some plutonium pulverized and dispersed using conventional explosives — or a biological or chemical bomb dropped from a plane launched from the deck of a freighter in or near San Francisco Bay would serve just as well. The U.S. DOD (defense) should be well aware of this potential already: a plutonium-laced aerial dirty bomb experiment was conducted on April 24, 1957, at Area 13, near Groom Lake, Nevada, contaminating an 895-acre area and providing data on the radiological effects on burros, beagles, sheep, and rats purposely placed there. Odds of terrorists enacting a similar scenario for nefarious purposes: 200:1

The Balkans were a flash point of war and ethnic cleansing in the 1990s. This conflict reached near global proportions, with the involvement of U.S. F117s (stealth fighter–bombers), NATO, the UN, Russian interests, and a Chinese embassy smashed by U.S. bombs. The Caucasus region could serve as a 21st-century stand-in for the Balkans. The Caucasus region lies between the Black Sea and Caspian Sea and is about the size of Texas and Oklahoma put together. The Caucasus is home to an old mishmash of ethnic, linguistic, and religious groups. Russia, Turkey, Iran, Armenia, Azerbaijan, and Georgia are the nation states involved. Already just the mention of this list of players should make one's ears prick up. Dozens of recent military battles, oil and gas pipelines, and past grievances (e.g., Turkish-on-Armenian genocide) add to the mix. This is a volatile region ripe for hot conflict involving the usual group of global players. Odds: 60:1.

Add up all the odds of some flashpoint heating up or the leaders of some bellicose regime(s) acting irrationally and aggressively, and the odds are not good that we or the world will avoid something very unpleasant over the next generation. We could all wish for none of this to be the case. We could wish that a wiser president, someone besides

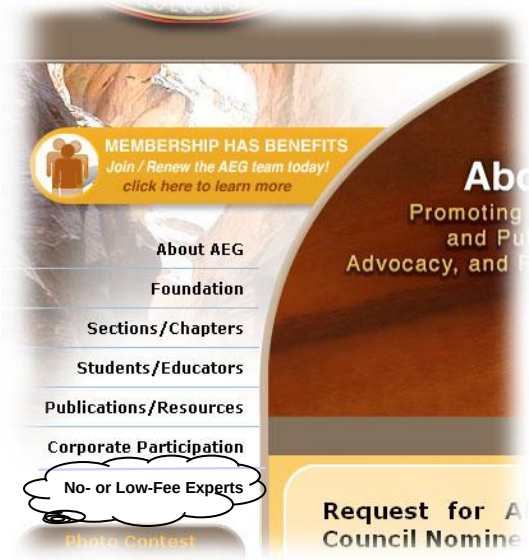
Woodrow Wilson, had kept the U.S. completely out of World War 1, or that the U.S. had had the courage to enter World War 2 years earlier than it did. Now, we can only pull our heads out of the sand and hope for wise leadership.

I've digressed much, but I'll finally come to my point here. The point, I suppose, is that our time horizons are limited in terms of both looking back and looking forward. We think we live in a time when most everything in our immediate environs is relatively stable, secure, and peaceful. History suggests we're ignorant when we think so, and times such as these are short. Nationalistic tendencies and ethnic grievances only lie dormant now. The mindsets of leaders and their followers are not a bit changed since recorded history began. An end to international political power plays will not come within our lifetimes. And domestically — here's the connection to our topic of licensing of professionals — we can expect much of the same sort of domestic turbulence. War, guilds, ignorance and other scourges of society will continue to dog man as they have for thousands of years unless we truly observe history, negotiate, respect scientific data, return to laws based on time-honored principles, and discard recent artificial laws based on whim.

Appendix C

We're geologists. We could serve as experts in mediation or arbitration in small disputes between consumers and professional geologists.

I speak here not of doing this as highly paid experts — at typical rates of $250 to $300 per hour — in high-level legal disputes. Instead, I envision geologists serving *pro bono* or for very low fees, as *amicus curiae*, as a service in *small* cases in which low-income consumers may have felt wronged by a geologist, whether in small-claims court or as a service to mediators and arbitrators in low-dollar-figure disputes. Perhaps AEG, the Association of Environmental and Engineering Geologists, could serve as an intermediary and present a roster of geologists who would like to serve in this capacity. AEG could publicize this initiative by sending out communiqués to county and other local Bar associations, courts, and other appropriate outlets and clearinghouses of legal services.



Imagine you're a consumer with a problem or you're a mediator/arbitrator (retired judge) called on to handle the problem. You view the AEG website and see a link to a page for no- or low-fee experts in mediation/arbitration services. Look closely at the figure above and see my take on what this hypothetically might look like. You click on it and select from a list of expert geologists willing to provide this service. Imagine the technology enables you to select an

expert from slightly out of the area, say 200 miles away. This geographic distance inserts a high degree of impartiality into the process. It also forces the expert mediator to invest a high degree of personal time and resources toward the service. You shoot out a couple emails or phone calls. Based on what you get in return, you set up your first face-to-face meeting and start sorting out the facts. Or you conduct your meeting by Skype or other web-based meeting service.

Imagine you're on the other end, a geologist with lots of experience plus a good deal of extra time on your hands and a willingness to drive a few hours. You're on AEG's hypothetical website list, and you help settle a few disputes: you wish to give back to the community or, in your retirement years, you seek challenges. Perhaps altruism is involved. Or, perhaps not: you also list your services in this capacity on your resume.

Notes

[1] This preface is analogous to the purpose and scope sections with which we introduce our geologic reports.

[2] An expense that, one way or another, invisibly reduced my paycheck and was an expense tacked onto fees paid by clients.

[3] I respect the opposition, as I would someone on the other side of the net in tennis: they're as vital to this conversation as am I.

[4] Indeed, I initially, very briefly, opposed licensing of geologists, Then, for several years, I actively supported it, even lending my time, voice, and other personal resources to the cause. Finally, in the early 1990s, I reconsidered and withdrew my support. All these changes in thinking spanned about the years 1985 to 1993. My first two stances were emotional and uninformed. My third, final, present stance is based on wide-ranging reading and literature research starting around 1992 and continuing with few interruptions to the present.

[5] I apologize to AEG members outside the U.S. for slanting these discussions toward historic, legal, and cultural conditions in the U.S. In compensation, I think readers will recognize that I generally eschew historic and legal concerns in favor of ethicopolitical issues that cross political boundaries.

[6] U.S. hourly wages have been roughly stagnant, in real monetary terms of course, for some 40 years despite huge technological advances. Robot manufacturing, digital information processing, the internet and digital databases, wireless communication, gene therapy, shipping and port technology, fracking and horizontal drilling, and energy efficiency all should have resulted in about a 50% increase in American living standards by now, in my lifetime. Some of this wealth has gone, in the form of reserve currency and bonds, to energy suppliers in oil-exporting countries and to east Asia as it has hollowed out our manufacturing sector. The rest of this American productivity and efficiency has, at the level of the federal government, been frittered away on nonproductive entitlements, unfinanced pension obligations, earmarks for goofy projects, and wars and weaponry. At the state level, subtract spending on wars and weaponry but add on voter-approved bond measures for a myriad of weird state park land grabs and wildlife protection and a continual stream of funding that allows individuals to sit and procreate rather than produce and provides for their progeny. If I were given a $5 bill for every bond measure that appeared on a state or local ballot presented before me since I came of voting age, I might be able to pay for a new set of shock absorbers on the 1991 vehicle that I drive on my crumbling local roadways. Meanwhile, governments at the (U.S.) federal and state levels have gone massively in debt. This debt is all backed by *nothing* in terms of present or foreseeable future productivity. Eventual reconciliation of this debt will either be cataclysmic or cause a decades-long period of misery and muddling through, depending on what Chinese leadership and/or U.S. politicians

decide. This period of reconciliation may have begun in 2008. Whether this period in the U.S. will eventually parallel events in the PIIGS of Europe (Portugal, Italy, Ireland, Greece, Spain), particularly in Greece, or something else remains to be seen. Two facts are paramount: (1) no entity or force exists, unlike in the case of Greece, to rescue the U.S. government from its folly in the event of a Greece-like debt meltdown, and (2) not even a wholesale confiscation of all the wealth of all the Warren Buffetts, Bill Gateses and Derek Jeters would put a sizeable dent in the federal government's obligations, nor would a hike in their income taxes to confiscatory levels of say 90%. Ancient thinkers said that democracies eventually destroy themselves: they survive only until the voters discover that they can vote themselves money from the public treasury. Memo to self: to which English-speaking country can I relocate myself and family to escape the eventual debacle?

[7] Let's review the definition and characteristics of guilds. The following is a series of excerpts from the Wikipedia entry for guilds (Anonymous, v.a., 2017):

> A guild /gɪld/ is an association of artisans or merchants who control the practice of their craft in a particular town. … They were organized in a manner something between a professional association, trade union, a cartel, and a secret society. …
>
> Trade guilds arose in the 14th century as craftsmen united to protect their common interest. …
>
> The guild system became a target of much criticism towards the end of the 18th century and the beginning of the 19th century. They were believed to oppose free trade and hinder technological innovation, technology transfer and business development. According to several accounts of this time, guilds became increasingly involved in simple territorial struggles against each other and against free practitioners of their arts. …
>
> Modern antitrust law could be said to derive in some ways from the original statutes by which the guilds were abolished in Europe. …
>
> The economic consequences of guilds have led to heated debates among economic historians. On the one side, scholars say that since merchant guilds persisted over long periods they must have been efficient institutions (since inefficient institutions die out). Others say they persisted not because they benefited the entire economy but because they benefited the owners, who used political power to protect them. Ogilvie (2011) says they regulated trade for their own benefit, were monopolies, distorted markets, fixed prices, and restricted entrance into the guild. Ogilvie (2008) argues that their long apprenticeships were unnecessary to acquire skills, and their conservatism reduced the rate of innovation and made the society poorer. She says their main goal was rent seeking, that is, to shift money to the membership at the expense of the entire economy.
>
> Epstein and Prak's book (2008) rejects Ogilvie's conclusions. Specifically, Epstein argues that guilds were cost-sharing rather than rent-seeking institutions. They located and matched masters and likely apprentices

through monitored learning. Whereas the acquisition of craft skills required experience-based learning, he argues that this process necessitated many years in apprenticeship.

[8] It's unlikely that any trained philosopher, economist, or constitutional-law scholar will be impressed by the products of my autodidactism. Yet I'm comfortable with this fact, and I invite anyone else to posit any arguments on this topic and urge anyone to judge all arguments solely on the merits of those argument rather than the writer's credentials.

[9] As of early 2012, Tepel's contributions to the literature in favor of licensing of geologists continue. To his credit, his essays also contain many nuggets of wisdom one should heed to make one a better practitioner in general. All continue to be published on a regular basis in *AEG News*, see http://www.aegweb.org/.

[10] Mine.

[11] It would be careless to generalize based on anything in this book that the writer could be classified as right- or left-leaning. Indeed, the antilicensing viewpoint is seen in various places across the political field. Karl Marx (1936) saw guilds as tools of the bourgeoisie and as an obstacle to industrial unions, which are legitimate democratic tools of the proletariat. Licensing, and much of government, didn't grow out of any utopian visions of socialists but from the pragmatic promises of technocrats. The view that one's labor — because one's body — belongs to each individual is one core precept underlying my arguments. And one may infer from this (just for grins) what this writer's position might be on other issues such as women's reproductive rights, drug prohibition, personal sex-services trades (among only consensual adults and never children), gay rights, immigration (cross-border human movements), and U.S. foreign policy (just for grins).

[12] Philosophers, yes. What are thought, intelligence, learning, and consciousness? Philosophers have grappled with such questions for a long time. And those who write digital code and design circuits recognize this and lean on the philosophers for guidance. Whether artificial intelligence is achievable or even desirable are questions far beyond the scope of this book.

[13] Here's an unfortunate example of what often passes for a philosophical discussion of licensing (Harvey, 2003, p. 17):

> [T]wo philosophical concerns: The first was whether to participate in licensing activities even though the Council did not approve of licensing. Going with the majority of the panel, the Council decided that participation would be perceived as an endorsement and would "lull people into thinking we do know how to assure public safety when we don't". … The second philosophical point is the question of when to begin licensing. Some panelists hoped that beginning the licensing process would help mature the field. The Council determined that the possible harm of licensing — the consequences of using incomplete and insufficient licensing requirements — outweighs any possible good.

[14] I encountered one published antilicensing viewpoint that might validate Tepel's fear, this one by the social critic Ivan Illich (1978):

> Let us first face the fact that the bodies of specialists that now dominate the creation, adjudication, and satisfaction of needs are a new kind of cartel. They are more deeply entrenched than any guild, more international than any labour union, more stable than any party, endowed with wider competencies than any clergy, and equipped with a tighter hold over those they protect than any mafia. … [T]hey at first fit the dictionary definition of gangsters. But gangsters for their own profit hold a monopoly over basic necessities by controlling supplies. The new professionals gain legal endorsement for creating the need that, by law, they alone will be allowed to serve.

While interesting, this sort of passage doesn't help advance the discussion much when backed by little empirical evidence. While Illich's various writings — this and others — are indeed backed by much historical evidence and are widely cited in the sociological literature, his comments are buried here in the endnotes due to his malodorous word choice. However, one or a few such writings in the literature doesn't condemn the entire body of papers accumulated in journals over the years that questions licensing. To suggest that it does would be absurd.

[15] In fact, if there is a sort of mysticism in the present topic, it is present in central planning, which requires a nearly god-like level of omniscience, as explained in Chapter 3. Central planning, which is the basis for licensing, is founded on the belief that one person or a small group of people (a licensing board) can amass the necessary information on the preferences of thousands or millions of people and on the supplies of services present in a market, all of which change minute by minute. Markets, the antipode of central planning, develop knowledge through adaptation, evolution, and extinction, decidedly nontheistic processes. I added extinction, because this is important: Firms in a market system die and are replaced at a relatively fast clip and with relatively little bloodshed. Government regimes and their regulatory bodies and their extensive volumes of regulations are replaced only very slowly, if ever (at least in our lifetimes), and I needn't elaborate on the blood that does get shed in wild, world-enveloping conflagrations when such replacements occur rapidly.

[16] Its main fault probably is the emphasis on a purported responsibility to public health, safety and welfare, which is a mushy, superfluous concept (see end of Chapter 2). Also, the urging to practice in an ethical manner in Clause 1.4 is tautological.

[17] I wish L'Etang had focused less on the general formula of Kant's categorical imperative and more on Kant's handful of derivative formulations. Her view of licensing and mine then might have closely matched.

[18] With few living in stone-age cultures and communities anywhere now, *we* may find it hard to conjure up these thought experiments and examples. We could substitute an alternative, cruel thought experiment: imagine exposing a 3-year-old, from anywhere and given no prior explanation, to such a situation.

[19] To be complete, this statement needs to be amended with the phrase "except to counteract such an action." This allows individuals to preserve the status quo, to defend against or receive compensation for wrongful actions, such as rape, arson, fraud, and professional misconduct, something we all intuitively sense. The phrase "without ... provocation" in the conclusions in my (Groffie, 1994) essay apparently didn't express this qualifier well enough. Also, I don't offer this statement in some transcendental sense but more as a sort of theory in the scientific, agnostic sense. Something better might come along. But for now, in my opinion, it seems to work. By saying *work* I'm speaking probabilistically. Its probability of working fast approaches unity as scales of time and space increase and larger numbers of people are considered. And I use the word *work* in a consequentialist sense: it promotes human flourishing. See also Note 26.

[20] Yes, I'm aware we're engaged in a philosophical discussion and not a scientific one. And yes, this idea has been expressed well before me in various forms countless times by others, as I've said (Groffie, 1994), and do not count me as its originator.

[21] It's so tiring to have to say this, when it's been expressed untold times: When we speak of judgment and individuals, we're talking about adults of sound mind, living in a society of at least a few others of like mind. We're not talking about lifeboat ethics, and we're not talking about children or one's 88-year-old great aunt with advanced dementia. We can all agree that such valued members of our society need care and guidance from some combination of family and/or public oversight and assistance. We gain no assistance from Marx's theory of false consciousness, in which the masses are ignorant of some sociological environment of class slavery swirling all around them.

[22] I neglected to wear a seatbelt on a City of San Jose street. I was pulled over by a California Highway Patrol officer. In court, I argued that my use or nonuse of a seatbelt was a private matter. If I wished to assume a greater risk of personal bodily injury, as guaranteed by some nebulous right to privacy or personal responsibility embedded somewhere in the U.S. Constitution, it should be my choice to do so, I argued. The CHP officer a few feet beside me rolled not only her eyes but her whole head. "Do you have anything else to add?" asked the judge. "No," I responded. I took a few steps to the left and wrote out a check to pay the fine.

[23] Or something larger and more amorphous, like the vast urbanized, global village we all seem to have been borne into. Yet, all we are really borne into is the care of our immediate or extended family and the choices they make for where we are situated and how we are eventually launched into full adulthood and personhood. Hopefully, the choices the environment then offers to us are fully open. Even the Amish allow their young adults a formal period of time to experience everything life has to offer on the outside, with the opportunity to be welcomed back into their restrictive Amish community.

[24] It's delightful that Lewis Carroll's Queen of Hearts was mentioned. Charles Dodgson wrote children's stories (*Alice's Adventures in Wonderland* and *Through the Looking Glass*) under the pen name Lewis Carroll. Dodgson was also a mathematics lecturer at Oxford, where his work, it's said, foreshadowed work in symbolic logic by Wittgenstein. What his story characters say may be nonsensical but may be logical in their form, in the way they constitute symbols manipulated properly according to a formal system (grammar, language). Tepel's Queen of Hearts reference could be pointing out that the ethical precept I use in challenging geologic licensing seems to be stunted by the inherent limitations of deontologic, formal ethics. What you're reading is my response to Tepel's objection.

[25] These modern-day writers, admittedly, toil in relative obscurity (outside their realm of present-day political philosophy) without the widespread recognition of, say, a Socrates, Plato, Aristotle, or Kant. We leave it to licensing advocates to cite the work of any work or system of philosophy as backing for their position, and they would seem to have much to search through: e.g., ancient, classical, Medieval, Renaissance, Enlightenment, modern or postmodern, Western or Eastern.

[26] Although Nozick's 1974 book is one of the most important and often-cited works in contemporary liberal ethicopolitical philosophy (and winner of the 1975 National Book Award for philosophy and religion), Nozick later recanted (1989) and appeared to have adopted a communitarian stance. He succumbed to cancer in 2002 at the untimely age of 63.

[27] I don't mean to suggest that labor imbues an object with some ghostly essence. I merely mean it makes the object special to the laborer and makes him or her predispositioned to defend it almost as one would one's body. We do this. Our children do it. A cheetah that has produced and invested in a litter of kittens and has brought down a small impala to feed them naturally defends both her kittens and the impala flesh.

[28] Communitarianism and its variants tend to work *extremely* well, in my experience, in families (and within a marriage), teams, small companies, and other groups with a highly concordant set of temperaments and/or goals. Small communes may also function harmoniously, for some limited time period, depending on leadership, initial conditions, and a whole set of additional variables.

[29] Preliminary reports as of 2015 are that several million U.S. workers have given up being employed (working) as a direct consequence of Obamacare, many of those still clinging to the lower rungs of employment have had their hours cut to below the ACA threshold of 30 hours per week, small businesses and their owners are stressed, and illegal immigrants are being welcomed into the system in certain states (e.g., California) so that they may eventually become Democrat Party voters and add power to the cycle of single-party (Democrat) rule, general impoverishment, and taxation and benefits. That cycle began roughly two decades ago as California's businesses and middle class began fleeing to Nevada, Texas, and elsewhere.

[30] Sue Blevins (1994) also gives a lengthy, detailed, scholarly summary of the many ways that licensing of the medical profession costs consumers financially and yet provides no superior medical outcomes. (It's tainted, however with a defense of homeopathy (about 5% of the paper), which I consider pseudoscience.) The article — worth finding and reading — can be found at http://www.chiro.org/alt_med_abstracts/ABSTRACTS/The_Medical_Monopoly.shtml.

[31] MacIntyre doesn't agree with this viewpoint. Also, it should be noted that his summarization is slightly off the mark: many proponents of professional freedom would not oppose regulation by universities, medical schools, and the AMA, since those are organizations that individuals associate with voluntarily.

[32] *Twilight argument* is one of several names given to any fallacious argument that suggests there is no difference between things at opposite ends of a continuum, such as night and day, and childhood and adulthood. *Argument of the beard* is an equivalent term. It's derived from the faulty reasoning that no one can distinguish between a teenage boy with peach fuzz and Santa Claus because there is no specific number of hairs at which a clump of hairs could be called a beard.

[33] Tepel seemed to recognize something along these lines when he said (1990, p. 5), "The mason certainly realizes his duty to build a brick bearing wall with good workmanship."

[34] Note that Tepel (1995, p. 99) recounts a description of work behavior in which it is said to involve observable (physical) components and unobservable (mental) components.

[35] The idea of hidden work also closely relates to the asymmetrical-information claim used in support of licensing in terms of economics. Also, licensing proponents try to emphasize the distinctly learned nature of the professions to conjure an image of special callings that are somehow exempt from economic principles. Both these ideas are discussed in Chapter 3. What we're concerned with presently, instead, is the professional's ethical obligations toward the consumer with regard to hidden work.

[36] Furthermore, mental work usually, eventually manifests itself in some physical object, such as a technical report, skyscraper, or successful heart+lung transplant. This just points out another reason why the pronounced split between the mental and the physical — sort of a Cartesian mind-body dualism — is troubling.

[37] Back in the glorious 1950s, such events were predicted for the not-too-distant future, viz., the late 20th and early 21st centuries. We're well beyond such quaint predictions for space colonization in these early decades of the third millennium. Most leaps in human technology and living standards were based on harnessing new forms of energy. Wood (fire) may have been first, about 500,000 years ago. Animals came next. By 50,000 years ago, dogs (my favorite) may have been pulling loads, helping our species track and take down game and giving warning against predators and human raiders and

thus letting us gain precious sleep. We created dogs (from wolves), and they may have helped create us or at least helped us become who we are. Dogs may be the unsung heroes of our very existence, although archaeology and paleoanthropology have yet to confirm this hunch. (Note that *Homo sapiens sapiens* passed through a tight population bottleneck of only a few thousand breeding pairs around 150,000 years ago; we were an endangered species.) Horses, cattle, goats, etc., starting around 5,000 years ago, provided the human race with a pronounced energy boost by way of draft power and milk. Coal and water power gave rise to the industrial revolution a few centuries ago. Oil took over the role of cheap energy about 100 years ago. Nuclear power seemed to be the new beacon of hope around 1950, thus giving rise to wild schemes of interplanetary travel. Nuclear power, both fission and fusion, has shown its limitations, however.

[38] The alert reader will probably see instances where I treat concepts and terms such as *public*, *profession*, *state*, and even *licensing* as reifications. I admit to breaking my own rule when it makes for a convenient sort of shorthand.

[39] Jonathan Wolff's (1991) rigorous scrutinization of Nozick's early (1974) views was the first such study in full-length book form and is recommended for those readers wishing to explore the challenges to Nozick.

[40] Great mining towns of some 10,000 residents have come and gone across the American West. Worshipful monuments and museums have since been erected to mark these events and locations.

[41] Consider this: Until a few years ago in the U.S., the state didn't allow same-sex couples to marry. Before that legal change occurred, assuming you're a heterosexual who was in favor of same-sex marriage, were you committing an immoral act by being married? I doubt that few, not even more than a handful of gays, had insisted that heterosexuals get divorced or never marry in order to be morally consistent with respect to gay rights. Similarly, when Al Gore travels to a climate-change conference in Paris, is he morally required to row a boat across the Atlantic and then walk on foot halfway across France? There is still this, however: the biennial fees I pay to my state licensing board support the board's activities. Therefore, I financially support an unethical practice. That's a fact, regardless of the mitigating circumstances, which are two-fold: (1) It's not like I'm making voluntary donations to the NRA. Rather, I pay licensing fees under duress to make a living. (2) The support is miniscule. If there are 5,000 licensed geologists in my state, and 50% of my fees support enforcement (guesstimates), then I'm a 0.01% culpable party in the very practice I oppose.

[42] Moreover, this appears to be the only drawn-out published counterargument to the assertion that professional licensing is unethical. A counterargument that merely cites a few selected (irrelevant) sources and widespread sentiments and concludes "No evidence found that licensing is unethical" depends on three poor substitutes for reasoning: appeal to authority, appeal to the majority, and reliance on negative evidence. Indeed, some logicians, e.g., Francis Dauer (1989), go so far as to call these fallacies. Assuming that

the few selected sources of backing are indeed irrelevant, one may add *fallacy of relevance* to the list of weaknesses in such counterarguments.

[43] The fact that Rousseau opposed the guilds is cited seemingly everywhere, yet I can't locate this opposition in his writings nor a proper citation for this statement.

[44] Tepel's assertion is difficult to parse, but it comes down to this: Professionals may desire to observe their association's guidelines in behaving ethically toward consumers and other neighboring third parties, but if they don't respect the need for a licensing board to enforce such ethical behavior, then they're being inconsistent. This would be correct only if their association's code of ethics contained a statement such as, "Government licensing is the only way to ensure ethical behavior of you, the professional, toward consumers, and you will uphold, protect, and defend such government programs." It would be surprising and radical if a professional association were to add such an item to its code of conduct. See Appendix A.

[45] I'm persuaded that consequentialist and nonconsequentialist ethical theories each have serious problems of their own, but only when viewed as discrete, mutually exclusive systems. The problems diminish when the two are blended such that (1) nonconsequentialism is viewed as a sort of rule utilitarianism, (2) nonconsequentially correct acts often result in disutility on a small scale, but the greater the hypothetical disutility the more imagination must be used to conceive of such events, (3) nonconsequentialism is seen as leading to generally acknowledged beneficial consequences as time and space considerations are increased to a practical scale, i.e., over long enough spans of time and when large numbers of moral actors are involved, and (4) nonconsequentialism is not treated as a semimystical system but as nevertheless, in a way, *a priori*, in that it consists of instructions hard-wired into the minds of living things for *a consequence*, perhaps just the recursive continuation *of* those instructions and the organism's other genetic instructions. I.e., ethics, the 3-millenia-old (as recorded) study into the right way of life, should continue paying attention, as it has for the last few decades, to findings from science: evolution, genetics, sociobiology, and behavioral microeconomics. Therefore, I'm comfortable mixing nonconsequentialist (Chapter 2) and consequentialist (Chapter 3) arguments in the same volume.

[46] This priority of what's good over what's right is a typical feature of utilitarianism. Note how this is the opposite of Kant's ethics, which is deontologic, in which the right has priority over the good.

[47] Tepel (1995, p. 2) wrote:

> Economists and social scientists often seem to write their scientific papers as debaters would. They write as partisan advocates seeking to prove the correctness of a point of view or conclusion by developing strong arguments favoring one side and giving the short shrift to opposing arguments. The conclusions they draw are merely a reflection of their own prejudicial premises. Attempting to apply the scientific method as learned in a geology curriculum to evaluate the work of some economists brought new insight into why economics is called the dismal science.

The licensing advocates have tried to create a climate of fear surrounding the work of economists, to instill in geologists a revulsion for the science of economics. This might be expected, since, to the extent they are successful, they could make considerable headway with their viewpoint among those impressionable enough to fall for it. I consider this a noncontribution to a rational inquiry into licensing. It resembles the way creationists go into school-board meetings and shoo away the geologists and biologists and their knowledge of how planet Earth and life on it developed over the last 4.5 billion years.

[48] A counterexample is the recent (2011), elegant paper by Paglieri, which covers the capture theory and spouts various figures for the amounts by which U.S. lawyers are overpaid and the public is the loser.

[49] Keynesianism is a theory that I might only halfheartedly endorse. In a perfect world, I'd give it my full endorsement. Keynesianism may be summarized thusly: government becomes the spender/buyer/lender of last resort in lean times and the saver of last resort in "fat" times. Dick Nixon (U.S. president 1969–1974, "we're all Keynesians now") and Bill Clinton (U.S. president 1993–2001, "the era of big government is over") may have had an inkling of the power of Keynes's slightly left-wing, surely technocratic theory. Those two ran the only U.S. administrations to achieve any single-year fiscal surplus in recent decades. Everyone loves the first part of Keynes's recommendation (give, spend, lend, and "invest"). Unfortunately, in the real world, nearly everyone ignores the second (tax and save for a rainy day) part. Thus, I withhold my endorsement of Keynesianism: government will spend any savings from fat years on nonsense by way of political machinations and ignorance. I would prefer to trust accumulations from fat times to the likes of a J.P. Morgan (as around the turn of the 20th century) or a Bill and Melinda Gates, or a Leland and Jane Stanford, or a Warren Buffett. I'd much rather that tycoons of this sort be the savers, hoarders of fine art, philanthropists, founders of universities, and spenders and lenders of last resort.

[50] Hoose and Tepel (1990) understand and explain what economists mean by the true costs of licensing, though they have disagreed with economists who say licensing costs too much. Tepel in his 1995 work began to show some sensitivity to the cost of going too far with restrictions on who may practice and how they practice.

[51] Heilbroner has been described as a left-leaning economist, in the vein of Lester Thurow, with whom he has collaborated.

[52] The popular term *free market* is redundant. A market, by definition, is free. The word *market* by itself will suffice.

[53] See Chapter 20 (What is the Role of Enforcement?) of Tepel's 1995 book for a look at the baroque clutter that results as a state licensing board adds many voices to its enforcement process and tries to mimic market processes in this area.

[54] The first resembles a legal defense of the 1990s put up by tobacco companies, that the companies don't manipulate nicotine content in cigarettes. The point being what? The products are still known to deliver an addicting compound, nicotine, whether or not its percentage is manipulated during the manufacturing process.

[55] Consider one factor that drives do-it-yourselfers: income taxes. If 20% of your salary is siphoned off in income taxes, then your take-home pay is lowered by that amount. That's 20% less you possess to hire someone to fix your car. You have to work 20% harder to stay even. Your car mechanic has the same hit on his income. His salary (imbedded in the fees to fix your car) has to be enlarged by 20% to incentivize him to switch in a new set of brake pads or catalytic converter on your car. Altogether, there's a 40% disincentive for you to hire an expert to do a task for you. But wait: there's more. Tack onto that all sorts of hurdles your commercial repair shop has to contend with: property taxes, business taxes, income taxes on the *business's* profits, regulatory oversight, and accountants and lawyers to manage and track all that, all of which drive your mechanic's fees still higher. But wait, there's still more. As a bonus (or its opposite), there are the hurdles *your* corporate boss has to contend with: property taxes, business taxes, income taxes on the business's profits, regulatory oversight, and accountants and lawyers to manage and track all the taxes and miscellany, which drive *your* take-home pay yet lower. Altogether, there may be a 50% penalty when you fork over your take-home pay to hire a plumber, electrician, tree trimmer, gardener, mechanic, or accountant. The bottom line is this: you're highly rational when deciding to switch in a new radiator, alternator, or starter motor yourself. Even if it takes you 5 hours versus 2 hours at a shop that would present you with a bill of $266.73, then you're way ahead. You've worked at a rate of $53 per hour, tax free, in your own spare time, wearing whatever you want, come and go (work on your project) as you please, and without hassles from a boss. Plus you get an education in how cars work and how to address the same mechanical issue or something like it in the future. Repairs on home appliances and improvements in and around the home work the same way. When something is taxed, there's eventually less of it. This includes exchanges between people, for example between car owners and mechanics or between home owners and those who can repair houses and appliances. For just this reason — recognizing the hidden add-on costs of taxes and regulations — I've myself switched in new coolant pumps, differential fluids, fuel pumps, fuel tanks, shock absorbers, struts and shock absorbers, brake parts (disk and drum style), wheel spindles, alternators, engine heads, thermostats, radiators, serpentine belts, pistons and rings, body panels, ball joints, Freon, shaft seals, catalytic converters, axle boots, clutches, wiring harnesses, window motors, and whatnot in my vehicles (not for performance, just to stay even), and done the many regular oil and coolant changes, tuneups, and chassis greasings, and performed body sheet-metal repairs when my youngster have done boo-boos in their late teens and

early 20s. In my home, I've installed new water heaters, sprinkler systems, faucets, fences, attic insulation, tile countertops, window panes, built-in kitchen appliances, and tile and wood floorings over the years. I've repaired built-in conventional and microwave ovens. Again, not so much for improvements or performance but just to keep pace with breakdowns. Work to install and maintain the hardware and software on our many various computers falls on me also.

[56] I've installed and removed walls (nonbearing), doors, water, gas, and sewage lines, sidewalk slabs, fences, electrical outlets, and circuit breakers in the two personal homes I've owned since 1990. All efforts were to help provide housing for myself, spouse, and three children. All efforts were without professional assistance (which I'm proud of) or City of San Jose inspections (which causes me neither pride nor shame). If you feel injured by my work, feel free to contact the authorities.

[57] Some supporters have tried to justify licensing with a reversal on this: better quality assurance means more consumers will feel confidence in the service, and thus more will use the service. There are at least two points that deny this claim: One, licensing isn't necessary to provide consumers with a satisfactory level of quality assurance (one of the main themes of this chapter). And two, licensing must target and hit an optimum level of quality control, a very small strike zone. If licensing sets only bare minimum standards, as is purported, then it does little in the way of quality assurance. As it becomes more restrictive to the point of being too restrictive, which appears to be the case, then Carroll and Gaston's (1983) offsetting quantity/quality relationship increasingly asserts itself.

[58] Freeman (1980), however, found that licensing had only a modest effect on black (African American) representation in licensed work.

[59] I wanted the estimates only so I could charge my neighbor for half the cost. I bought the lumber and rebuilt the fence myself, and I've assigned my labor the same value as the unlicensed contractor's. I may have labored less efficiently than the pros, but the valuation is nevertheless an objective, fair, market one. The neighbor was adamant that (1) a *licensed contractor* do the work, (2) that one contractor rebuild this particular fence *and* the four other fences she shares with her four other neighbors so that all her fences would match, and, evidently (3), that we wait who knows how many more years — while our termite-eaten fence is lying on its side — to have her do all this (we had approached her twice within the previous 3 years about our *single* shared fence, and she hadn't so much as obtained an estimate). Our day in court is scheduled for May 10, 2017. I asked the gentleman at the lumber yard why the estimates of a licensed and an unlicensed fence contractor would differ. He said that the difference is mainly due to worker's compensation insurance, which a licensed contractor will have. If an unlicensed contractor's worker were to be injured on my property, I would need to file a claim with my homeowner's insurance company. Thus, the

18% price difference essentially represents a shifting of the cost of insurance against injury rather than any difference in the quality of the workmanship.

[60] Somewhere back around 1988–1990. My own previous immature reliance on rules, rulemaking, anecdotes, and blinkered loyalty to my profession and its leadership thereafter expanded into a wider horizon of research and thinking in philosophy, history, etc.

[61] California, usually a forerunner and never wanting to be left behind in progressive politics, has its California Environmental Quality Act (CEQA).

[62] You are welcome to thus date me to the last generation who took to printed newspapers and magazines in their teens. And then continued the habit of reading printed news material, wherever one wanted: in a backyard hammock, at the beach, 20 miles from civilization at elevation 11,000 feet in the Sierra Nevada, and so forth.

[63] Or Viagra®. Viagra advertisements are accompanied by the warning "If you experience an erection lasting more than four hours …". The Republican Party candidate for the office of U.S. president in 1996 was Robert (Bob) Dole. Dole lost. Bob Dole soon thereafter appeared in television advertisements hawking Viagra. Dole was defeated by the incumbent, Bill Clinton, U.S. president 1993–2001. Official court depositions published for widespread distribution during Clinton's 2nd term in office document the president receiving fellatio from a young female White House intern in the Oval Office and then masturbating to satisfaction into a nearby sink, although he "did not have sexual relations with" her, per his definition, as he stated for television cameras. Further comment, I trust, is unnecessary.

[64] We once lived in a society free of such nonsense, clutter, and waste. The many warnings and stickers, like "Do not tilt or rock this vending machine," accompanied by a stick-figure graphic of a dunce being crushed by a toppled vending machine, haven't made a noticeable dent in the drag placed on the U.S. economy by the U.S.'s army of plaintiff's lawyers and their sleazy class-action lawsuits.

[65] You know: the traditional balance between state and federal powers, a balance between executive power and Congressional power, and a check by the Supreme Court on both the two other federal branches.

[66] It's quite possible this amount of expenditure is partly, equally, or more than offset by benefits, in the form of lives and injuries saved from industrial hazards, illnesses and lives saved from air and water pollution, property and other natural resources saved from sloppy forest harvesting and agricultural practices, and many other similar benefits from regulations placed on what might otherwise be out-of-control industry. If some such grand cost-benefit analyses have been performed, then they are not well publicized. If any similar individual analyses have been performed when enacting laws requiring environmental-impact analyses (or licensing), then they are few and far between and even less well known.

[67] Another alternative is simply to review the enumerated powers granted in the U.S. constitution. Perhaps, just maybe, the *interstate commerce* and *general welfare*

clauses in the constitution weren't meant to provide for massive federal tax breaks and subsidies to giant agribusiness and energy corporations, i.e., corporate welfare.

[68] Stigler (1980) goes further and says economists should pursue this very question to the exclusion of most other traditional lines of economic inquiry.

[69] My family and I reside at about 37° north latitude. And we like the big, 1960s-style, 10-watt incandescent bulbs in red, green, blue, yellow, orange, and salmon. They provide a warm contrast against the ubiquitous 1980s–90s-style "icicle" stringers of tiny white lights used by our neighbors. Aren't you glad you asked?

[70] If you appreciate art and film, particularly westerns, and wish to understand the tragedy that results when law enforcement is unforgivably lazy and misdirected, please screen for yourself *Unforgiven* (1992) or *The Jack Bull* (1999). Or both. Enjoy. If you need further inducement, consider that *Unforgiven* won the Oscar for best picture and starred Clint Eastwood, Morgan Freeman, and Gene Hackman, and *The Jack Bull* starred John Cusack.

[71] I'd agree the courts may seem feeble on some points, but they have their priorities misarranged. Criminal courts: fight real crime, where there are real victims. Civil courts: don't allow your venues to be held hostage to legal extortion. And redistribute legal resources accordingly.

[72] For sure I speak prematurely. The internet burst forth for most, at least for me, in 1995. I had my doubts about its potential then. We now find ourselves at least 20 years later having witnessed an explosion of information available on the web. When new types of content and formats appear, the results have been quite surprising. It would be surprising if a comprehensive database of court enforcement activities in a searchable format online, for the masses, isn't already available now or won't be in the near future.

[73] Americans often like to point a critical finger at the bribes that must be paid to officials in foreign lands to get work done there. Some foreigners point right back: a big cost of doing business in the U.S. is the bribes that must be paid to attorneys and their clients with meritless legal claims. The counter-charge is deadly accurate. Only a narrow beam of daylight separates one instance of extortion from the other. Only the labels or titles we place on the parties differ. I would include the official permit fees and bureaucratic hurdles and delays needed to do business in the U.S., except that I'm (barely) reluctant to apply the label *extortion* to these practices.

[74] In early 2015, following an automobile collision in late 2014, members of my immediate family received payments of $465 and $2,930 from Allstate Insurance as a result of small-claims judgments from the Superior Court of Santa Clara County, California. The recipients, specifically, were my daughter and wife, who were the plaintiffs in Cases 115 SC 058616 and 115 SC 059316, respectively. The driver of the other car was an immigrant to the U.S. who while running a red light, thankfully, only moderately injured my daughter yet may have felt the need to "save face" while clearly being in the

wrong. She (the other driver) may have been shocked by the swiftness of justice served by U.S. courts and by the power of photographic documentation and detailed, quantitative, site-specific mapping (in affidavits) and testimony provided by a State of California licensed scientist (a geologist, myself).

[75] But if licensing proponents don't want the nirvana fallacy used to criticize licensing (e.g., per Tepel, 1995, Chapter 7), then the same nirvana fallacy is denied to licensing proponents when criticizing a lack of perfection in the courts and the market. The shortcomings of courts and the market are loudly trumpeted, and licensing is offered as the remedy. Why, though, shouldn't the courts and market be left alone with their imperfections? There would seem to be a stalemate regarding charges of a nirvana fallacy, except for one thing: The combined courts and market were present first; they represented the status quo. It's generally accepted in analysis of an issue that the status quo is not to be altered unless there is good reason to believe the proposed alternative would mark a significant improvement.

[76] While seated in small-claims court before my daughter's case (115 SC 058616) was heard, we observed two parties argue over a $200 "leather" jacket.

[77] The plaintiffs in Cases 115 SC 058616 and 115 SC 059316, my daughter and wife, respectively, were swamped with official requests and pleadings — online, in writing (by letter via mail), and via phone calls — to go to no-cost, easy-peasy, court-sponsored mediation rather than proceed with their respective court hearings (we declined). Incidentally, the court fees were moderate, $50 in each instance, and the defendant (and ultimately her insurance company, Allstate) was made to reimburse us for these fees in addition to the compensation for damages awarded by the court.

[78] In 1997, at a meeting of the San Francisco section of AEG, an individual stood up and commented on an editorial I had authored and presented in the section newsletter on the subject of state contracting-out of engineering services. He made a feeble, quaint comment: government will be more efficient than the private sector because government doesn't have to generate a profit. Emotions (his) were running high at the moment, and thus I chose not to respond. Naturally, the response would have been that, in fact, the opposite is true. Government will tend to be *less* efficient *for the very reason that* it doesn't have to generate a profit. If government's activities cause a net loss in wealth, few investigate this situation and make their findings known to those who might create any changes, fewer still do much about it, and so government continues in its inefficiencies ad infinitum.

[79] Wonder why leftists cherish PBS and NPR? Is it possibly due to the — ahem — certain leanings, selection of stories, and focus of these broadcast networks? Let's just say that, to be fair, I've formatted this note in full justification rather than left justification.

[80] My prediction has proven accurate. In August 2015 it was widely announced that the next five seasons of *Sesame Street* would air on HBO and that PBS would air only 9-month-old repeats.

[81] Akerlof won the 2001 Nobel Prize in economics. If you're keeping score, it's now about 4 to 1 in favor of Nobel laureate economists I like to cite in support of the professional-freedom, open-society viewpoint. Remember, though, that Nobel Prizes aren't awarded to writers whose theories are necessarily correct but to writers who stir the pot and produce work that stimulates much other work. I assign Akerlof to that category. Karl Marx undoubtedly would have been awarded a Nobel if he had miraculously lived 90 years longer than he did. Nobel Prizes are only awarded to the living. Akerlof is also married to current Federal Reserve Chair Janet Yellen, a Keynesian. God help us.

[82] Akerlof's and Leland's ideas predate, by many years, so-called Slosson's Law, which is given as "the quality of professional work will sink to the lowest level that government will accept" (Shuirman and Slosson, 1992, as reported by Tepel, 1995).

[83] Famine, yes. The North Koreans (except their oversized military) are in a near-constant state of food deprivation. True famines sweep the land periodically. Most children are malnourished and severely stunted in their physical growth and mental development. This deprivation explains some of the leadership's nuclear saber rattling: they extort massive donations of food and fuel from their successful, peaceful southern neighbor and other nations to try to keep their population fed, warm, and compliant. This situation receives little attention from mainstream news outlets.

[84] In the West, but not in authoritarian Asia, nor the Arab/Muslim part of the world, nor in the southern hemisphere in general. Only in those parts of the world where people developed documented land rights, well defended human rights, fractional-reserve lending, and a preference for deferred gratification and investment. (See Jared Diamond's *Guns, Germs, and Steel* for another, geographic explanation of why things "developed" where.) But not, in the last few decades, in the developed U.S., Japan, and certain European states, which are being dragged only sideways or down by debt and short-sighted government policies.

[85] The Volvo brand has quietly gone to China. Note that the former highly touted safety reputation of Volvos has also nearly gone by the wayside.

[86] I actually trust and like and drink only municipal tap water, and I think bottled water is foolishness. Score a point for government regulation, which closely monitors the safety of municipal tap water.

[87] However, if I access certain websites, TSA will disallow my travel by private air carrier.

[88] Recall, or screen for yourself, the film *It's a Wonderful Life*, 1939, directed by Frank Capra and starring James Stewart.

[89] In a similar way, the only knowledge Oz gave to Scarecrow was the recognition of his own innate intelligence.

[90] I sympathize with those extremely competent businesspeople/professionals who work out of an industrial building on the ugly side of town and still succeed without advertising or other razzle dazzle. I feel an equal amount of disdain for those who hide their marginal level of competence behind a glamorous façade and other marketing hype.

[91] Since licensing creates only an artificial crime, that of performing certain work without a license, we could ask what true crime was committed. I think the individual in this instance behaved unethically toward the employer by misrepresenting credentials, but this might be all. Based on my closeup view of the situation, it appears the individual screwed up royally but didn't screw up in a technical sense as a geologist and engineer.

[92] I doubt there's any conflict of interest here, but I once drove one. The Samurai was reconfigured as the Suzuki Sidekick. I drove a 1991 Sidekick for several years until 2014. I was sad to let it go. This car has been reconfigured once again as the *Vitara*.

[93] Government by unions is a whole branch of leftist economic-management thought under the heading *syndicalism*. Google it.

[94] ValueStar was deleted from the 2015 and later editions of this book. ValueStar maintained the worth of its certificate by basing its ratings on several criteria, including customer surveys conducted by the Public Research Institute of San Francisco State University. It once gave its certification to over 7,000 well-run consumer service companies after careful scrutiny. ValueStar more or less vanished recently.

[95] Consider this ironic or refreshing revelation: We use the reviews of *Consumer's Report* magazine and other similar commercial ratings with barely the slightest idea of the evidence and testing procedures these private firms use to develop their information. Yet we trust them. Again, we consumers aren't starved for information about the quality behind a service.

[96] Email, online bill paying, online banking, online shopping (no need for printed catalogs), and online advertising (less need for direct mail) have severely hurt the bottom line of the U.S. Postal Service. This institution, begun by Benjamin Franklin, may not live long as we know it. When was the last time you dropped off mail in a blue neighborhood postal drop box, or even saw one?

[97] The Arab Spring, the revolutions begun in early 2011 and still in progress as of this writing, began in Tunisia. A street vendor there was enraged when a street inspector confiscated his weigh scale for the last time (he hadn't paid the proper bribes for a necessary license). He then committed suicide by public immolation. From there it spread, helped along by the internet. Protestors were able to exchange messages by Facebook. The authorities were able to clamp down on phone and some internet communication, but not Facebook. There's also the (apocryphal?) story of authorities going through crowds of protestors demanding, "Where is your Facebook? Show me your Facebook and hand it over!"

[98] Mark Klee (2013) studied a relationship between licensing policies and efforts by practitioners to receive advanced training. His work is thoroughly confused and confusing. Klee, a U.S. Census Bureau worker, in his paper, which is free of peer review, stated (p. 3) that "… in some cases more stringent licensing regulations are associated with a wage discount." An extraordinary claim requires extraordinary evidence, and, as may be expected, the devil is in the details. Klee's findings are wildly disparate: "Accountants in states requiring better performance on failed exam sections earn a 16.3% (standard error 6.5%) wage premium. On the other hand, accountants in states requiring more graduate education receive a 10.1% (standard error 6.1%) wage discount. This unexpected result suggests that more stringent graduate education requirements do not restrict entry among potential accountants, but rather they stimulate entry." Klee, naturally, was startled by his results because he paid scant attention to the arrow of causality (do education requirements really stimulate entry?) and neglected to control for any demographic, educational, and economic variations among the various U.S. states. His analysis is further marred by a lack of critical disaggregation (p. 12): "This distinction [between licensing and certification] is potentially problematic for my econometric analysis. My individual-level data do not include certification status."

[99] Perhaps a local guild, made up of a collection of bakers in a town of population 376 in what is now, say, France or Germany in the year 1053 could make elegant decisions restricting who may bake loaves for sale and who may serve as apprentices for however many years. Perhaps the wisdom of the guild was exquisite and took into account the desires of their fellow villagers in terms of the selection, quality, quantity, weights, and prices of bread products offered for sale. After all, there are relatively few decisions to be made, given the small number people involved. Alternatively — we can only wonder — perhaps the decisions of the local baker's guild take a more political, self-serving turn.

[100] Four additional factors contributed to the Great Recession: (1) Policies of the Federal Reserve during the period of 2002–06 kept interest rates unusually low in a misguided attempt to soften the effects of the 2001 bursting of the dot-com bubble. Then-Fed Chairman Alan Greenspan, whom I once admired (see Martin, 2000), apparently kept too close an eye on gold prices to the exclusion of bubbles in other asset prices, namely real estate. (2) Federal (tax) policies encouraged homeowners to borrow against home equity, thus shifting normal (minor) consumer revolving debt to second mortgages on their homes to pay for vacations, boats, and spiffy home remodeling jobs. (3) Petroleum prices spiked nastily in the period of 2005–2008. Energy price jolts always tend to have unpleasant effects on the U.S. economy. The emergent Asian economies began sucking heavily on the global net of oil wells. (4) Crony capitalism. That is, capitalism of the crony variety rather than its pure form. In the years running up to 2007–08, so-called too-big-to-fail investment firms, banks, and other megacorporations,

like GE, lent long and borrowed short. When caught with their pants down (despite Sarbanes–Oxley, 2002), those with the best connections went crying to their buddies in the federal administration, specifically the secretary of the treasury, for bailouts in the form of bridge loans; some, as we know, were allowed to fail. In a normal environment (perhaps with benefit of the Glass–Steagall banking act of 1932 [largely repealed in 2000]), corporate leaders who find their firm in temporary financial trouble but believing rescue to be possible would raise capital by issuing new stock, thus diluting existing stock and thus punishing existing shareholders and the firm's managers. We may rightly file away the energy and Chinese events as exogenous. Thus an asset bubble, self-inflicted wounds, and exogenous events taken together, may be considered a sort of perfect storm.

[101] And, for a brief time, so-called Occupy protesters smash windows of small-time shopkeepers, disrupted the activities of port workers, and dumped filth in downtown Oakland, California. They protest against a "1%." Yet this ultracompensated 1% elite consists largely of Hollywood actors, professional sportsmen, and the Steve Jobs types, whose entertainment and products the occupiers undoubtedly worship and pay for, and lawyers.

[102] My gosh, is there a bit of Marxism, perhaps even the concept of false consciousness, involved here when using the term *proletariat*?

[103] The term *rent* isn't restricted to what a landlord charges a tenant. The more generalized term *rent*, as used by economists, is defined as a return over and above any normal opportunity cost. Note also this explanation, in our current context:

> [A] political restriction on the numbers of people entering into the competitive market for services of the guild has the effect of raising the return on investments in the guilds training, especially for those already practising, by creating an artificial scarcity of guild members. … [T]o that extent the practice of limiting entrants to the field is a rent seeking activity, and the excess return realized by the guild members is economic rent as defined. (Anonymous, various authors, 2012a)

[104] Alfors et al. give the last figure as $7, which appears to be a typographical error. The correct figure is $17, given by dividing their total damage figure of $182,400 by 11,000 lots built in the 1963–69 period. A necessary assumption regarding all these dollar figures is that the authors measured costs in constant dollars. The most likely benchmark year is 1969 or thereabouts, judging from the book's publication date and from the nominal (not inflation-adjusted) dollar amounts themselves.

[105] An inquiry to Mr. Slosson regarding their arithmetic went unanswered.

[106] Spellman (1990) says the grading ordinance paid "handsomely" but gives no figures.

[107] Naturally, this is false. The four groups of flyers in the animal kingdom — insects, flying reptiles (now extinct), birds (perhaps the dinosaurs that are with us today), and bats — evolved (independently) from ancestors that could climb to a high perch and use rudimentary anatomical structures to

glide. Primitive photoreceptors yielded obvious survival advantages in the seas of the Cambrian Period and would have gone on from there to produce true eyes.

[108] North Korea's people (except its military personnel) have endured horrific famines in recent years and continue to do so.

[109] I wish to not fall for nor engage in the evidence-of-absence-is-absence-of-evidence fallacy. There may be state licensing of geologists and engineers, by way of state-administered examination, elsewhere besides in the U.S. and Canada. It's probably out there somewhere. I've neglected analyses of South America, Africa, Oceania, and much of Asia in this discussion. Please hold my feet to the fire and enlighten those interested by way of more-thorough research and discussion.

[110] Lots once holding houses and families are being turned into urban farms. City administrators are encouraging the last residential holdouts in once vibrant, now marginal areas to move elsewhere so that public infrastructure there can be abandoned and resources redirected to neighborhoods that are still intact. Populations have dropped by a half over 60 years.

[111] I believe it has failed to anticipate much of the nonsense foisted on the American population. For example, the question of whether the federal government may require that individuals buy health insurance, with penalties for noncompliance to be administered by the Internal Revenue Service via one's personal federal income tax, was answered in the affirmative by Chief Justice John Roberts in 2012.

[112] Indeed, I tend to hold political speech in low esteem: it usually concerns whose rights shall be stripped or traded away during a given election cycle or with a given policy decision.

[113] It could prove difficult to develop differentiated, truly state-specific exam items when the states are, say, Kansas, Iowa, and Nebraska.

[114] The multiplicity of state constitutions can yield diverse results, as Doherty (1997) explained. Twenty-two state constitutions explicitly enunciate a person's right to use a gun for personal defense, without the confusion of a (federal) militia clauses. Other states have upheld a woman's right to financial assistance for abortions.

[115] An interesting historical footnote: For several decades in the early 19th century there was (nearly?) a 13th amendment to the Constitution that made it illegal for a citizen to claim any title of nobility or honor, but the amendment disappeared under peculiar circumstances.

[116] NATO stands for *North Atlantic Treaty Organization*. William Jefferson Clinton served as U.S. president from 1993 to 2001.

[117] When I think of great leaders, I think of the founders of the U.S. republic in the 1770s and 80s, Dwight Eisenhower, who warned against "unwarranted influence, whether sought or unsought, by the military-industrial complex," and Ronald Reagan, who said "government is not the solution to our problem, government is the problem." And perhaps Barack Obama, who quietly began charting a new Pacific orientation to U.S. foreign policy in

2011 (see Nye, 2012). Obama's bailout of Detroit (our catch-all term for the U.S. automobile industry) may have served his own cynical political purposes. Yet full payback of these loans, from government as lender of last resort, eventually resulted. The price Obama extracted in return for this bailout was extremely stringent fuel-efficiency standards on cars eventually sold in the U.S. Obama's "Dream" act of mid 2012, in which young immigrants brought over the border illegally are allowed to stay, was another cynical political maneuver, but I concur with him that it was "the right thing to do." I'd wager that Obama was (inadvertently) prescient, and these measures will pay high dividends.

[118] Geologists should keep in mind, however, that the relationship between themselves and engineers isn't one of pure conflict: licensed engineers have been pivotal in helping geologists enact licensing laws for themselves in certain instances. Engineers have recognized the benefits of geology done well in support of design of engineered works. Engineers also recognize that licensing of geologists helps to release engineers from liability for geologic work (Hartzell, 1990; Schmidt, 1990).

[119] Civil engineers are already licensed everywhere in the U.S. Therefore, wherever geologists are licensed in a state there (generally) will be two boards: one for the engineers and one for geologists. Thus, a dilemma presents itself: which profession would want to see its board dismantled first? The best option, of course, is for both professions to avoid getting into the combat ring together in the first place; too late now.

[120] It may occur to the reader that the alternative to licensing seems complex, a complicated system of subsystems, actions, functions, and parties. Licensing, in contrast, seems so simple. Simplicity should usually be favored over complexity. I would tend to agree. If only it were so. In response, I would point out that while licensing in my home state has been the rule for some 40 years, most or all of the alternative private-sector and judicial mechanisms have stood healthy, and consumers still see fit to rely on them.

[121] Note that sunset provisions in licensing laws are a crude attempt to emulate this important feature of the market.

[122] My state geologist licensing board was reconfigured in recent years: It was absorbed into the engineers' board. The result is BPELSG, the Board for Professional Engineers, Land Surveyors, and Geologists. I know of no consumer input into this decision, and presumably the move was made by the governor and legislature and fought over by the various professional associations and their lobbyists.

[123] Stories about Reuben Kessel, as told by George Stigler in his *Memoirs...* (1988), are interesting. Stigler said (p. 159) that Kessel "caused a vast commotion by an early article arguing that hostility by the American Medical Association to Jewish doctors had been based upon their price-cutting propensity." And Kessel once told Stigler about a trip to the operating room with an attack of appendicitis while traveling (p. 158). When Kessel "met the surgeon on the way to the operating room he asked what his medical

credentials were. 'For heaven sake, Reuben,' ... expostulated [Stigler], 'what would you know about the credentials?' 'Not much, but if he got on his high horse, I would have called off the operation.' Fortunately for Reuben's health the surgeon did not mount a steed."

[124] Race is mentioned. These authors and their study give no harbor to racism. Focus on the dependent variable in the study by these sociologists: professional success. One can guess at the racism and other social obstacles placed in the path of racial-minority professionals.

[125] Wilson (1989) supplied this footnote (with Wilson's references abbreviated here and provided in full later under *References*): The leading works are the metaanalyses by Hunter and Schmidt. See in particular J.E. Hunter and R.F. Hunter (1984); F.L. Schmidt and J.E. Hunter (1977); J.E. Hunter (1980, 1986). The ability of cognitive tests to predict job performance is reviewed in a special issue of the *Journal of Vocational Behavior*; see especially the summary essay by Linda Gottfredson (1986).

[126] If our 15-year 747 pilot couldn't pass the Cessna 152 test, then why not? Perhaps he or she is a poor test taker. Perhaps the Cessna 152 test doesn't sufficiently test for critical 747 piloting skills, such as leadership, interpersonal communication, general intelligence, judgment, and calm under pressure.

[127] Traffic lights might not be the best example of government regulation. Usually when we (I) think of government regulation, we think of it acting as an uninvited third party. In the case of traffic lights, there are only two parties involved: (1) those who drive their cars on the roads and (2) the owners of the roads, the local roads department, who are essentially the same people who install the traffic lights. It's clear the traffic lights are acceptable. The property owner has a right to impose controls on the people who are using the property.

[128] Deming (1982) called for breaking down barriers between departments, such as research, design, sales, and production. Could this be seen as analogous to allowing crossover, communication, and blurred boundaries between geology and engineering? He called for removing barriers that rob workers of their pride of craftsmanship. Could this be seen as analogous to reducing second-guessing of geologic judgment by local planning and building departments? (See also Avolio, 1994.) Deming made the discovery of consumers' needs paramount; yet how much effort has any geology licensing board or licensing advocate spent learning the desires of consumers, not what experts think consumers need but what consumers actually want? Note also that Deming recognized the epistemological problem of state central planning when he said "No government planner knows enough ...."

[129] Francis Fukuyama, a widely respected thinker whom I tend to place great trust in, has said (2013), to a certain extent, the opposite: a somewhat powerful government of decision-makers in positions to make wise initial, astute, far-ranging political, social, and economic decisions can set a nation

on a course to far outstrips its neighbors in terms of general human flourishing.

[130] There was also talk of a so-called third way, i.e., some discrete path between these antipodes of social organization, which the West (naturally) should adopt. Such talk was often promoted by the clergy. Historical events interceded, and the Soviet Union and its satellite states convulsed into something else. The role that China and its controlling Communist Party will play in future events regarding its neighbors and the world remains to be seen.

[131] There is some backpedaling on the point of resource geologists (Tepel, 1995, p. 35).

[132] Maybe a powerful state, however, has a stake in promoting the watching of sports as a distraction from more-fundamental social issues, as in the era of gladiatorial contests and bread and circuses of the Roman Empire.

[133] Granted, it will be rare to find acceptance of both ideas in the same person. The two ideas stem from very different outlooks.

[134] If we as a society all divide up into opposing camps of organized occupations, all using the levers of government in a battle over turf and (let's face it) money, then we may achieve something akin to syndicalism. *Syndicalism* is derived from French and Spanish terms meaning trade unionism. As one variant of socialist economics, syndicalism is a socioeconomic system in which society is to be organized from the bottom up based on workplace democracy and trade unions.

[135] Answers to both of the two preceding questions would be yes, in a totalitarian society, in which the state had a hand in all aspects of society, including market forces, ethical norms (via the press, suppression of religion, and personal cults of leadership), courts, and miscellany.

[136] Critics of the dramatized (staged, filmed) versions of Anne Frank's plight have taken issue with the undue emphasis on this one particular quote from her diary. Anne Frank probably took this position only as a personal emotional necessity to deal with the situation placed on her by her tormentors.

[137] There might be readers who have health risks from elevated blood pressure and feel a rise coming on now. They can rest assured I don't prejudge people in power as corrupt or venal, and I'm particularly disinclined to extend the nefarious-motives charge to the leaders of the geology profession, who've shown they've at least tried to think this issue through. Some readers might further want to calm themselves by jumping to the last two paragraphs in this chapter, though they will deprive themselves of the surprises to be had by keeping continuity with the text.

[138] Tepel provided no references from which we could learn who his "philosophical thinkers" are.

[139] For such a society to function, there is a critical role for public social functions. A democratic/republican public body could tax citizens to the tune of 20% of gross domestic product to maintain a triad of land, sea, and airborne defense weapons, catch criminals and settle disputes in court, build and

patch roadways, and allow only (relatively) clean (as technology allows) cars and factories to discharge their waste onto roadways and waterways. For such a society to function optimally, we could or should also leave much room for families, churches, and other voluntary organizations to care for one another in all the vast, immeasurable ways that people do so.

[140] As if Steve Kroft, of *60 Minutes* and CBS News, were a member of what Hillary Clinton (former Barry Goldwater [1964] operative, former first lady, former Senator from New York State, 2008 candidate for the Democrat Party nomination for president, Secretary of State 2009–2014, candidate for president in 2016, and all-around power-hungry busybody) called, during husband Bill Clinton's administration, "a vast right-wing conspiracy."

[141] I so loathe the word "address". It is so utterly devious and devoid of content: it conceals the fact that "someone" will discuss and debate an issue, wave away any incisive inquiry, set in place no lasting solution, and hope that the issue vaporizes with the next news cycle.

[142] Doesn't the reviewing of reports make this issue nearly go away?

[143] Economists theorize that incomes of licensed professionals will decrease if licensing is removed. We could also expect that the incomes of unlicensed geologists could increase. The amount of any change in income for the profession as a whole (this amount is unknown) *may* be of passing interest, here in a discussion of motives. However, the main point of this book is the need to analyze the extent to which *consumers* benefit or suffer from professional licensing.

[144] Sometimes there are published unconscious slip-ups where hints of motives get exposed, as in an admission by James Williams (1990), "By far comments [responses to a questionnaire sent to geologists] reflected the interest to do what would best serve the geologists in each state depending on the circumstances in that state," and another by Karen Yong (1990), "professional registration ... is a right that is earned, bargained and guarded by practitioners whose social and economic rewards from such status are plentiful."

[145] One exception is when two bankers, Forest Aldrich and Douglas Chandler, writing on letterhead from local (Washington state) branches of Coldwell Banker and Washington Mutual Bank, respectively, presented written support for licensing geologists in Washington state (Anonymous, 2011d). Undoubtedly, these two banker-writers were prodded to write by representatives from geologists' professional organizations. Anyway, may banks be considered consumers? Yes, indeed. A bank essentially owns a home to the extent that the mortgage balance exceeds homeowner equity.

[146] Boulier's (1980) study also found that a move from the current low-mobility condition to nationwide reciprocity for dentists would result in $52 million in savings for consumers. Curiously, however, the findings also show that it would result in a mean net increase in dentist incomes. Conceivable this could be explained by a lack of desire and power on the part of dentists to come to agreement on reciprocity on a nationwide basis; gains for some would be losses for others.

[147] Perhaps this offers little in terms of support for the deregulation. It has been said that medical practice turned a corner, causing more benefits than harm on balance, only around the time of the (U.S.) civil war.

[148] Does Tepel mean by this that licensing takes something away from the geology profession and gives it to consumers? I think he does. By altruism, Tepel implies that licensing is a form of pain that a profession inflicts on itself in order to benefit the public. However, geologists who have worked tirelessly to institute licensing are granted nothing but praise, thanks, and awards *by* the profession for their service *to* the profession. There's a contradiction: the altruism and the accolades would tend not to square with each other.

[149] Or, perhaps, it's not so odd. Accolades and awards are heaped on licensing advocates. By their fellow professionals. (Not by consumers, their advocates, or other purely public-interest groups.)

[150] The Chinese have embarked on a 21st-century version of colonialism in Africa. While extracting raw materials (metal ores, wood, and energy) from the southern hemisphere, just as the West did during the 18th, 19th, and early 20th centuries, China may be in the process of quietly setting up mini Hong Kongs, colonies, and similar capitalist enclaves there. Just watch.

[151] In Gross (1978) we read that the use of umbrella agencies to supervise a number of professional boards in a state has not made these boards more accountable.

[152] I agree. Geologists are in a highly favorable position to judge the work of other geologists. Let them. Require, if you feel so inclined, that geologists post for public inspection the judgments of their peers (professional association memberships and certifications) and scores on any tests. Allow geologists to work and let consumers contract with them with only minimal further government regulation and practice restrictions. This is my try, I think successful, at cutting out the nonsense and internal contradictions that licensing foists on consumers, professionals, and the relationships between them.

[153] And protect (restrict) the labor force and its unions from teenagers, mine and others, who would willingly work for low pay.

[154] Nothing in the literature favoring licensing of geologists, all of which ignores the large volume of antilicensing literature, can bill itself as an evenhanded exploration of the fundamental issue: Should licensing exist? It was made clear at the outset that the volume in hand is a compilation of arguments against licensing. Perhaps this volume together with the prolicensing literature will provide observers with the balanced information required.

[155] I'm talking here of this work, the one you're reading. Certainly it's not a vetted monograph by a respected social scientist, and no Nobel Prizes will be coming my way. It is, however, by someone who has viewed the issue from both sides. It does present a summary of the available literature in mono-

graphs and peer-reviewed journals by respected economists and other thinkers.

[156] Keynes is one economist whom we would do well to ignore. For an explation, see Lewis (2009).

[157] Kuznets, Friedman, and Stigler were awarded Nobel Prizes in economics in 1971, 1976, and 1982, respectively.

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