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*Comparing Law as Science with Science in the Law: Preliminary Thoughts*

**Abstract:** Comparative law often compares institutions or sources of law from various countries. This article rather compares civil law and common law families, but does use Germany and the USA to represent the two families respectively. Rather than focus upon institutions or sources of law, this article compares how these two families understand their practices of law, specifically in reference to science. First the concept of comparison itself is examined through its western conceptions in the discipline of rhetoric. Then the relationship of law to science is discussed, comparing the legal standard of scientist as authority on science to judge as ultimate adjudicator on scientific matters. The author concludes that law requires an evaluative element in its practices if it is to effect justice and further concludes that the evaluative element is better conceived by philosophy than science. Lawyers are thus encouraged to seriously consider evaluative practices, but are invited to do so on their own, rather than treat philosophy as a body of knowledge only present through the philosopher as expert witness.

**Keywords:** comparativism, rhetoric, science, evidence, scientism, moral, evaluative

## Introduction

From the two perspectives of comparative law and comparative disciplines, the following article will outline some foundational points regarding legal knowledge production. The comparative law aspect will largely compare common law with civil law thinking, using a few examples from particular systems. The comparative disciplines will compare the disciplines of law, science and rhetoric in an exploration of the changes of the nature of law over time. A review of the literature in comparative law would show that most often, it is a practice of law looking at itself in the mirror, with no way of accounting for the mirror; that is, no consciousness of what it means to compare. Without reflection upon comparison, comparative law defaults quickly to a juxtaposition of positive norms or processes from two or more states. This is a problem in that the default process pulls comparison into thinking about law in limited ways that are typically European. As Pierre Legrand has noted, most comparative law is comparing rules from within Europe or of European states to one of the two North American states.<sup>1</sup> This legal comparisons will, as Bernhard Grossfeld,<sup>2</sup> Pierre Legrand, Matthias Reimann<sup>3</sup> and other notable comparativists have demonstrated, be typically Atlantentric, with observations from common law, represented by the US compared to civil law represented by Germany. Some resonances from common law's pedigree in customary law echo with colleagues from such diverse places as India and Ethiopia.

The research question is whether law, as we understand it as a discipline of education, research and practice, has its own way of knowing the world? The method for answering the question

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<sup>1</sup> Pierre Legrand, *Foreign Law: Understanding Understanding*, 6 J. COMP. L. 67 (2011).

<sup>2</sup> BERNHARD GROSSFELD, *CORE QUESTIONS OF COMPARATIVE LAW* (Vivian Grosswald Curran trans., Carolina Acad. Press 2004).

<sup>3</sup> Mathias Reimann, *The Progress and Failure of Comparative Law in the Second Half of the Twentieth Century*, 50 AM. J. COMP. L. 671, 675 n.18 (2002).

will be comparative across disciplines as well as across legal cultures. The answers will use the notion of science in two different ways—first, to consider whether law *is* a science and second, how law comports itself *towards* natural sciences. In the civil law, one often finds doctoral students, for example, who have read many texts that were in some manner connected to the topic of their thesis and then described what those other texts had said. If there was any prescriptive statement in the thesis, it is because they had studied a piece of legislation and rationally concluded that the legislation had failed to anticipate some possible set of facts that would come under its purview. Aha! There was a hole in the legislation. This “aha moment” seems to lie at the core of what many civil law students feel to be their science.

It is equally as telling about the common law that historically there was no such thing as a doctoral degree. One can understand that fact if when one considers that in Europe, the title of “doctor” was originally awarded as a teaching qualification. Since the common law was not taught at universities, there was no need for doctors of law. Still today in the US, although less so in the UK, Ireland, or Australia, practicing lawyers are often the teachers of law, leaving some students justifiably confused on why they carry the title of “professor.” When the common law student is brought to research, perhaps through a requirement to publish something in a law review, he or she is given a clear assignment—read a new case decision of a relevant court and explain to your reader what it means for the practice of law in this area—status quo ante or has the law changed? This article will, like the common law itself, build inductively from these two basic experiences of research in common law and civil law.

## I. Evolution and History of Comparative Law

Turning to comparison, one might note that whereas the civil lawyer works deductively, assuming that legislation has been intended to be all-encompassing, the common law, whose spirit<sup>4</sup> is to fix only that which is broken, works inductively to create new law or make new applications as problems arise, slowly, “like the accretion of a coral reef.”<sup>5</sup> Mathias Reimann reminded us that “outside of a small hard core, most of those engaged in comparative work of one sort or another do not . . . think of themselves (primarily) as comparative lawyers but mainly as Asia specialists, Russian law scholars, constitutional lawyers with comparative interests, etc.” And yet if these scholars and lawyers are specializing in legal cultures other than their own, they must be doing so by way of comparison with their own legal culture. After surveying comparative law literature, Reimann concluded that “The problem is that these books, articles, ideas, and critiques do not add up to a sum that is larger than its parts. Instead, they constitute a potpourri of disparate elements that coexist side-by-side but rarely relate to any overarching themes.” It is my contention that the lack of unity to which Reimann and others allude in the development of comparative law is due to focusing on the laws, instead of comparison itself. Even those relatively few scholars who have attempted to focus on comparison, have typically done so without reference to a disciplinary foundation for comparison.<sup>6</sup>

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<sup>4</sup> ROSCOE POUND, *THE SPIRIT OF THE COMMON LAW* 182-83 (Marshall Jones Company 1921).

<sup>5</sup> Learned Hand, *Book Review*, 35 HARV. L. REV. 479, 479 (1922) (reviewing BENJAMIN N. CARDOZO, *THE NATURE OF THE JUDICIAL PROCESS* (Yale Univ. Press 1921)).

<sup>6</sup> Kirk W. Junker, *A Focus on Comparison in Comparative Law*, 52 DUQ. L. REV. 69 (2014).

## II. Rhetoric

While scientific methods and criteria are held to drive much of western thinking in the twenty-first century, it might be difficult to accept that a liberal art has something to offer a study of comparison in the law. But the fourth century B.C. work of Aristotle remains seminal to western thinking. Alfred North Whitehead noted:

So far as concerns philosophy only a selected group can be explicitly mentioned. There is no point in endeavouring to force the interpretations of divergent philosophers into a vague agreement. What is important is that the scheme of interpretation here adopted can claim for each of its main positions the express authority of one, or the other, of some supreme master of thought - Plato, Aristotle, Descartes, Locke, Hume, Kant. But ultimately nothing rests on authority; the final court of appeal is intrinsic reasonableness. The safest general characterization of the European philosophical tradition is that it consists of a series of footnotes to [Aristotle's teacher] Plato.<sup>7</sup>

Several important applications to law can be made from Whitehead's point. First is that "nothing rests on authority." This has historically been true for science when we were all told we could use mathematics and experimentation to prove truths for ourselves. But that is not how we experience life generally. Instead, we constantly accept authority to tell us what to believe about our food, heat, waste, transportation and health. Most western persons would be hard-pressed even to explain the technology of the house in which they live. And so in fact we feel that we must, even in areas that are knowable through rationality, understand our world instead based on authority. Our lack of ability or desire to know science puts the function of science in the same psychological pot as religion for us. A second important fact to be noted from Whitehead for law is that Plato's immediate student, Aristotle, was in fact both a scientist and a scholar of the humanities. And perhaps most important for comparative law, is the fact that rhetoric, often precisely as described and taught from Aristotle's text, *Rhetoric*,<sup>8</sup> formed a basic part of the education of civil, ecclesiastical and common law lawyers up through the middle ages. Aristotle's work stated that rhetoric was the art of persuasion by any means available. The available means of persuasion to the rhetorician were categorized as *ethos*, *pathos* and *logos*, each of which had a particular intended meaning in Greek culture, but have subsequently been oversimplified in English as appeals to authority, emotion or rationality. For the purposes of this article, that simplification will suffice.

In Book I, chapter 7 of his work *Rhetoric*, Aristotle focused on the degree to which things were comparable. First, one determines "the sources from which we must derive our means of persuasion about good and utility . . ." <sup>9</sup> But then, because "it often happens that people agree that two things are but useful but do not agree about which is the more so, the next step . . . will be to treat of relative goodness and relative utility."<sup>10</sup> Aristotle's then reflects upon the nature of what comparison by degree means. He first notes that a greater number of things can be considered more desirable than a smaller number of the same things. Second, he says that that which is an end is a greater good than that which is only a means. Third, he adds that that which is scarce is greater than that which is abundant. Fourth, he maintains that what a person of practical wisdom would choose is a greater good than what an ignorant person would choose. Fifth: what the majority of people would choose is better than what the minority would choose. Sixth, he adds that what people would really like to possess is a greater good than what people

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<sup>7</sup> ALFRED NORTH WHITEHEAD, *PROCESS AND REALITY* 39 (Free Press 1979).

<sup>8</sup> ARISTOTLE, *RHETORIC passim* (W. Rhys Roberts trans, 2004), <http://www.bocc.ubi.pt/pag/Aristotle-rhetoric.pdf>.

<sup>9</sup> ARISTOTLE, *RHETORIC* 28 (W. Rhys Roberts trans, 2004), <http://www.bocc.ubi.pt/pag/Aristotle-rhetoric.pdf>.

<sup>10</sup> *Id.* at 29

would merely like to give the impression of possessing. And finally, Aristotle writes that if a thing does not exist where it is more likely to exist, it will not exist where it is less likely to exist.<sup>11</sup>

If one were to look for a moment at how comparison is treated in comparative law, it would not be unfair to look at the work of Konrad Zweigert and Hein Kötz as being representative of the field of comparative law. A cornerstone feature of the comparative law method devised by Zweigert and Kötz in their standard work, *Comparative Law: An Introduction*,<sup>12</sup> is the *preasumptio similitudinosa*. A lesson learned from the study of comparison is that although focus upon, and critiques of presumptions of similarity or difference are capable of locating material to compare, they are just the beginning of the comparison process. In the standard work in the field of comparative law, Konrad Zweigert and Hein Kötz emphasize that most comparison is made difficult precisely because there are both differences and similarities between any phenomena under examination. Aristotle did not divide comparison into binomial distinctions, but instead focused upon the “degrees” of difference and similarity. Harvard legal comparativist Mary Ann Glendon has noted that “After all, most cases that reach the Supreme Court involve choices between positions that are supported by weighty moral and legal arguments, and the Court more often than not must make choices that, either way, will entail substantial individual or social cost.”<sup>13</sup> In other words, all the discussion about whether to proceed from the presumption of similarity or difference, as famously presented by Zweigert and Kötz, is misleading. Most, if not all cases are both similar and different by matters of degree, and the choices must be made on grounds beyond simple categorical similarities or differences.

When one then applies the notion of comparison as degrees to science, one finds that scientific thinking quantifies degrees of difference and leads us to make our choices based upon that which is quantifiable. That too might be helpful, but not all differences and similarities of degree are quantifiable. In fact, it has been said that that which is quantifiable is uninteresting and that which is interesting is not quantifiable. Thus when the differences or similarities are not quantifiable, or when that which is quantifiable is not socially relevant, we are still left with the task of choosing based on qualities, not quantities. One may well ask whether these conceptions of comparison have ever been applied directly to law. There are strong implications that it has.<sup>14</sup> By the twelfth century, in Europe, the historical record reveals that increasing emphasis was placed on method, including the method of proof. “The concept of the hypothesis was put forward by the rhetoricians to supplement the dialectical concept of the thesis (*quaestio*). Proof of hypotheses was understood to require the presentation of evidence, which in turn implied the notion of probable truth.”<sup>15</sup> This should sound quite familiar to the lawyer of even the 21<sup>st</sup> century.

Somewhere between the human procedures of determining social truths through trial by fire, duels and other non-scientific measures and today’s scientific method, rhetoric helped law to establish criteria and methods for determining what would be accepted as evidence and the procedures for making the determination. “The parallels with law were stressed: A well-known treatise of the twelfth century, *Rhetorica Ecclesiastica*, stated that ‘both rhetoric and law have

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<sup>11</sup> See, EDWARD P.J. CORBETT & ROBERT J. CONNORS, CLASSICAL RHETORIC FOR THE MODERN STUDENTS 97-99 (4th ed. 1999).

<sup>12</sup> KONRAD ZWIEGERT AND HEIN KÖTZ COMPARATIVE LAW: AN INTRODUCTION (Tony Weir trans., 3rd ed. 1998).

<sup>13</sup> Mary Ann Glendon, *Law in the Age of Globalization*, 52 DUQ. L. REV. 11 (2014).

<sup>14</sup> Junker, *supra* note 6.

<sup>15</sup> HAROLD BERMAN, LAW AND REVOLUTION: THE FORMATION OF THE WESTERN LEGAL TRADITION 150 (Harvard Univ. Press 1983) (emphasis added).

a common procedure.’ The *Rhetorica Ecclesiastica* also said that defined *causa* was a ‘civil dispute concerning a certain statement or a certain act of a certain person,’<sup>16</sup> which we would of course recognize as an actual “case” today. The development of the hypothesis in rhetoric provided a pattern for the development of the legal *causa*. The *Rhetorica Ecclesiastica* also established the persons and their roles in the process of finding the truth of a disputed matter, insisting that a judge, a witness, an accuser, and a defender were all necessary. Further rules of relevancy and materiality were developed. And yet, despite these useful procedures and rules, after the end of the fifteenth century, this system of “artificial reason” of the law was discarded in most countries of Europe, as has been shown by Alessandro Giuliani.<sup>17</sup> Instead, something called “natural reason” came to the fore, and emphasized mathematical logic.

Rhetoric was not only intimately connected to learning the civil law, but to learning the common law as well. The medieval common law lawyer was not educated at the universities of Oxford, Cambridge or London, but rather at the inns of court. Prior to entering one of the Inns, the students sometimes had some university education, but more often did not, and would have been secondary-schooled in the medieval trivium of logic, grammar and rhetoric. We see evidence of such schooling in proving probabilities through rhetoric when “rules of relevance were applied first to the propositions (positions) to which parties and witnesses swore oaths and later to the allegations (*articuli*), proved through witnesses and documents, which gradually replaced the older form as oaths were devalued.”<sup>18</sup>

We also see evidence of schooling in rhetoric when we look to the notion of commonplaces. Unlike natural science, which looks for its truths in the atomistic and mathematical nature of the material world, rhetoric observed and recorded human behavior over centuries and claimed that for a given culture, common “places” (*topoi*) could be observed where certain categories of arguments resided.<sup>19</sup> In the 1990s, Melia and McGuire used the term “minimal realism” as a part-acknowledgment and part-rejection of the social construction of science which had caught the attention of academia.<sup>20</sup> Melia had explained that when a ship is coming into harbor in fog at night, the sound of its horn will echo off solid objects in the harbor, thus giving the sailors as sense that something solid was there. It is night and foggy so they cannot say exactly what, but the response to their call is not a social invention. For rhetoricians, the resonance that an appeal to probability has with its audience—be they bloggers, consumers or judges in court—is similar to that ship’s echo.

And finally, in this brief discussion of the evidence that the lessons of rhetoric are present in current practices of law, we might note that while students and lawyers today rely heavily on definitions as though they are explanations of the thing itself, the rhetorician would remind us that “definition” is just one of the before-mentioned common topics among five, with the others including relationship, circumstances, testimony and most importantly for comparative law, comparison.<sup>21</sup>

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<sup>16</sup> “Causa est civilis disceptatio de certo dicto vel facto certae personae,” as quoted in BERMAN, *supra* note 15, at 154. (citing Alessandro Giuliani, *The Influence of Rhetoric on the Law of Evidence and Pleading*, JUDICIAL REV., 62, 231 (1969)).

<sup>17</sup> Alessandro Giuliani, *The Influence of Rhetoric on the Law of Evidence and Pleading*, 62 JUD. REV. 231 (1969).

<sup>18</sup> BERMAN, *supra* note 15, at 154-55.

<sup>19</sup> CORBETT & CONNORS, *supra* note 11, at 85.

<sup>20</sup> Henry Krips et al., *How to Tell the Dancer from the Dance: Limits and Proportions in Argument About the Nature of Science*, in SCIENCE, REASON AND RHETORIC 73-93, *passim* (Univ. of Pittsburgh 1995).

<sup>21</sup> According to Aristotle, comparison is a “tendency of the human mind.” (94) I would go further and say that we as animals are in fact reliant upon physical comparison for survival—time and space comparisons are formative of our psychology, including our stereoscopic eyesight. Tellingly Greek *idein* is the ancient word for both to see and to understand and today in most modern languages we use the metaphor “to see” to

### III. Law as Science: Blackstone

Questions as to the nature of law and its relationship to science are not new ones. In the nineteenth century, William Blackstone took it upon himself to summarize all of English law in commentaries, which then became the basic texts of English common law in the United States and beyond. But in addition, Blackstone provides an excellent example of a lawyer who both reflects upon the scientific nature of the law and can place those reflections in the context of the history of ideas at his time. Blackstone “meant to give evidence that the lawyer’s work, whether or not the lawyer is aware of it, is in the main stream of the history of thought. . . . For all . . . readers this book attempts to indicate how the ostensibly impartial processes of reason are employed by the student of society to support whatever social values he accepts. . . .”<sup>22</sup> Like the observer of commonplaces in rhetoric, the lawyer’s work is to treat reason as one of the tools of persuasion. Blackstone’s work “employed the assumptions prevalent in its day about science, religion, philosophy, history, art, and reason, to give the legal system and the values embodied in it an appearance of rationality and acceptability. Because the principal task for the lawyer in all periods is to find a rationale for institutions . . .”<sup>23</sup> Blackstone himself, while espousing rational science, recognized that being steeped in law means exercising prescription and not just description. He wrote “I hope the relationships about things other than law, and my description of the use of these ideas in the process of rationalization, will be suggestive rather than simply expository.”<sup>24</sup>

When one examines Blackstone’s attempt to reduce to the legal institutions of his day to rational order, one should consider a point made by Daniel Boorstin in his extended essay on Blackstone’s commentaries. Boorstin writes that “Blackstone’s statements were influenced not by the desire to discover what he did not know, but by the desire to prove what he already believed”<sup>25</sup> and to be equally “struck by the dissonance between the impartial pretensions of reason and the imperative demands of belief, between the social necessity of going through the accepted methods of logical demonstration, and the equal urgency of using those methods to the end of demonstrating the desirability of certain preconceived social values.”<sup>26</sup> This observation by Boorstin concerning Blackstone goes a long way to explaining how the practicing lawyer becomes accustomed to rationalizing in practice and then by extension to private life, earns a low social reputation because of it. The desire of an individual or an entire discipline to be rational is a product of the times, but results in legal rationalization, not rationality. Not surprisingly, when Blackstone came to rationalize English law in the years after 1753 in his Commentaries, the linguistic commonplaces of his day “required that he should somehow present the study of law as a science.”<sup>27</sup>

An important aspect of the law took root with Blackstone. While, as Boorstin points out, Blackstone’s role for the law was not open-ended scientific inquiry, he did want the law to appear to behave that way and found little room in the law for things not rational, thus leaving rhetoric’s role for probability, or assignations of moral intent out of the picture. In his quest for

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say “to understand.” We see as we do only because our two eyes can compare.

<sup>22</sup> DANIEL BOORSTIN, *THE MYSTERIOUS SCIENCE OF THE LAW: AN ESSAY ON BLACKSTONE’S COMMENTARIES ON THE LAWS OF ENGLAND* xvii (Univ. of Chicago Press 1941).

<sup>23</sup> *Id.* at xvii.

<sup>24</sup> *Id.* at xviii (quoting William Blackstone from the Introduction to Blackstone’s COMMENTARIES).

<sup>25</sup> *Id.* at 6.

<sup>26</sup> *Id.*

<sup>27</sup> *Id.* at 19.

the rational principles of the law, Blackstone was satisfying the eighteenth-century desire to methodize and make a “science” of the data of experience.<sup>28</sup>

The lawyer in an age of science would surely feel the desire to use a “scientific” technique. Yet he might have good cause to fear lest the method of reason be used to call in doubt the fundamental values of society. The method which Blackstone adopted showed the discord between the domains of science and the demands of religion between the call for logical demonstration, and the urgency of faithful and conservative affirmation.<sup>29</sup>

#### IV. Connecting Rhetoric to Law to Science

Looking through the interpretive lens of the historical relationship between law and rhetoric, we can learn something of the nature of the relationship of law to science. But one must ask further—aside from the fashionable desire of the times to characterize everything as science, in what ways, if any, is law itself a science and of course if law is a science, what are the features of that science? Melvin Rader begins his classic work, *The Enduring Questions: Main Problems of Philosophy*, by comparing science with philosophy.<sup>30</sup> He concludes that in comparing the two, science knows the world through statements of accuracy, while philosophy knows the world through a social wisdom based upon not making foolish choices. Both look for some form of truth he says and both construct meanings, so those are not distinguishing factors. Instead, writes Rader:

If philosophy is the pursuit of wisdom as contrasted with foolishness, it is marked off from ordinary sciences. The subject matter of science is facts, and science attempts to discover verifiable laws—regularities—among these facts. These laws give a description of the facts. It is obvious that the physicist does not talk about wicked atoms or beneficent motion, and even the sociologist, in his purely scientific role, tries to describe rather than to evaluate the behavior of social groups.<sup>31</sup>

By introducing philosophy in this way, Rader makes clear to the reader that there are different ways of knowing, each having its own goals in obtaining some form of wisdom. My main thesis is that law also has historically had its own ways of knowing that mixes rationality with probability with morality, although today it perhaps wishes to join the fold of social sciences, carried, when it can, by natural sciences, ultimately deferring to specialists of intricate descriptions. Either way, as its own way of knowing or as one of the social sciences, it would behoove those of us who study or practice law to have a more clear sense of what we believe the nature of our knowing to be.

If we simply observe events in the news, we could conclude that there are two ways of knowing that propel action in human behavior: belief and knowledge. The distinction between the two, for the west, remains based upon the Platonic distinction between fact and opinion as delivered through the process of Socrates’ dialectic examination of claims. When in law do we accept belief as sufficiently being a motivation for action and when do we look for demonstrable

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<sup>28</sup> *Id.* at 23.

<sup>29</sup> *Id.* at 196. This focus on the work of Blackstone, which was so highly influential on the establishment of the practice of law in the United States, should not be interpreted to mean that civil law was also without its champions of rationalization. For critiques of overrationalization in the civil law, see, JOACHIM, LAMPE, DAS SOGENANNTRE RECHTSGEFÜHL OR REINHOLD ZIPPELIUS, JURISTISCHE LEHRMETHODE, CH Beck.

<sup>30</sup> MELVIN MILLER RADER & JERRY H. GILL, THE ENDURING QUESTIONS: MAIN PROBLEMS OF PHILOSOPHY (3rd ed. 1991).

<sup>31</sup> *Id.*

establishment of fact through some accepted process? (This is emphatically not the adolescent distinction between “subjective” from “objective.”) As Boorstin pointed out, Blackstone wrote of the latter but in fact practiced the former.

“To say that legal institutions could be rationalized and reduced to discoverable first principles was simply another way of saying, in eighteenth-century terms, that rational man was not wasting his time in studying the law.”<sup>32</sup> So law as a social science need not equal social physics,<sup>33</sup> but its processes and methods should in some way allow a human to act wisely and not foolishly, as Rader insisted for philosophy.

Even as law becomes positivistic and scientific, its way of knowing retains an element that cannot be left to description of facts—what philosopher Melvin Rader calls the “evaluative” element. Here one might be reminded that “*kritikos*” in Greek, from which we get the word “critical” in English today, meant to judge or evaluate, without any predisposition towards being negative. To properly include an evaluative capacity in the study and practice of law, we must be conversant with moral philosophy.

For comparativists, one can see a difference between the civil and common law families in how a moral element could be included, even in private law. For example, in Germany, the first remedy for breach of contract is performance. Why? Because a promise to perform has a moral element to it that cannot be fulfilled through an exchange of money. In the common law, represented in this article by the US, the first remedy for breach of contract is just the money damages. Why? Because the money is an equivalency in a way that invites us to turn the moral part of law into a fungible and easily and efficiently remedied conflict. This sort of thinking could take us as far as something like the Chicago school of legal economics, most known through Richard Posner, which says that not only in contract, but in all dispute resolution, private and public obligations can be removed of their moral elements and mathematized by money equivalencies. That conclusion is well known, and contributes a building block to my conclusion, but is not alone the conclusion itself. To arrive at the entire conclusion, one needs a few more blocks. In addition to the question of whether law can, does or wishes to call itself a science, I am concerned with how law comports itself toward other more readily recognized sciences, such as the natural sciences. Before one can go to that question, however, one should consider an intermediate sense that concerns notions of mathematical fungibility, in which one act or omission can be equated to another based upon its essentially mathematical reducibility, which, again referring to categories from Greek philosophy, concerns the *ontos* of law.

Some have attempted to connect the issue of whether law is a science to its moral component through empiricism. Thomas Ulen of Chicago raises the question whether there will ever be a Nobel Prize in law to enframe his discussion of the current state of legal scholarship and the trend toward making legal scholarship more "scientific." First, Ulen discusses the meaning of "science" and the scientific method, and summarizes the various theories that have developed over time to verify, modify, or reject scientific paradigms. Next, he considers whether the study of law is a science. All sciences share core theoretical beliefs that allow for the international study and dissemination of scientific information, and that will produce similar results, regardless of where they are applied, according to Ulen. These theories are then examined and tested using empirical research. Although law has no such set of core theoretical beliefs, Ulen notes that at least in US legal education, there is a growing body of empirical research in the law. Ulen believes that interest in empiricism is growing in the legal academy, and that

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<sup>32</sup> BOORSTIN, *supra* note 22, at 20.

<sup>33</sup> In his definitive work on positivism, Auguste Comte uses the term “social physics” for what we today would call “social science,” thus clearly indicating the nature of the word “science” in the idea of “social science.” AUGUSTE COMTE, *THE POSITIVE PHILOSOPHY* 11 (Harriet Martineu trans., Batoche Books 2000) (1830-1842).



empirical research can be very beneficial to both legal academics and practitioners. Ulen posits that as the amount and breadth of legal empirical research increases, a core set of theoretical beliefs will emerge in the law, and that increased empiricism in the law is vital to the future of the law as a science. That supposition echoes the stated goal of the European comparative law project, as reported by Edouard Lambert from the great Paris Exposition in 1900, where the International Congress for Comparative Law introduced comparative law in the form in which we know it today. The spirit of that age was “progress.” The goal of the Congress, was a *droit commun de l’humanité*. Lambert went on to describe the noble goal that:

[C]omparative law must resolve the accidental and divisive differences in the laws of peoples at similar stages of cultural and economic development, and reduce the number of divergences in law, attributable not to the political, moral, or social qualities of the different nations, but to historical accident or to temporary or contingent circumstances.<sup>34</sup>

Like Lambert and the Congress of 1900, Ulen concludes that comparative law will inevitably lead to a harmonized world system.

## V. Moral Reasoning into Law

Civil law might well advocate that law be discussed as rational thinking, while the common law might characterize law as empirical social science, but in both systems, the social science of either set of practices is limited when it comes to making decisions that are just. For those decisions, an element of moral knowledge is necessary and that element comes to us from philosophy, not natural or social sciences. In his *Theory of Justice*, philosopher John Rawls conceives of the subject matter of moral theory as a mental object that is internal, intentional, individual, and ideal.”<sup>35</sup> According to John Mikhail, Rawls' early work writings contains a scientific theory of moral cognition that even surpasses the work of psychologists like Jean Piaget and Lawrence Kohlberg in its depth, coherence, and analytical rigor. Thus, concludes Mikhail, Rawls' early work, including *A Theory of Justice*, is normative ethics, not moral psychology as some critics claim. According to Rawls, the internal and individual mental object is to be distinguished from the external moral object.

Practically applied, a lawyer need not be himself or herself a trained philosopher to be expected to employ an evaluative, moral sense to his or her work. John Mikhail attempts to ground the empirical significance of his framework by showing how it allows for for what he calls “the mature individual's system of moral knowledge,” and thereby explains a number of moral intuitions that he calls “commonsense.” There is ultimately a connection between this commonsense and rhetoric’s commonplaces. The practicing lawyer in the US encounters philosophy in the rules of ethics known as the rules of “professional responsibility.”

Official Comment to Model Rule of Professional Responsibility 2.1 states:

Advice couched in narrow legal terms may be of little value to a client, especially where practical considerations, such as cost or effects on other people are predominant. Purely technical legal advice, therefore, can sometimes be inadequate. It is proper for a lawyer to refer to relevant moral and ethical considerations in giving advice. Although a lawyer is

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<sup>34</sup> ZWEIGERT & KÖTZ, *supra* note 12, at 3.

<sup>35</sup> JOHN MIKHAIL, *ELEMENTS OF MORAL COGNITION: RAWLS' LINGUISTIC ANALOGY AND THE COGNITIVE SCIENCE OF MORAL AND LEGAL JUDGMENT* 64 (Cambridge Univ. Press 2011).

not a moral advisor as such, moral and ethical considerations impinge upon most legal questions and may decisively influence how the law will be applied. A client may expressly or impliedly ask the lawyer for purely technical advice. When such a request is made by a client experienced in legal matters, the lawyer may accept it at face value. When such a request is made by a client inexperienced in legal matters, however, the lawyer's responsibility as advisor may include indicating that more may be involved than strictly legal considerations.

## VI. Moral grammar and language

Moral knowledge can be included in the lawyer's set of abilities because the lawyer is a contributor to the moral grammar of a culture. One arrives at the notion of a moral grammar much in the same way that one arrives at the notion of a linguistic grammar. According to John Mikhail:

The key reason for supposing that a language user has a complex and largely unconscious system of grammatical rules, concepts, and principles that generates and relates linguistic representations rests on the *argument for linguistic grammar*. This argument starts with the observation that competent users of a natural language can construct an infinitely large set of novel utterances that are immediately acceptable to other speakers of the language. At the same time, such competent language users can assess whether an unbounded set of novel utterances produced by others are well- or ill-formed. Language users, possessed of such infinite capacities, are nonetheless burdened with finite minds. Thus, the argument runs, each language user's mind must contain a recipe or program of some sort -- a grammar -- that can build, out of a finite list of words and phrase patterns, the unlimited set of expressions she is able to produce, understand, and interpret.<sup>36</sup>

We can see from this description, establishing and maintaining a moral grammar is not limited to intentional acts, but instead is accomplished through the daily work of the lawyer, which due to its nature, contributes to the moral grammar. But in addition to the fact that the everyday work of the lawyer unintentionally contributes to and detracts from the moral grammar of the culture, Mikhail develops Rawls' *A Theory of Justice*, (1977/1999) to connect to the work of the lawyer. Building upon Rawls, he notes that an individual possessed of an adequate moral sense is able to judge a limitless set of novel acts permissible or impermissible. On the assumption that such moral judges are not possessed of infinite minds, we should presume a grammar for moral assessment.<sup>37</sup>

One might object and insist that the operation of law, including its relation to a culture's morality, *is* a social science, to which I would reply that such an insistence reveals thinking that has been scientized. My evidence is connected to language, as Rawls would connect it to moral knowledge and to the administration of knowledge as we see it in universities. Let me provide another example from language. Recently back in Cologne, one of my assistants attended a university conference that was to instruct us on how to obtain funding in the social sciences. At the end of the conference, when the presenters had concluded without having mentioned the faculty of law whatsoever, my assistant asked "what about law?" to which the university administrator casually, clearly and confidently replied "oh, law is not included as a social science." To statements as these, I would in turn say, well, it is not a natural science, so if it is also not a social science, what is meant by "legal science"?

According to philosopher Barbara Tuchska, the Polish term "*nauka*" functions like the German *Wissenschaft*. In the case of law we have: the field (or a domain) of law sciences

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<sup>36</sup> *Id.* at 46.

<sup>37</sup> *Id.* at 41.

(*dziedzina nauk prawnych*) which is composed of (1) the science of administration (*nauka o administracji*), (2) law (*prawo*), and (3) canonical law (*prawo kanoniczne*). The whole field of law sciences belongs to the broader domain of the social sciences. The official usage is consistent with everyday usage. So, yes native speakers do speak of law as science, and the term “*nauka*” can mean anything from the natural sciences to technical, medical etc. Even in the case of humanities one can say humanistic sciences (*nauki humanistyczne*).<sup>38</sup> In his *Metaphilosophy of Law*, Tomasz Gizbert-Studnicki<sup>39</sup> has analyzed this problem. It looks like there are only articles analyzing the different meaning of the term "legal language". Popular sources like Wikipedia indicates that law is among the notion of "nauki społeczne" (social sciences). And as I understand it, one does speak of law as "*nauka*" in Polish, although the commonly used term is "*nauki prawne*" (legal sciences). It sounds more natural and maybe avoids qualifying law into particular category. What we may conclude from language and the academies of common law, German law and Polish law tells us that law is a separate way of knowing somehow, but how? If we reduce the features of science to prediction, what are we meaning to predict? What can legislation predict? Hence the civil law favorite topic of finding lacunae in legislation. In common law, we want to predict the outcome of a trial. As Holmes famously tells us, “a legal duty so called is nothing but a prediction that if a man does or omits certain things he will be made to suffer in this or that way by judgment of the court; and so of a legal right.”<sup>40</sup> One need not be an American Realist to agree that Holmes either predicts or describes a trend in positive law that has only become stronger, not weaker, since his work over one hundred years ago.

My comparison is to compare the intellectual place of law across cultures and across disciplines. A review of just a few will serve the purpose for today to question the orientation of comparative law. Judges who prosecute in India and are not tools of the dictator. Reduction in the role of courts in Ethiopia

Historically seen, law has always served the needs of the dominant paradigm. Where and when humans are agrarian, law is local. Where and when humans are industrial, law is the state. And where and when humans see themselves only through an economic lens, including an international economic lens, law is the facilitator of international trade. When there is a revolution, new norms and procedures in a new legal order are markers in everyday life that things have changed. A contradiction occurs when we say that the law is a science and invoke the attributes of being one, neutral system that derives its values from the object of study, but apply that sense to the plurality of cultures that have a sense of law, even that of a rule of law state. When one-world law systems attempt to exist—the World Trade Organization, The European Private Law Harmonization Project, or The Transatlantic Trade and Investment Partnership, one must ask upon what set of cultural attributes to law is that one system constructed. One does seek for the one unity of a legal system when law functions as a liberal art rather than as a science.

## VII. Science in the Law

It might appear that one should invite more thinking about law as science so as to reduce the function of bias and politics in the law. But science studies have demonstrated the degree to

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<sup>38</sup> Email from Barbara Tuchnska (May 1, 2017) (on file with author).

<sup>39</sup> METAPHILOSOPHY OF LAW (Pawel Banas et. al. eds., 2016).

<sup>40</sup> Oliver Wendell Holmes, Jr., *The Path of the Law*, 10 HARVARD L. REV. 457 (1897).

which science too is ideologically constructed.<sup>41</sup> So rather than give more of law to an ideological construction that does not permit its biases to be acknowledged, I would rather reserve that part of law—the added bit from philosophy, that openly acknowledges we are now making moral evaluations on human conduct and constituting a society. In a civil society, that can be discussed. It is difficult, but it can be discussed and without the need for god or gods, we can come to civil society conclusions. But if you give the decision making process over to science, which is an epistemological equivalent of plugging the decision-making process into a machine that we cannot open, then we cannot make civil society decisions, but allow the ideologically-packed science way of knowing to dictate our decisions.

In a famous case that considered whether religion was science in Pennsylvania in 2005, Judge John E. Jones III held that science is not religion because it is not belief.<sup>42</sup> Further examples would include that in the twentieth century development of executive agency law worldwide, one finds natural science specialists making administrative regulations in areas of food, health, energy and environment. In common law countries like the US, lawyers must have some qualification in the natural sciences to participate in the obtaining of patents, while in civil law countries like Germany, the reverse relationship exists to produce the same result: chemists, physicists and engineers may register patents having first merely attended some legal training.

Most of the discussion of law is conducted by legal practitioners. Even in legal education and training, worldwide, the discussion of law is a discussion by its practitioners of its practices. Even in cultures where the professor or legal scholar is respected for his or her science removed from practice, the science gains further respectability when it can be related to practice. This is not so in all areas of thought—look at philosophy and theoretical physics, just to name one from the social and the other from the natural studies.

And so when law talk does get to talk about its own scientific nature, it is unsurprising that the talk is often a talk about the science of “how” in the law—its epistemology. For today’s discussion, that step will do to answer my research questions: How does law know and is it different from how other disciplines know? Specifically, I am testing the hypothesis that if law does have its own way of knowing, why does it run behind the skirts of mama—the natural sciences-- any time it’s knowing is questioned? My method for addressing this question is to compare law’s way of knowing with those of the natural sciences. To do so, I must first take a close look at how comparison itself is a way of knowing.

Too often, legal systems are characterized by their legislation. Other characters of a system include the judicial branch of the state, including courts of specific scientific expertise that range from the science courts experiment in the US in the 1970s, staffed by qualified scientists, to environmental courts and green tribunals in Australia, New Zealand, India and most recently, China. These environmental judges sometimes sit in courts of general jurisdiction, sometimes on a special "green bench" of the courts of general jurisdiction, and sometimes in separate green tribunals. The judicial members may be only scientifically trained, only legally trained or include at least one each from science and law, as is the case of India's National Green Tribunal. The performance records and secondary literature surrounding them tell us how far these green tribunals have integrated science as a legal decision-maker into the legal culture of those states, which, when compared, helps us to understand the demarcations that continue between legal knowledge production and scientific knowledge production. How does legal thinking about justice differ from scientific thinking about justice?

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<sup>41</sup> See, DAVID BLOOR, KNOWLEDGE AND SOCIAL IMAGERY (Routledge 1976); BRUNO LATOUR & STEVE WOOLGAR, LABORATORY LIFE: THE SOCIAL CONSTRUCTION OF SCIENTIFIC FACTS (Princeton Univ. Press 2d ed. 1986).

<sup>42</sup> *Kitzmiller v. Dover Area School District*, 400 F. Supp. 2d 707 (M.D. Pa. 2005).

In addition to considering whether law is a science and the related consideration of whether it is culturally beneficial to consider law to be a science, a third context in which to consider the interplay of law and science is the use of natural sciences in the law. In the most general sense, since we stopped using duels and trials by ordeal, legal systems of the world have been evolving more and more to accept natural scientific standards of evidence and proof. More specifically, one finds conceptual shifts, such as the US standard as to what constitutes scientific evidence, from the 1923 *Frye* standard to the 1993 US *Daubert v. Merrell Dow* case. This story begins with the 1923 case of *State v. Frye*, in which lawyers were faced with a question of what legal knowing is. The First World War had just ended, and as is so often the case in the aftermath of war, technology shifted to the forefront both because ideological thinking had been bruised and because war research produces technological invention. Rather than use the ordeal or the dual, we wanted to use a new and simple piece of technology called the “lie detector” that measured a person’s blood pressure and heart rate while answering questions. The question for the court was whether the results of such a test should be accepted as scientific evidence of truth and lying, which in turn raised the more abstract question of what constitutes science. In 1928, that answer was that science is whatever scientists generally agree science is. The method then to answer the question was to ask scientists and if they generally agreed, lawyers would accept it as science. It is important to reflect on that method of knowledge. It is a deference to authority, not a direct investigation, or what Aristotle would have called an appeal to ethos, not logos. In 1975 the US Federal Rule

of Evidence 702 permitted that “If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.”

Under this standard, lawyers were reminded that it is the judge who decides the case, not the scientist, and thus we are not simply to defer to the authority of a scientist and let him or her rule on the case. This sentiment was reinforced by the *Daubert* decision of 1993. In an atmosphere of skepticism, in which scientific experts would disagree with each other in aid parties on different sides of a trial, critics called for an end to battles of experts claiming to speak for the authority of science. Instead, as Whitehead reminded us from Plato, each judge was to determine for himself or herself whether the proof on offer was qualified as scientific evidence. According to the Federal court’s reasoning in *Daubert*, a judge is to judge the science offered by the parties according to the criteria of “fit,” testability and falsification, reliability, and validity.<sup>43</sup> Justice Blackmun, writing for the majority of the United States Supreme Court stated: “Faced with a proffer of expert scientific testimony, the trial judge must determine whether the expert is proposing to testify to 1. Scientific knowledge that 2. Will assist the trier of fact to understand or determine a fact in issue. Many Factors will bear on the inquiry and we do not presume to set out a definitive checklist or test. But some general observations are appropriate.” Twenty-two amicus briefs were filed in the case, most arguing different theories of what the criteria should be for accepting something as “science.” Amicus briefs from scientist included a group of 18 among whom 6 Nobel laureates, with expertise in chemistry, physics, meteorology, epidemiology, environmental medicine and teratology (study of malformations.) American Association for the advancement of science, and national academy of science filed another, a third group included Steven Jay Gould, paleontologist. The majority agreed: “scientific knowledge (from FRE 702) cannot be given intelligent meaning without venturing beyond the standard law library into the domains of science and philosophy.”<sup>44</sup> The

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<sup>43</sup> KENNETH R. FOSTER & PETER W. HUBER, *JUDGING SCIENCE: SCIENTIFIC KNOWLEDGE IN THE FEDERAL COURTS* (1997); *citing*, *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 600 (1993).

<sup>44</sup> FOSTER & HUBER, *supra* note 43, at 2.

opinion of the United States Supreme Court took this array of differing concepts of science seriously, citing the amicus briefs thirty-seven times. The majority relied on two of the century's most well-known philosophers of science—Carl Hempel and Karl Popper, as well as physicist John Ziman.

Justice Rehnquist dissent from the majority opinion and was joined by Justice Stevens. Rehnquist was not in disagreement with what might be the correct formulation of science, but rather in who needs to make that determination. He noted the following in his dissent: “I do not doubt that Rule 702 confides to the judge some gatekeeping responsibility in deciding questions of the admissibility of proffered expert testimony. But I do not think it imposes on them either the obligation of the authority to become amateur scientists in order to perform that role.”

As one considers comparative law, the Daubert standard has explicitly adopted by Canada and further used as the basis of a new scientific evidence standard in the law of the UK and Wales. Furthermore, Daubert is treated as a “standard” by the ASTM, an international organization founded in 1898 that originally provided materials standards and now also provides documents standards worldwide.

## Conclusion

Facts are fragile things. Invented by humans as a way of negotiating their relationship with the world around them, the fact may be limited in some ways by the material world, but the concept of a fact is a human creation. Science has provided methods by which humans can agree on facts, while working to eliminate intentional and unintentional social, political, religious and other biases from their ideas by testing them against material limits. Since the enlightenment, humans have largely agreed that fact exists and that science can provide testable and replicable facts. One of the core tenets of the construction of the scientific fact comes from Aristotle's basic logical principle of non-contradiction: “It is impossible to hold (suppose) the same thing to be and not to be (Metaph IV 3 1005b24 cf.1005b29–30).”

But today, we have political will insisting that when it suits a politician's needs, there can indeed be “alternative facts,” a notion uttered, lamentably, by a lawyer, Trump's Kellyanne Conway. But this is not a new political position and we should not be so shocked. Already in the 1990s, the advisor to the President, Karl Rove, said that journalists were in what Rove called “‘the reality-based community,’ which he defined as people who ‘believe that solutions emerge from your judicious study of discernible reality.’ To this statement, the journalist Suskind nodded and said he murmured something about enlightenment principles and empiricism. But Bush's senior advisor Rove cut Suskind off. “That's not the way the world really works anymore.” He continued “We're an empire now, and when we act, we create our own reality. And while you're studying that reality—judiciously, as you will—we'll act again, creating other new realities, which you can study too, and that's how things will sort out. We're history's actors ... and you, all of you, will be left to just study what we do.”<sup>45</sup>

The ways in which we have organized our thinking and belief structures in the law have followed the ways in which we have organized thinking and belief in knowledge in general. If we trace a history of science to Attic Greek thinking, we find that Plato distinguished the use of rational thought as a path to knowledge from rhetoric for determining choice among

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<sup>45</sup> Ron Suskind, *Faith, Certainty and the Presidency of George W. Bush*, N. Y. TIMES, Oct. 10, 2004; see, Mark Danner, *Words in a Time of War: On Rhetoric, Truth and Power*, in ANDRÁS SZÁNTÓ, WHAT ORWELL DIDN'T KNOW: PROPAGANDA AND THE NEW FACE OF AMERICAN POLITICS 17 (Philadelphia, PA, Public Affairs Reports 2007).

possibilities or probabilities. Aristotle developed this distinction further. Western law was slow in adopting and accepting rational thought as a method of determination until the Enlightenment. Before then, unknown forces would choose accuracy or truth for us if we just created an event of choice, such as a trial by fire or a duel. After the Enlightenment, rationality slowly made inroads in legal methods and practices, but as law caught up to rationality, science changed too. Though acknowledged, Whitehead's point that Greek rationality allowed each of us to be a scientist has been left from rational practices in culture. Instead we allow the authority of someone else, albeit under the title of "scientist," to persuade us of how we know and what we know, rather than employing rationality to know things ourselves and developing further systems of determination in areas of probability or possibility. There is a bitter ironic twist to my admonition to make law a science even if not a social science of empiricism in the US sense. If we get to that point of being able to claim the norms of law are scientific norms and the practices of scientists are scientific practices, we might fall into Oscar Wilde's trap of not being careful enough when getting what we have wished for. Science has lost its ability to claim neutrality, objectivity or even to produce one set of accepted facts. Instead power politics by windbags on all continents have dared to say night is day, round is flat, and if you counter those assertions with scientific fact, they feel free to insist upon alternative facts. (A phrase invented by a lawyer, no less, and a woman—so power politics is not just for men.)

So it is not so easy to say simply pro-science or anti-science in the law. Science has a support role, one might even say a complementary role, but the law itself is not a science and the complementary role that science plays should not be encouraged to overtake the moral and ethic considerations of conflict resolution under the norms of fairness or justice for individuals and the society.

Economics, for example, fails to qualify as a science under any definition. But like economics, law wants to be called a science. Why? I think because there is social value in the label---one gets respect, perhaps gets funding, gets societies, journals, university recognition and so forth. In a much more most general sense, a science distinguishes itself by saying it does not act arbitrarily and is guided by some force, be it supernatural, natural or human agreement. Here we see then a distinction between a science of predictability and replicability (like physics), and one of principled behavior (like law). I think this latter one is all that law can claim--it follows principles. But these principles can be based upon plain power or will, and not only upon morality or social agreement. I think this is why in German or Polish we want to have a separate *Rechtswissenschaften* (nauki prawne) but do not include it under *Sozialwissenschaften* (Nauki społeczne), because the social sciences, like the natural sciences appeal to the first sense of "science"--repetition, replication, prediction, reliability, validity and so forth. Law cannot make that claim.

In short, I would suggest we as lawyers know that what we do is not like natural or social sciences, but there is cultural value in calling our work "science," so we like the confusion between social science and legal science. Were someone to be serious about this, they would insist that law stop using the same word ("nauka," "science" or "wissenschaft"), because it only gets its cultural value from what the physicists and sociologists do. If comparative law is to serve needs of humanity beyond facilitating commerce, it will need to first reconstruct the comparativist in his or her own orientation of the exercise, second include observations of human behavior that are not filtered through a western, globalizing lens, and third will require a broader conceptualization of what is included in the discipline called "law." Is natural science a way of knowing? Yes, of course. Is natural science the only way of knowing? No, it is not, but we move further and further in that direction, including in law. Is natural science overtaking all of law? Not yet, but it could. Therefore, law should explicitly couple norms with observation, process and the use of facts. The latter part is comprised partially of natural

science, but the former part is not. For that, we should be educated, trained and capable of ethics and moral philosophy. Otherwise, we are giving law over to natural science.