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Jurisprudence and Structural Realism

Kevin Lee¹

Some Anglophone legal theorists look to analytic philosophy for core presuppositions. For example, the epistemological theories of Ludwig Wittgenstein and Willard Quine shape the theories of Dennis Patterson and Brian Leiter, respectively. These epistemologies are anti-foundational since they reject the kind of certain grounding that is exemplified in Cartesian philosophy. And, they are coherentist in that they seek to legitimate truth-claims by reference to entire linguistic systems. While these theories are insightful, the current context of information and communication technologies (ICT) has created new informational concepts and issues. As a result, the analytic epistemologies are increasingly challenged by alternative perspectives. One such alternative is Structural Realism (SR), which is influential among the natural sciences, and especially physics. “Informational Structural Realism,” (ISR) is a variant of SR that was introduced by Luciano Floridi. Unlike the coherentist theories, ISR promotes examination of the connections among types of information and informational structures. It is an important shift for legal theory today, since the challenges that the ICT presents have to do with pattern recognition across vast domains of diverse data. An informational jurisprudence is now required to understand the issues emerging from the ICT.

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1. Introduction

Epistemology is changing in the twenty-first century as the consequences of information and communication technology (ICT) are being applied to philosophy. The dominant theories in jurisprudence have viewed information as semantic and legitimation within a linguistic system or hermeneutic circle. Seeds of change were planted, however, in the early twentieth century by Claude Shannon and Alan Turing, who respectively developed mathematical theories of information and communications. It is their equations, which make ICT possible, that have profound implications for philosophical inquiry. Computational power has exploded in the last few decades. It now allows for subtle relational structures to be discerned that are beyond human comprehension and, as a result, philosophers are faced with new concepts and issues that cast doubt on old beliefs. The philosophy of information has emerged to cope with the philosophical issues that have developed in this context. Philosophers of information investigate the nature of informational types and the relations between them.² Some of their work challenges the epistemological presuppositions that have become the dogma of Anglophone jurisprudence.

Nonetheless, with the faithful commitment of medieval scholastics, most legal theorists dogmatically view law as exclusively semantic information, even while acknowledging that law shapes and is shaped by the vast pools of data that are generated and analyzed every day around the world.³ Of course, law is semantic information, but this is only a trivial

²For a discussion of the conceptual shift that occurred, see Floridi, *The 4th Revolution: How the Infosphere is Reshaping Human Reality* (Oxford University Press, 2014). For an introduction to the Philosophy of Information, see Floridi, *Information: A Very Short Introduction* (Oxford University Press, 2010). For a more developed survey, see Floridi, *The Philosophy of Information* (Oxford University Press, 2011).

³Philosophical understanding of the informational nature of law is a subfield of the Philosophy of Information. Luciano Floridi describes the field this way: “Information is the Cinderella story in the history of philosophy. Think of it for

observation. An alternative epistemological theory, structural realism (which is influential among the natural sciences), provides a more capacious and promising alternative to the mainstream theories. Extending structural realism into jurisprudence refocuses legal philosophy away from the boundaries between concepts, towards the analysis of the informational types, structures, and systems that constitute and are constituted by the law.

To illustrate this change in the focus for philosophy, consider the following two passages. The first is from Andrei Marmor's influential book, *Philosophy of Law*:⁴

The content of law is tantamount to the content that is communicated by various legal authorities. Authorities communicate, of course, in a natural language. Therefore, an understanding of how linguistic communications works and, in particular, how much is actually determined by various semantic and pragmatic aspects of language is central to understanding what law is.⁵

Marmor argues that law is semantic information that communicates the intentions of the authorized law maker. While this is a reasonable observation, it does not acknowledge a role for the digital form in which law also exists.

Consider next how Marmor's conventional understanding of law is transformed by the second passage, which is taken from Fred I. Dretske's

a moment. Understanding information is a necessary input for any philosophy of knowledge, no matter whether ordinary (epistemology) or scientific (philosophy of science). There is no ethic without choices, responsibilities, and moral evaluations, yet all these need a lot of relevant and reliable information and quite a good management of it." Floridi, 'Introduction' in Floridi, *The Routledge Handbook of Philosophy of Information* (New York: Routledge, 2016), 1. The same is true for law, of course. No legal decision is made without information that includes the semantic meaning of the law and an increasing variety of non-semantic informational forms.

⁴Marmor, *Philosophy of Law* (Princeton University Press, 2011).

⁵Ibid, 136.

ambitious book, *Knowledge and the Flow of Information*.⁶ Dretske attempts to develop a theory of knowledge based on Shannon's mathematical theory of information.⁷ A foundation for Shannon's theory is to distinguish information from meaning. Dretske explains the importance of this distinction:

Once this distinction is clearly understood, one is free to think of information (though not meaning) as an objective commodity, something whose generation, transmission, and reception do not require or in any way presuppose. One is therefore given a framework for understanding how meaning can evolve, how genuine cognitive systems—those with the resources for interpreting signals, holding beliefs, and acquiring knowledge—can develop out of lower-order, purely physical, information-processing mechanisms. The higher-level accomplishment associated with intelligent life can be seen as manifestations of progressively more efficient ways of handling and coding information. Meaning, and the constellation of mental attitudes that exhibit it, are manufactured product. The raw material is information.⁸

From Dretske's perspective, much more attention should be paid to the processes by which digital information becomes semantic meaning. He intends to suggest that Shannon's theory is thus important not only for enabling ICT, but also for changing the concept of information. Shannon's insight is that information can be separate from meaning. When it is viewed in that way, it can be seen to be an abundant feature in nature.

Before Shannon, information was a purely a semantic phenomenon, as law is for Marmor. After Shannon, the concept of information refers to many different forms: semantic, binary, biological, and others. No partic-

⁶Dretske, *Knowledge and the Flow of Information* (Center for the Study of Language and Information, 1999).

⁷See Shannon, 'The Mathematical Theory of Communication' (1948) 27 *Bell System Technical J.* 379, reprinted in Shannon and Weaver, *The Mathematical Theory of Communication* (The University of Illinois Press, 1963), 29.

⁸*Ibid.*, vii.

ular type is dominant. Information refers to a distributed network of concepts.⁹ Structural realism rejects what united the views of Quine and Wittgenstein (and perhaps Baudrillard, Derrida, Foucault, Lyotard, McLuhan and Rorty),¹⁰ who saw information as “a self-referential circle of hermeneutic communication.”¹¹ Structural realism of the sort defended here rejects this epistemological analysis. It views the multitude of informational types as being about something existing external to a hermeneutic circle. It highlights the relations among the many types of information that exist, and how the centrality of semantic information is presupposed and the effective impact of information on human beings is ignored. The semantic meaning of law is about the drama human lives, but the formation and operation of law are about informational types that are not limited to semantic hermeneutics. Structural realism (particularly the informationally-focused form described herein), escapes the dogmatic reduction of law to semantics, and allows for a broader role for legal philosophy in understanding the interactions and structures of a multitude of informational types.

A jurisprudence of information examines the informational processes of law. Some of these processes are included as part of what Marmor calls the “pragmatics” of language, but as Dretske’s work suggests, a close analysis of the processes and dynamics of information flow is insightful for understanding the informational structures (*relata*). While Dretske focuses on binary information, his work suggests that law might be influenced (directly and indirectly) by multiple informational forms and diverse informational content. An information jurisprudence could help to clarify the types of information relations, structures, systems and dynamics that influence law and legal institutions. It is a new way to understand law in a contemporary age where Big Data and Artificial Intelligence bring to light concealed patterns of relation, and automated systems learn through abstracting inferences from increasingly large and diverse data sets.

To make this point in another way, consider Hart’s “folk” understanding of law, which is derived by intuiting the commonplace usage of the

⁹Floridi, ‘Introduction’, 2.

¹⁰Ibid, 2–3.

¹¹Ibid., 3.

term by a generally educated Englishman of the mid-twentieth century.¹² For this imagined person, law's information is simply semantic information as it is for Marmor. Today, however, the word "information" is so closely associated with ICT that one is first likely to associate "legal information" with something contained in the digital infrastructure.¹³ Legal information is sought out (even by laypersons) through search engines that employ vast telecommunications networks and utilize the most advanced artificial intelligence.¹⁴ Furthermore, a generally educated twenty-first century person would be aware that the information is analyzed and applied by algorithms that utilize advanced mathematics.¹⁵ Today, legal

¹²Hart argues that, "Any educated man might be expected to be able to identify these salient features [of law] in some such skeleton way as follows: They comprise (i) rules forbidding or enjoying certain types of behavior under penalty; (ii) rules requiring people to compensate those whom they injure in certain ways; (iii) rules specifying what must be done to make wills, contracts or other arrangements which confer rights and create obligations; (iv) courts determine what the rules are and when they have been broken, and to fix the punishment or compensation to be paid; (v) a legislature to make new rules and abolish old ones." Hart, *The Concept of Law* (Oxford University Press, 1994), 3.

¹³See, e.g., Kuhlthau and Tama, 'Information Search Process of Lawyers: A Call for "Just for Me" Information Services' (2001) 57 *J. Documentation* 25, 32, 34, 36–37. Many resources are listed in 'Information Behavior' (*Legal Information Systems & Legal Informatics Resources*) <<http://www.personal.psu.edu/rcr5122/Dissertations.html>> Jan. 23, 2017.

¹⁴Among the most sophisticated use-cases at the time of this writing is offered by the artificial intelligence company Ross Intelligence, Inc., which uses advanced natural language programming. *Ross Intelligence* <<http://www.rossintelligence.com>> Jan. 23, 2017.

¹⁵The empirical analysis of law is a well-established field. For background see, Eisenberg, 'The Origins, Nature, and Promise of Empirical Legal Studies and a Response to Concerns' (2011) 2011 *U. Illinois L. Rev.* 1713-38; see, e.g., for the systems theories approaches, Katz and Bommarito, 'Measuring the Complexity of the Law: The United States Code' (2014) 22 *Artificial Intelligence and L.* 337; Bommarito and Katz, 'A Mathematical Approach to the Study of the United States Code' (2010) 389 *Physica A: Stat. Mechanics and its Applications*; Ruhl, 'Complexity Theory as a Paradigm for the Dynamical Law-and-Society System: A Wake-Up Call for Legal Reductionism and the Modern Administrative State' (1996) 45 *Duke L. J.* 849;

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information both is shaped by Big Data and is the data exhaust of the global society. Law is both a creator and a result of social interaction that occur digitally, and flows endlessly from glowing screens and automated voices.

Thus, awareness of law's binary existence has grown immensely for even Hart's 'commonly educated person'. In the 1990s, Lawrence Lessig introduced the saying "Law is code" to refer to the idea that law is algorithmic—that it is computational in the sense that it can describe a set of procedures. Nonetheless, even though this subtle shift in meaning is occurring, jurisprudence continues to understand law as exclusively logico-linguistic information.¹⁶ A new approach to jurisprudence is needed, one that can harmonize legal theory with the computational-mathematical

Miller, 'Evolutionary Statutory Interpretation: Mr. Justice Scalia Meets Darwin' (2000) 20 *Pace L. Rev.* 409; and Katz, 'Quantitative Legal Prediction—Or—How I Learned to Stop Worrying and Start Preparing for the Data-Driven Future of the Legal Services Industry' (2012) 62 *Emory L. J.* 909.

¹⁶Mireille Hildebrandt observes, "The deep structure of modern law has been built on the affordances of the printing press: on the linearity and sequential processing demands of written text, which evokes the need for interpretation, reflection and contestation. The study and practice of law have thus been focused on establishing the meaning of legal norms and their applicability to relevant human interactions, while establishing the meaning of human action in the light of the applicable legal norms. Data-driven agency builds on an entirely different grammar, its building blocks are information and behaviour, not meaning and action. We need to face the possibility that this will drain the life from the law, turning it into a handmaiden of governance (that fashionable term meaning anything to anybody), devouring the procedural kernel of the Rule of Law that enables people to stand up for their rights against big players, whether governmental or corporate or otherwise. In this article I will test the interface between law and data-driven agency by understanding law *in terms of* information, assuming that we cannot take for granted that law will interact with an artificially intelligent ICT infrastructure (ICTI) in the same way as it has interacted with written and printed text (our previous and current ICTI). By framing law as information, I hope to convince the reader that technological infrastructures matter, require our attention and must somehow be brought under the Rule of Law. This will not be business as usual, as it will require rethinking and redesigning the architecture of the Rule of Law." Hildebrandt, 'Law as Data in the Era of Data Driven Agency' (2016) 79 *The Mod. L. Rev.* 1, 2.

methods that are of growing importance. To achieve this change in theoretical perspective, the dogma of anti-foundationalism and coherentism—the hermeneutic circle—needs to be replaced by structural realism because the informational context of contemporary life presents new and challenging questions that go unmet by the older theories. Viewed in this light, a new foundation for jurisprudence is a normal development in the evolution of legal thought. The need today is for a theoretical framework that focuses less on static boundaries between concepts and more on the dynamics of structural relations among informational systems.

To support this claim, this essay explores the three most important theories for Anglophone legal philosophy in the twentieth century. Two have been influential in American jurisprudence, which has been concerned with developing a logico-linguistic understanding of truth: Willard Quine's coherentist holism¹⁷ (which influenced Brian Leiter's naturalized jurisprudence),¹⁸ and Ludwig Wittgenstein's logico-linguistic philosophy¹⁹ (which influenced Dennis Patterson's description of the modalities of legal legitimacy).²⁰ The third approach, structural realism,²¹ while presently unknown in jurisprudence, is quite influential in the philosophy of science (especially the philosophy of physics),²² and could be used as a foundation for a new information-theoretic understanding of law.

The information-theoretic standpoint of structural realism stands in contrast to Quine and Wittgenstein. They agreed on several fundamental topics (although they have had their disagreements as well).²³ Critically,

¹⁷Leiter relies primarily on two of Quine's essays: 'The Two Dogmas of Empiricism,' and 'Naturalizing Epistemology,' discussed *infra* at 12-21.

¹⁸Leiter, *Naturalizing Jurisprudence* (Oxford University Press, 1996).

¹⁹Wittgenstein, *Philosophical Investigations* (Massachusetts: Wiley-Blackwell, 2001).

²⁰Patterson, *Law and Truth* (Oxford University Press, 1996).

²¹Ladyman, 'Structural Realism', (*Stan. Encyclopedia of Philosophy* Jan. 10, 2014), <<https://plato.stanford.edu/entries/structural-realism/>> Feb. 25, 2017.

²²See, e.g., French and Ladyman, 'Remodeling Structural Realism: Quantum Physics and the Metaphysics of Structure' (2003) 136 *Synthese* 31-56.

²³See Hacker, 'Wittgenstein and Quine: Proximity at a Great Distance', in Arrington and Glock, *Wittgenstein and Quine* (New York: Routledge, 1996) 1-38.

they are both skeptics since they deny that there are foundations for logical reasoning;²⁴ and they are both coherentists in the sense that they believe that the only legitimation for a proposition is its coherence in a system of linguistic usage.²⁵ These themes of skepticism and coherentism are reflected in Leiter's and Patterson's work as well.²⁶

Structural realism holds that knowledge is possible of the structural relations between entities. It is minimally realist, since it allows only for knowledge of the existence of entities and the relations among them, but otherwise it maintains the Kantian distinction between phenomena and *noumena* (i.e., knowledge of the nature of things-in-themselves is not possible).²⁷ The origins of structural realism are associated with Moritz Schlick,²⁸ and it was developed by Grover Maxwell, John Warrell, and

²⁴Hacker notes: 'Both repudiate classical foundationalism in epistemology. Quine's stance is epitomized in the dictum that "There is not first philosophy." Holism displaces foundationalism, and 'naturalized epistemology', drawing upon psychology, neurophysiology and physics, replaces the investigation of the justification of knowledge claims with causal explanations. Wittgenstein's private language arguments undermine classical foundationalism. It is replaced (in *On Certainty*) not by naturalized epistemology but by socialized epistemology.' Ibid, 3.

²⁵Hacker explains, "One of the most famous Wittgensteinian dictum is 'Don't ask for the meaning, ask for the use.' Quine, in one of his relatively rare references to Wittgenstein, quotes it approvingly." Ibid. (Quine and Wittgenstein disagree on many points as too, including, critically, Quine rejects Wittgenstein's view of the normativity of language.) Hacker explains, From the point of view of a normative conception of meaning such as Wittgenstein defends, a behaviouristic conception like Quine's is simply no conception of meaning at all, not even an ersatz one. Indeed, it is not a conception of *language*, for a language stripped of normativity is no more language than chess stripped of its rules is a game. Ibid, 15–16.

²⁶See *infra* pp. 28–29.

²⁷For a brief introduction to Structural Realism, see Ladyman, *supra* note 20.

²⁸For background on Moritz Schlick, see Oberdan, 'Moritz Schlick' (*The Stanford Encyclopedia of Philosophy*, May 28, 2013), <<https://plato.stanford.edu/archives/win2016/entries/schlick/>> Jan. 21, 2017.

James Ladyman.²⁹ An informational variant, Informational Structural Realism (ISR) was developed by Luciano Floridi, which maintains that an analysis of informational structures must be central to the structural theory of knowledge.³⁰

This essay advocates, then, the application of ISR to jurisprudence. The result is termed the philosophy of legal information (PLI), which calls for careful attention to be given to the concepts of information and the levels of abstraction involved in legal theories and in the work of lawyers and judges. Since philosophers, lawyers and judges all apply multiple types of information and at different levels of abstraction, legal theorists need to closely analyze the relations among different informational types. A legal theory should seek to map in detail the informational structure of the analysis of law by focusing on the informational structures in law. Systems of information exist within law, they interact with and influence other information systems, such as commercial markets, politics, and even the environment. Jurisprudence today must focus on describing the interconnections between informational structures in order to describe and predict the evolution of law, the behavior of lawyers and judges, and the impact of law on the information environment. In short, jurisprudence must now be done from an information-theoretic perspective.

This essay is divided into four parts. Part 1 describes the historical background of epistemology in the twentieth century. Part 2 describes Quine's epistemology and Leiter's naturalized jurisprudence. Part 3 explicates Patterson's Wittgensteinian account of legal legitimacy. Part 4 introduces ISR, and shows how it can be developed into a jurisprudence that is more viable and useful than the skeptical epistemologies of Quine/Leiter and Wittgenstein/Patterson.

²⁹See Maxwell, 'Structural Realism and the Meaning of Theoretical Terms' in Winokur and Radner, *Analyses of Theories and Methods of Physics and Psychology* (University of Minnesota Press, 1970), 182–92; Maxwell, 'Theories, Perception and Structural Realism' in Colodny and Maxwell, *Nature & Function of Scientific Theories* (University of Pittsburgh Press, 1970) 3–34; Worrall, 'Structural Realism: The Best of Both Worlds?' (1989) 43 *Dialectica* 99–124.

³⁰Floridi, 'A Defense of Informational Structural Realism' (2008) 161 *Synthese* 219–53.

2. Historical Background

This section describes the historical background of epistemology as it developed from the late nineteenth to the mid-twentieth century. During this period, two influential styles of epistemology developed from the work of Otto Neurath. One interpretation is associated with the epistemological naturalism of Willard Quine; the other is related to the social theory of meaning developed by Ludwig Wittgenstein. Quine's epistemology is deployed by Leiter in his naturalized jurisprudence, and Wittgenstein's theory is developed by Patterson in his modal theory of legal meaning. A third theory, structural realism, was founded by Moritz Schlick, who rejected aspects of Neurath's epistemology. Part I describes the historical background of these epistemological theories.

1.1 Early Twentieth-Century debates

These theories evolved from epistemological skepticism that was already underway in the late nineteenth century. To understand it and the ISR response to it, it is useful to consider Floridi's description of skepticism. He reduces it to two questions:

(K) Is knowledge possible?

(KK) Is epistemology possible? (Is it possible to know the answer to (K))?³¹

The first question (K) cannot be resolved without answering the second question (KK) because (KK) identifies the criteria for determining if (K) has been resolved. The problem posed by skepticism is that, for an epistemological theory to be possible (KK), it must be able to identify criteria by which to distinguish between true and false. How can this be done this without already knowing which appearances are true and which are not? This is the question posed by the skeptics in the late nineteenth and early twentieth century.³²

³¹Floridi, 'The Renaissance of Epistemology' in Baldwin, *The Cambridge History of Philosophy 1870-1945* (Cambridge University Press, 2003), 531–41.

³²Ibid, 532.

The first question (K) is traditional for epistemology, but the second question (KK) was not identified until the eighteenth century. The philosopher, Jakob Friedrich Fries,³³ noting that Kant had overlooked the (KK) question, develop an analysis of it. Floridi explains:

Fries summarised the (KK) problem in terms of a trilemma: the premises of an epistemology can be dogmatically assumed, or justified by an endless chain of statements, or anchored to a psychological basis which is justificatory but not in need of a justification.³⁴

A recovery of Fries' work led to a broad interest in the (KK) problem during the 1920s-1930s,³⁵ which Floridi describes as a Fries-Renaissance.

An important movement that developed in the Fries-Renaissance was known as "psychologism," which quickly became influential in many fields of study.³⁶ It argued that all knowledge, including logic, is merely psychological in nature.³⁷ Early in his career, Edmund Husserl was an enthusiastic supporter of psychologism, but Gottlob Frege persuaded him that psychologism could not establish a criterion for truth.³⁸ Husserl and Frege then worked together to oppose it. Although they both sought to defend some justification for truth-claims against solipsism, their different approaches gave rise to the dispute that defined the division between Anglophone and Continental philosophy.³⁹ Frege's approach led eventually to influence Wittgenstein, and through him, the Logical Positivists, while Husserl's phenomenology influenced Martin Heidegger, Jacques Derrida, Emmanuel Levinas, and other Continental philosophers. Husserl's phenomenological method is concerned with justifying beliefs by

³³Ibid, 533.

³⁴Ibid.

³⁵Ibid.

³⁶A particularly influential movement within neo-Kantianism was "psychologism." For a study of it see Kusch, *Psychologism: A Case Study in the Sociology of Philosophical Knowledge* (New York: Routledge, 1995).

³⁷See Dummett, 'Preface' in Husserl, *Logical Investigation* (New York: Routledge, 1982), xiiv-xix.

³⁸Ibid, xiiv.

³⁹Dummett, *The Origins of Analytic Philosophy* (London: Bloomsbury, 1993).

analysis of transcendental intersubjectivity. It was this approach to justification that Frege believed did not escape solipsism.⁴⁰ Although they are all quite different from each other, there are some common themes, such as a common interest in logic, mathematics, natural science, critical perspectives on the Kantian analytic and synthetic distinction, reconsideration of the nature of philosophy, and logico-linguistic analysis. These themes developed in a variety of epistemological theories that were connected by their interests in these shared themes and in particular, their concern with skepticism.

In the Anglophone context, the work of Frege played an important role in developing a focus on conceptual analysis. Frege was concerned with the way truth is expressed in the grammar and syntax of ordinary language.⁴¹ His approach to philosophy would eventually become widely accepted as what Richard Rorty termed the “linguistic turn.”⁴² According to Dummett, the first statement of this approach is found in Frege's *Grundwork for Arithmetic*.⁴³ In paragraph 62 of that work, Frege investigated Kant's question, “How are numbers given to us?”⁴⁴ By this he means ‘how is it that numbers are given to conscious awareness?’ but immediately reformulates the question in terms of the meaning (*Bedeutung*) of sentences containing numbers. Michael Dummett argues that in making this quick change, Frege initiated the linguistic turn, since truth, for Frege, is justified by the analysis of linguistic usage.⁴⁵ He argued that the ‘sense’ of an intentional being is its reference to thoughts in the context of linguistic expression. Conversely, truth is language as it is represented in the mind. It results when ‘thoughts’ (what he also called “the third realm”) are expressed (given sense) in language (derived from context), thereby

⁴⁰The critical difference between them centered on their alternative construal of what is represented to the mind in intentionality. *Ibid*, 38–39.

⁴¹*Ibid*, 5.

⁴²Rorty, *The Linguistic Turn: Essays in Philosophical Method* (The University of Chicago Press, 1992).

⁴³Frege, *The Foundations of Arithmetic: A Logico-Mathematical Enquiry into the Concept of Number* (Illinois: Northwestern University Press, 1999).

⁴⁴*Ibid*, 73.

⁴⁵Dummett, 5–6.

representing the thoughts in subjective mental objects (intentional beings).⁴⁶ Truth is therefore intersubjective: it is a matter of using language in such a way as to meet the norms and expectations of ordinary grammar and syntax among persons sharing in a linguistic community.⁴⁷ Analytic philosophy employs conceptual analysis as its primary method because it presumes that it is only through the analysis of concepts, as they are actually used in ordinary language, that truth can be gained.⁴⁸

One of the philosophers who was influenced by these developments was Otto Neurath,⁴⁹ who is best known as one of the Logical Positivists. Neurath answered (KK) in the affirmative (he believed that epistemology is possible). He hoped to find a physicalist⁵⁰ epistemology that could unite the sciences, but he did not endorse foundationalism.⁵¹ He sought to confirm beliefs intersubjectively through physicalist language because he believed that statements can only be compared to other statements and not to some prelinguistic raw experience. Therefore, he stated that there can be no immediately self-validating foundational claim. For example for Neurath, the Cartesian *cogito ergo sum*, which asserts the self-evident truth of one's own existence, is a statement that can only be validated by reference to other statements that give meaning to the concepts, "thinking" (*cogito*), "being" (*sum*), and "concluding" (*ergo*). Thus, there is no vantage point outside of language from which the world can be reconstructed.⁵² Neurath famously summarized the situation:

⁴⁶See Glock, *What is Analytic Philosophy?* (Cambridge University Press, 2008), 29–30.

⁴⁷See Dummett, 15–21.

⁴⁸See Glock, 34–39.

⁴⁹For background on Neurath, see Cat, 'Otto Neurath' (*The Stan. Encyclopedia of Philosophy*, Dec. 3, 2014), <<https://plato.stanford.edu/archives/win2014/entries/neurath/>> Jan. 21, 2017; see also Hamilton, 'Otto Neurath' in Dancy and Sosa, *A Companion to Epistemology* (Massachusetts: Wiley-Blackwell, 1993), 303–04.

⁵⁰See, e.g., Neurath, 'Physicalism' in *Philosophical Papers 1913-1946* (Holland: D. Reidel Publishing Company, 1983), 52–57.

⁵¹See Hamilton, 303 ("Neurath was never attracted to the empiricist, foundationalist strand [of logical positivism].").

⁵²Floridi describes him in this passage: "For Neurath, the epistemic justification of science was not to be achieved by means of an appeal to external facts or alleged intuitions, but internally, through logical coherence (which did not

We are like sailors who must rebuild their ship on the open sea, never able to dismantle it in dry-dock and to reconstruct it there out of the best materials.⁵³

Thus, Neurath's epistemology is coherentist, in the sense that it assesses truth-claims on the basis of coherence within a system of propositions. And, it is holist in the sense that the system of propositions must be assessed all at once, using the tools that language has available for the task. There is no dry dock and the work must be done in rough seas while the deck is pitching. Two of the epistemological approaches that are of concern in this essay (Quine's and Wittgenstein's) are each a response to the (KK) question that evolved in the twentieth century from Neurath's work. These, and their applications to jurisprudence, are considered in the following section.

2. Quine's Epistemology Naturalized and Leiter's Naturalized Jurisprudence

Section 1 suggests that Neurath developed an influential skeptical response to the meta-question of epistemology (KK) (Is epistemology possible?). This section of the essay describes the epistemology of the American philosopher Willard Quine, whose work built on Neurath's and was embraced by Brian Leiter in his analysis of the American Legal Realists.

necessarily exclude some ordering relations), instrumental economy, pragmatic considerations of social and scientific ends, a rational use of conventions by the scientific community, and a constantly open and public debate. Following Duhem, Neurath argued that, given an apparently successful theory, rival explanations can be made to fit the same evidence that supports it, and that in replacing or revising a theory, hypotheses and observation statements come under scrutiny as whole networks, not individually. Practical expedience rather than absolute truth was determinant." Floridi, 'The Renaissance', 534.

⁵³Quoted in *Ibid*, 35 (citing *Philosophical Papers*, 92).

2.1 Epistemological Naturalism

Quine's epistemological naturalism is a development of Neurath's work that draws from some aspects of American Pragmatism. It represents a distinctly American response to the Fries revival. Quine developed his epistemology in two influential essays. The earlier of the two was 'Two Dogmas of Empiricism' published in 1951.⁵⁴ In the essay, Quine states his argument for epistemological holism that propositions have meaning only in the context of the systems from which they are generated.⁵⁵ In the essay, he rejects the traditional distinction between analytic and synthetic propositions by claiming that we are not able to clearly distinguish between types. One of the basic theses of analytic philosophy is the claim that all sentences are one of only three types: analytic, synthetic, or cognitively meaningless. These types of propositions define the division between philosophy and the sciences. Philosophers are mostly concerned with analytic propositions (those verified through logic), while the sciences are concerned with synthetic propositions (those verified through empirical methods). Quine argued, however, that this distinction cannot be maintained, since ordinary language is so imprecise that the type of proposition (analytic or synthetic) may be difficult to categorize.

Quine thus rejected logical positivism, which relied on clearly demarcating analytic and synthetic propositions. He criticized it for being unable to clearly draw the distinction on which the verification theory of truth depended. In summarizing his view, he wrote:

The lore of our fathers is a fabric of sentences. In our hands it develops and changes, through more or less arbitrary and deliberate revisions and additions of our own, more or less directly occasioned by the continuing stimulation of our

⁵⁴Quine, 'Two Dogmas of Empiricism' in Gibson, *Quintessence: Basic Reading from the Philosophy of W. V. Quine* (Massachusetts: Harvard University Press, 2004), 31–53.

⁵⁵He states, "The totality of our so-called knowledge or beliefs, from the most causal matters of geography and history to the profoundest laws of atomic physics or even pure mathematics and logic, is a man-made fabric which impinges on experience only along the edges. Or, to change the figure, total science is like a field of force whose boundary conditions are experience." Ibid, 50.

sense organs. It is a pale gray lore, black with fact, and white with convention. But I have found no substantial reasons for concluding that there are any quite black threads in it, or any white ones.⁵⁶

For Quine, the analytic/synthetic distinction collapses.

The second essay was published in 1969. In 'Epistemology Naturalized',⁵⁷ Quine contends that 'epistemology now becomes semantics. For epistemology remains centered as always on evidence, and meaning remains centered as always on verification.'⁵⁸ He concludes that "epistemology merges with psychology, as well as with linguistics."⁵⁹ He supports this claim in two stages. He begins by considering mathematical logic. He notes that the concept of "self-evidence" came under attack in mathematics when the foundational axioms of Euclidian geometry (which were justified by self-evidence) failed to account for non-Euclidian geometries. Thus, "self-evidence" (the intuition upon which foundationalism relies) appears to be an unreliable foundation for knowledge.⁶⁰ Although some of the greatest minds in Europe (including Alfred North Whitehead, who worked collaboratively with Bertrand Russell) wrestled with the logic of set theories to determine a new foundation for mathematics, they ultimately failed.⁶¹ The final blow came in Kurt Gödel's Incompleteness Theorems,⁶² which demonstrated that 'no consistent axiom system can cover mathematics even when we renounce self-evidence.'⁶³ Mathematical certainty must remain elusive.

⁵⁶Quine, 'Carnap and Logical Truth' in Schilpp, *The Philosophy of Rudolf Carnap* (Open Court, 1963), 405.

⁵⁷Quine, 'Epistemology Naturalized' in *Quintessence*, 259–74.

⁵⁸Ibid, 274.

⁵⁹Ibid.

⁶⁰Ibid, 260.

⁶¹For a discussion of Whitehead and Russell, *Principia Mathematica* (2011), see Kneale and Kneale, *The Development of Logic* (Oxford University Press, 1984), 517.

⁶²Gödel, *On Formally Undecidable Propositions of Principia Mathematica and Related Systems* (New York: Dover Publications, 1992).

⁶³Quine, *supra* note 56, at 260.

Next, Quine considered Hume's problem of induction. Hume 'identifies bodies outright with sense impressions.'⁶⁴ All that can be known of the external world is known through perception, but perception can yield very little knowledge. Quine notes David Hume's problem of induction also cast doubt on the possibility of foundationalism. Quine points out that the common-sense notion that objects persist in the world is "a vulgar confusion."⁶⁵ That is, we tend to reason inductively such that we assume a causal relation from correlated observations, but there is no logical foundation for the assumption. This is Hume's problem of induction. Foundationalist epistemology has failed on this account too, since the intuition of self-evidence relies on induction of precisely the sort that Hume describes.

What should replace foundationalist epistemology? For Quine it is to be replaced by the methods and conclusions of the natural sciences. He explains:

Epistemology still goes on, though in a new setting and a clarified status. Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies a natural phenomenon, viz., a physical human subject. This human subject is accorded a certain experimentally controlled output—certain patterns of irradiation in assorted frequencies, for instance—and in the fullness of time the subject delivers as output a description of the three dimensional external world and its history. The relation between the meager input and the torrential output is a relation that we are prompted to study for somewhat the same reasons that always prompted epistemology; namely, in order to see how evidence relates to theory, and in what way one's theory of nature transcends any available evidence.⁶⁶

⁶⁴Ibid.

⁶⁵Ibid.

⁶⁶Ibid, 269, *reprinted in* Kornblith, *Naturalizing Epistemology* (1994) 3 (emphasis added by Kornblith).

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Hillary Kornblith named Quine's approach to naturalizing epistemology the 'replacement' approach, since it involves replacing foundationalism with the natural science of psychology.⁶⁷

2.2 Leiter's Naturalized Jurisprudence

Brian Leiter's project of naturalizing jurisprudence is an example of a much larger trend in philosophy, in which naturalism refers to the attempt to bring philosophy into harmony with the natural sciences, such that the rational criteria for knowledge are in accord across the domains. While there are several ways that such a harmonization can occur, the common commitment among epistemological naturalists is the belief that philosophy *should* accommodate scientific methods. This commitment runs counter to the dominant earlier epistemological theories that sought to identify the foundational justifications for beliefs, including scientific beliefs. Viewed from this more traditional perspective, the sciences should be harmonized to the claims of philosophy, and not the contrary. Naturalism thus reverses the priority of philosophy's relation to the natural sciences by subordinating it to the sciences.

Naturalism has been influential in many areas of philosophy. Owing to Leiter's influence, the form of naturalized epistemology that has been most important for legal philosophy is the replacement naturalism associated with Quine.⁶⁸ Leiter views naturalized jurisprudence as a philosophically informed version of the central claims of Legal Realism.⁶⁹ He makes his case in two ways that mirror Quine's two ways to naturalize epistemology: by asserting epistemic holism and by rejecting foundationalism. Leiter argues that Legal Realists made arguments similar to both

⁶⁷Ibid.

⁶⁸Alvin Goldman developed a normative epistemological naturalism that some legal theorists have associated with Ronald Dworkin's legal theory. And, there is a form of substance naturalism (which seeks harmony by looking to avoid conflicts of legal theory with the conclusions of the natural sciences), which is associated with Scandinavian Legal Realism. See Leiter, 'Naturalism in Legal Philosophy', (*The Stan. Encyclopedia of Philosophy*, Jul. 31, 2012), <<https://plato.stanford.edu/archives/fall2014/entries/lawphil-naturalism/>> Jan. 21, 2017.

⁶⁹Leiter, *supra* note 17, at 39.

of Quine's approaches. He illustrates the impact of Quine's holism argument, which undercuts the distinction between *a priori* and *a posteriori*, by turning to a central claim of twentieth century Anglophone jurisprudence: legal positivism. To illustrate, he considers Joseph Raz's critique of H.L.A. Hart's 'Soft Positivism'. Leiter explains:

Raz offers an analysis of the concept of authority to show that Soft Positivism is incompatible, even in principle, with the law's possessing the authority it claims to possess. According to Raz, it is a non-normative prerequisite for a claim to authority that it be possible to identify the authority's directive without reference to the underlying "dependent" reasons for that directive. This is a prerequisite for authority because what distinguishes a (practical) authority, on Raz's "service" conception, is that its directives preempt consideration of the underlying reasons for what we ought to do, and in so doing actually make it more likely that we will do what we really ought to do. Authoritative reasons are claimed to be exclusionary reasons, excluding from consideration those dependent reasons (including importantly, moral reasons) on which the authoritative directive rests. Soft Positivism, then, undermines the possibility of a rule of recognition claiming authority, since for Soft Positivism a rule of recognition can, in principle, employ dependent reasons as criteria of legal validity: to identify, then, the directives about legal validity of such a rule of recognition would be impossible without recourse to precisely the dependent reasons the rule was supposed to preempt.⁷⁰

Hart believes that moral norms inform the 'rule of recognition' that identifies and legitimates claims to legal authority. Raz's contention is that in order for a normative claim to 'serve' to legitimate and authorize a legal rule, it must take priority over all competing norms that would challenge the legal rule. By taking priority, it excludes the competitors from consideration. Soft positivism, however, seeks to employ 'dependent' norms that must be assessed by reference to other norms. Thus, for Raz, Soft

⁷⁰Leiter, *supra* note 67.

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Positivism fails to establish the distinction that it is intended to establish—i.e., what is the authoritative distinction between law and non-law.

Quine's Gray Threads and Legal Knowledge

Quine's naturalism has consequences for the issue, since positivism requires a dichotomy between factual and normative statements that is difficult to maintain if the separation between *a priori* and *a posteriori* collapses. This collapse means that disagreements about the meaning of concepts is inevitable, since meaning depends on contingent experience—what Quine refers to as the 'grays' in the passage quoted above.⁷¹ Leiter notes that this condition of contingent meaning applies to philosophy generally. And, thus, 'intuitions about concepts enjoy no privileged epistemic status, while claims in empirical science do'.⁷² Although the natural sciences do not resolve the issue, they do provide a method for adjudicating between alternative meanings.

When it comes to law, however, the social sciences lack a clear concept that sharply delineates between legal and moral. When social scientist (and now computer scientists) attempt to model law, they have typically developed lists of "non-legal" factors that influence legal outcomes. But, this begs the question of the meaning of the concept of law. If the non-legal factors are substantial for determining the outcome of legal decisions, then are they not indeed law? And if they are not, then where does the conceptual boundary lie between law and non-law? Leiter notes that

...the best social-scientific accounts of adjudication, for example, boast predictive success that is so feeble (better than coin-tosses, but not much!) that their explanatory models with their implicit concepts of law, bear no epistemic coherence.⁷³

The predictive ability of the sciences is a key to the epistemic value that they assign to conceptual analysis. This brings to the foreground several

⁷¹See *supra* text accompanying note 55.

⁷²Leiter, *supra* note 17.

⁷³*Ibid.*

issues in epistemology, such as the relevance of Bayesian probability for legal analysis.

Legal knowledge without foundations

Quine's second way to naturalize epistemology is explored by Leiter in conjunction with his analysis that Legal Realists were legal pragmatists in the sense that they seek for their theories of law to be predictive of the outcomes of legal disputes and legal processes.⁷⁴ They were also anti-foundationalists, like Quine, because they rejected Legal Formalism, which held that legal outcomes are determined by purely formal reasoning.⁷⁵ Leiter believes, with Quine, the Realists sought to replace formal legal reasoning with scientific analyses of how legal actors (especially judges) make decisions, including the idiosyncrasies that influence their decision-making processes.⁷⁶ Leiter rejects the conventional view of Legal Realism, which he describes as follows:

(1) a *descriptive theory* about the nature of judicial decision, according to which, (2) judges exercise unfettered discretion, in order (3) to reach results based on their personal tastes and values, which (4) they then rationalize after-the-fact with appropriate legal rules and reasons.⁷⁷

Although this description might apply to some of the Realists such as Jerome Frank, who was rather extreme among the Realists, other more moderate Realists resisted the "Frankified" claims. Nonetheless, it was this extreme version that became the common understanding of Legal Realism. And, it was this predictive version that Hart decisively refuted in Chapter VII of the *Concept of Law*.⁷⁸

⁷⁴Leiter, *supra* note 17, at 40.

⁷⁵*Ibid.* at 23–24.

⁷⁶*Ibid.* at 25–26.

⁷⁷*Ibid.*, 16.

⁷⁸*Ibid.*, 17. (Leiter notes that for a discussion of Hart's argument, see Patterson, 'Legal Realism' in *A Companion To Philosophy of Law and Legal Theory* (1996) 261–79.

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The more moderate view was held by a number of influential thinkers such as Karl Llewellyn, George Oliphant, and Underhill Moore. According to Leiter, if they are viewed as the interpreters of their movement, then the Core Claim of Legal Realism is ‘judges respond primarily to the stimulus of facts’.⁷⁹ This is not to deny the significance of formal legal rules and legal reasoning, but it is to acknowledge that judges apply these rules differently in different factual settings. He notes that Llewellyn ‘maintained that one had to understand ‘how far the proposition which seems so abstract has roots in what seems to be the due thing on the facts before the court’’.⁸⁰ And elsewhere he would “speak of ‘the fact-pressures of the case.’”⁸¹

If this is taken to be the Core Claim, then Leiter argues, the Realists adopt an important philosophical perspective that is compatible with a replacement naturalism similar to Quine’s. First he notes:

The Realists are “anti-foundationalists” about judicial decisions in the sense that they deny that the legal reasons justify a unique decision: the legal reasons underdetermine the decision (at least in most cases actually litigated). More precisely, the Realists claim that the law is *rationaly* indeterminate in the sense that the class of legal reasons—i.e., the class of reasons a judge may offer for a decision—does not provide a *justification* for a unique outcome. Just as sensory input does not *justify* a unique scientific theory, so legal reasons, according to the Realists, do not *justify* a unique decision.⁸²

Thus, the first element of Quine’s naturalized epistemology, anti-foundationalism, seems to be recognized by the Realists, although on grounds somewhat different from Quine.

The second element of Quine’s theory is that the foundational commitments should be replaced by the methodologies and conclusions of the

⁷⁹Ibid, 21.

⁸⁰Ibid, 23.

⁸¹Ibid (citing Llewellyn, *The Bramble Bush: On the Law and Its Study* 33 (1951), 33).

⁸²Ibid, 39.

natural sciences. Leiter looks to the various attempts by Realists to explain and predict judicial behavior through the applications of various natural sciences and social sciences. He explains,

Jurisprudence, or more precisely, the theory of adjudication—is “naturalized” because it falls into place, for the Realist, as a chapter of psychology (or anthropology or sociology). Moreover, it does so for essentially Quinean reasons: because the foundational account of adjudication is a failure—a consequence of accepting the Realists’ famous claim that the law is indeterminate.⁸³

For Leiter, then, the Realists applied analogous reasoning to Quine’s replacement naturalism to justify their project.

2.3.3 The methodology of Naturalized Jurisprudence

With these assessments in hand, Leiter directly considers the methodological status of Anglophone legal theory. He argues that since Quine showed the impossibility of a strict separation of *a priori* and *a posteriori* sentences (Quine’s gray threads argument), jurisprudence cannot account for the boundaries between “law” and other nearby concepts, especially “moral” norms.

Law and morality are complexly related in the Hart/Raz debate on Soft and Hard Positivism. The Soft Positivist position was held by Hart.⁸⁴ For him, the Rule of Recognition is a social rule that has developed among judges as to what qualifies as authoritative. It derives from an “internal” perspective, in the sense that it is viewed from within the refined social circle of judges and the lawyers who practice before them. Leiter explains that “this is a Soft Positivism since the *only* constraint on the content of a society’s Rule of Recognition comes from the facts about the official practice in deciding questions about legality.”⁸⁵ This means that Hart does

⁸³Ibid, 40.

⁸⁴Although Soft Positivism was attributed to Hart by Raz, he acknowledges that it was his position in the Postscript to *the Concept of Law*. See Hart, *The Concept of Law*, 251.

⁸⁵Leiter, *Naturalizing Jurisprudence*, 160.

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not need to consider whether and how the judges engage in moral assessments of the law, but only the facts of what they do. As Leiter puts it: “That morality is a criterion of legal validity in some legal systems is just a contingent fact about the actual official practice of those systems, not a conceptual requirement of positivism’s account of law.”⁸⁶ This is a soft positivism then, since it respects the Legal Positivist claim of a separation between law and morality, but it also allows that in some systems a moral qualification for legitimacy might develop as a social practice.

Raz is a Hard Positivist, which means that he maintains a stricter dichotomy between moral and legal rules. For Raz, it is not enough that the Rules of Recognition reflect the actual practices of judges. What is needed is a way of determining that the practices are legitimate in themselves, and therefore that the judges as lawmakers and the laws they make are legitimate. This is accomplished through an analysis of the facts about the pedigree of the sources to determine if they have the legitimate authority to create law. Raz argues that this pedigree test performs a service by assisting the lawmakers to “comply more successfully with what ‘right reason’ would require.”⁸⁷

Leiter makes two points about this debate that are of interest here. First, that the terms of the debate have been set by the Hard Positivists, since the idea of pedigree as providing a constraining function is now the subject question as the debate continues.⁸⁸ Second, there remains a question about Ronald Dworkin’s claim that there are moral norms that are a part of the law even though they are non-pedigreed.⁸⁹ If Dworkin’s theory is a “third way,” then the status of these moral norms that are law without pedigree must be ascertained. In developing his analysis of this trilemma, Leiter examines John Finnis’ version of natural law.⁹⁰ Finnis is particularly interesting to Leiter because he accepts positivism as the common understanding of law among lawyers, but he criticizes Positivists (Soft and Hard) for failing to ask how it is that law is valid when it is manifestly unjust. What could legal validity mean in the face of moral condemnation?

⁸⁶Ibid.

⁸⁷Ibid.

⁸⁸Ibid.

⁸⁹Ibid.

⁹⁰Ibid, 162–63.

From this analysis, Leiter develops a critical observation about the current state of legal theory. He writes,

Legal Philosophers have, in my view, been having the wrong debate about jurisprudential methodology: legal philosophy is, indeed, descriptive and trivially so, in exactly the way most other branches of practical philosophy have an important descriptive component. The real worry about jurisprudence is not that it is descriptive—of it is (or tries to be)—but rather it relies on two central argumentative devices—analyses of concepts and appeals to intuition—that are epistemologically bankrupt.⁹¹

The methodological problem facing legal theorists, Leiter argues, has to do with conceptual analysis. Since he accepts Quine's analysis of the synthetic/analytic distinction, he argues that conceptual analysis and, therefore, philosophy has no useful purpose.

3. Wittgenstein and Patterson

Part 2 described Quine epistemology and Leiter's appropriation of it. Part 3 explores the epistemology of Wittgenstein, who agreed with Neurath's skepticism, but rejected aspects of his conception of philosophical method. Wittgenstein develops an anti-philosophy that is embraced by Dennis Patterson in describing the nature of legal interpretation.

3.1 Wittgenstein's anti-philosophy

Wittgenstein offers a radical affirmation of the skepticism of the early twentieth century by arguing against affirmative answers to (KK) (Is epistemology possible?). It is not that Wittgenstein believes that theories of knowledge are impossible, but that the question itself is nonsensical. There is no theory of knowledge because knowledge is not an achievement of the mind, it is an act of linguistic usage. He developed his theory

⁹¹Ibid, 175.

under the influence of Frege's theory of sense and reference. Frege's influence on Wittgenstein is evident in his early work, the *Tractatus Logico-Philosophicus*,⁹² which was influential for Logical Positivism.

Particularly in his early work in the *Tractatus*, Wittgenstein argued that meaning is simply the information content of a communication.⁹³ Thus, when he wrote in the *Tractatus* "The world is what is the case" and "The world is the totality of facts, not things,"⁹⁴ he meant that what can be understood about the world is only the information carried in communications. Later, Wittgenstein stated that to understand a proposition is "to know what is the case if it is true."⁹⁵ Karl Otto Apel argued that this must mean for Wittgenstein that "to understand a proposition, therefore, means to be able to state the logico-linguistic method of its possible verification."⁹⁶ To understand a proposition is to know how to show whether what it states is the case or not. This is what the neopositivists called the "verification principle."⁹⁷ Where propositions fail to contain the method of their verification, they have no sensible meaning—they are nonsensical. Wittgenstein believed that most philosophical statements are nonsensical because they fail in this area. He was aware of a psychological problem with understanding, because he acknowledged that ineffable qualities accompany understanding, but for him these are "philosophically inessential."⁹⁸

Later, Wittgenstein rejected the project of a logically precise language in favor of an "ordinary language" approach. This foundational shift is expressed in Wittgenstein's claim that "[p]hilosophy is not a body of doctrine, but an activity."⁹⁹ This is a radical rejection of theory-formation in philosophy, which he extends to a rejection of the correspondence of mental concepts to their referent. That is, he denies that concepts and words

⁹²Wittgenstein, *Tractatus Logico-Philosophicus* (1999). For an introduction to Wittgenstein's philosophy, see, G.E.M. Anscombe, *An Introduction to Wittgenstein's Tractatus* (1959).

⁹³Wittgenstein, *Ibid*, 4.

⁹⁴*Ibid*, 29.

⁹⁵*Ibid*, 47.

⁹⁶Apel, *Towards a Transformation of Philosophy* (1973).

⁹⁷*Ibid*, 6.

⁹⁸*Ibid*, 7.

⁹⁹Wittgenstein, *Tractatus*, 52.

refer to quiddity or essentialism. They have meaning only in the linguistic practice that he calls the “language game.” For Apel, Wittgenstein’s language game is a

...quasi-transcendental philosophical perspective. As he explains, “whereas it originally seemed as if . . . the understanding of meaning was to be replaced by the external description of behavior, this doctrine now seems to assert that only within the framework of a language-game does human behavior become possible.”¹⁰⁰

It might appear that Wittgenstein endorsed a form of behaviorism—that understanding is accomplished only through the method of objective criteria of empirically observable action. But Wittgenstein’s intention is to show that the meaning of behavior is intelligible only within the language game because individual acts of verbal expression are unintelligible without the context of the language game in which they are located and to which they contribute.

This explains why Wittgenstein believed that meaning cannot be a “private” affair. No one can privately follow a rule because there would be no intelligible way to determine whether the rule is being followed without some verbal description of the rule.¹⁰¹ No one can privately follow a rule or have a private language, nor can behavior be intelligible, without presupposing a language game that has aspects of a public “habit” or institution.

As a consequence of this, it is also the case that no one can privately follow a rule, a claim Wittgenstein makes in *Philosophical Investigations*.¹⁰² There is, however, some disagreement about what he meant. In Kripke’s influential book, *Wittgenstein on Rules and Private Language*,¹⁰³ he suggests that the argument is initially put forward in paragraph 202¹⁰⁴ and elaborated in the later paragraphs. This is where he ar-

¹⁰⁰Apel, 32.

¹⁰¹Ibid, 32.

¹⁰²Wittgenstein, *Philisophical*, 75–88.

¹⁰³See Kripke, *Wittgenstein: on Rules and Private Language* (1982).

¹⁰⁴Wittgenstein, *Philisophical*, 69.

gues that no one can privately obey a rule. On Kripke's reading, Wittgenstein asserts this impossibility because privately obeying a rule would eliminate the distinction between the objective practice of obeying a rule and subjectively thinking one is obeying a rule. It follows from this that there can be no private language because the rules of a private language would necessarily be subjective private rules, which are meaningless.

There are two readings of *Philosophical Investigations*, depending on whether one accepts Kripke's synthesis. For those who do, Wittgenstein is skeptical about the possibility of philosophy. Adherents of this view include diverse thinkers such as Richard Rorty, Stanley Cavell, and Alain Badiou, who argue that Wittgenstein is developing what Badiou calls an "anti-philosophy."¹⁰⁵ For them, Wittgenstein sets out his critique of linguistic philosophy in the private language argument, but offers no constructive alternative. Others, however, reject Kripke's reading. John McDowell, for example, contends that Kripke misunderstands Wittgenstein. Yet McDowell still defends Wittgenstein, arguing that he is advancing the claim that there is no "non-conceptual content" and therefore philosophy must focus on linguistic analysis.¹⁰⁶ This disagreement turns on the question of whether linguistic analysis can prove itself. That is to say, there is a self-evident foundation on which to ground the validity of the claims of ordinary language philosophy. The anti-philosophy readings of Wittgenstein suggest that there is not."¹⁰⁷

3.2 Patterson and modalities of interpretation

Dennis Patterson relies on Wittgensteinian epistemology in his jurisprudence. In *Law and Truth*,¹⁰⁸ he investigates the question "What does it

¹⁰⁵Badiou, *Wittgenstein's Antiphilosophy* (2011).

¹⁰⁶McDowell, *Mind and World* (1996), 18–23.

¹⁰⁷McDowell writes, "The fundamental thrust of Wittgenstein's attack [on private language] is not to eliminate the idea of a private language, which by itself would merely push the line of thought he opposes to this point. Wittgenstein's attack undermines even this position, which has already given up the idea of a private language, by applying the general moral: a bare presence cannot be a ground for anything." Ibid, 19.

¹⁰⁸Patterson, *Law and Truth*, 1.

mean to say that a proposition of law is true?”¹⁰⁹ He describes both realist and anti-realist approaches to jurisprudence, labeling Dworkin a realist and Hart an anti-realist. Dworkin’s realism is evidenced by his claim that legal positivism (Kelsen, Austin, and Hart) hold the view that “propositions of law are propositions about law.”¹¹⁰ On Patterson’s reading, Dworkin takes legal positivism to be inherently anti-realist in the sense that “no sense can be assigned to a proposition unless those who use that proposition all agree about how the proposition could, at least in theory, be proved conclusively.”¹¹¹ Dworkin’s claim is that legal positivism views legal propositions as making sense only within the context of the whole system of propositions that constitute the law. This claim, Dworkin contends, is necessitated by the epistemological commitments of the positivists, which is “more or less” anti-realist.¹¹² Thus, Patterson concludes that “Dworkin’s dispute with positivism connects jurisprudence directly with philosophy of language.”¹¹³ Further,

There can be no effective reply to the positivist’s anti-realist theory of meaning in law, however, unless an alternative theory of propositions of law is produced. That theory must assign a sense to controversial propositions of law comparable to the sense that controversial propositions in science, history, literature, and academic awards are supposed, by those who use them, to have. It must at least show how disagreement about such propositions may seem genuine to lawyers and not, as the anti-realist proposition would insist, illusory.¹¹⁴

For Patterson, this claim is evidence of Dworkin’s realism, since he views Dworkin’s constructive project as seeking to develop “an account of legal

¹⁰⁹Ibid Patterson states, “I take the task of jurisprudence to be that of providing a philosophical account of what it means to say that propositions of law are true and false.” Ibid, 4.

¹¹⁰Ibid, 7.

¹¹¹Ibid (quoting Dworkin, *The Philosophy of Law* 8 (1977)).

¹¹²Ibid.

¹¹³Ibid, 8.

¹¹⁴Ibid.

discourse that shows that the truth of legal propositions is not completely settled by legal practice.”¹¹⁵ As to his claim that judges look to extra-legal norms for guidance when deciding “hard” cases, Patterson reads as making the claim that “the truth (of at least some) legal propositions transcends our [the legal profession’s] current practices.”¹¹⁶

While Dworkin’s desire to ground the law in some foundationalist epistemology¹¹⁷ is understandable given the consequences for claims of legal truth for the distribution of power and the administration of justice, Patterson believes it fails because Dworkin does not establish an epistemological foundation for his claims, and (he quotes Donald Davidson), “[B]elieving something does not in general make it true.”¹¹⁸ Patterson argues that a successful realist epistemology rests “on the assumption that the world makes a contribution to the content and character of our knowledge,” and “this contribution comes by way of language.”¹¹⁹

A better approach to realism, according to Patterson, is advanced by Michael S. Moore. He argues that “the world...as it ‘really is’...guides our usage...by making an informational contribution.”¹²⁰ Moore, too, has a coherentist epistemology, in which “justification of any belief about anything is a matter of cohering that belief with everything else we believe.”¹²¹ For example, “we know someone is really dead by applying the

¹¹⁵Ibid.

¹¹⁶Ibid.

¹¹⁷Leiter describes Patterson’s argument this way: “...when Dworkin gives a belabored argument of moral philosophy for the constitutionality of affirmative action or Posner gives a complex efficiency argument for the law of negligence, whatever it is they are doing it does not look much like law. Their arguments in short, whatever their intellectual merit and ingenuity, do not sound much like lawyer’s arguments, the sorts of arguments lawyers could stand up and make in court without being laughed out of the courtroom or cited for contempt.” Leiter, *Naturalizing*, 139–40.

¹¹⁸Ibid, 9.

¹¹⁹Ibid, 10.

¹²⁰Ibid.

¹²¹Ibid (quoting Moore, ‘Precedent, Induction, and Ethical Generalization’ in *Precedent in Law* (Laurence Goldstein ed., 1987) 183, 198).

best scientific theory we can muster about what death really is.”¹²² Patterson is critical of this approach, however, because even death cannot be “proved” independently of language.¹²³ He believes that realism depends on independence from language such that “unless [Moore] can show how... ‘a conception of facts could exert some leverage in the investigation of truth,’ it seems the claim ‘the world makes what we say true or false’ is, at best, a platitude.” Failing in this way to provide an account of how “‘evidence-transcendent’ conditions constrain linguistic behavior,”¹²⁴ realism fails for Patterson.

3.3 Patterson on anti-realism in jurisprudence

Patterson is similarly critical of what he takes to be anti-realism in jurisprudence, which he describes in this way:

The realist wants to say that what we say has to be true in virtue of something beyond the agreement of fellow practitioners. Anti-realists deny that any such constraints exist, or that the whole notion of anything limiting what can be said “truthfully,” is an illusion.¹²⁵

He attributes the origins of this view to Wittgenstein, who he describes as holding a “Postmodern view,”¹²⁶ which he understands as holding that the meaning of words does not exist in an individual mind, but in the shared use of the word.¹²⁷ Patterson makes this claim regarding Wittgenstein’s

¹²²Ibid (quoting Moore, ‘A Natural Law Theory of Interpretation’ (1985) 58 S. Cal. Law Rev. 277, 294

¹²³Ibid.

¹²⁴Ibid, 11.

¹²⁵Ibid, 12.

¹²⁶He explains: “The view I identify as “postmodern” rejects the project of unraveling the connection between propositions and what makes them true. From a postmodernist point of view, to say that some proposition is true is to say that “a sufficiently well placed speaker who used the words in that way would be fully warranted in counting the statement as true of that situation. “ Ibid, 150.

¹²⁷Patterson, *Law and Truth*, 12.

later works, where he shares his thoughts on rule-following, arguing that, in this “postmodernist view,” a legal proposition is true “if a competent legal actor could justify its assertion...In short, ‘true’ is a term of commendation or endorsement.”¹²⁸

With this view of Wittgenstein’s rule-following comments in hand, Patterson argues that anti-realist arguments may be weak or strong. Weak anti-realism simply asserts that “our understanding of the world is based on some interpretation of it; that all views of the world are a matter of one or another ‘perspective.’”¹²⁹ This view, which Patterson associates with Stanley Fish and Sanford Levinson, is a form of relativism, since what counts as a true proposition depends on what an interpretative community selects as validating criteria. He associates strong anti-realism with the critical legal-studies movement. It holds that “the entire range of issues from truth, meaning, objectivity, and the like, [are] little more than a collection of philosophical antiquaria.”¹³⁰ He makes this claim because the strong anti-realists believe that all interpretation is rationally arbitrary. The Critical Legal Studies Movement applied this claim to law, with Unger arguing that “[n]o matter what the content of [a] background theory, it is, if taken seriously and pursued to its ultimate conclusions, unlikely to prove compatible with a broad range of received understandings.”¹³¹ Patterson contends that, for the anti-realist, the legitimacy of a legal argument, depends on the standards of meaning and rationality internal to legal practice. He notes Joseph Singer’s contribution to this view: that “the

¹²⁸Ibid, 152.

¹²⁹Ibid, 14.

¹³⁰Ibid, 15.

¹³¹Ibid (quoting Unger, *The Critical Legal Studies Movement* (1986), 9). Patterson explains: “Unger states that one should neither accept doctrine blindly nor reject it as a whole. This leaves one in the difficult position of deciding just what to include and what to leave out. To make these choices, “you need a background perspective theory of the relevant area of social practice, a theory that does for the branch of law in question what a doctrine of the republic or the political process does for constitutional argument.” This where the trouble starts.” Ibid.

coherence and consistency of legal doctrine is not normative but sociological. Lawyers and judges see the world through the same categories.”¹³²

3.4 Beyond Realism and Anti-Realism?

Finally, Patterson advocates his own epistemological theory for jurisprudence, which he developed out of Phillip Bobbitt’s work in constitutional theory.¹³³ Patterson summarizes Bobbitt’s view this way:

- (1) “The conventional wisdom treats propositions of constitutional law as if they were propositions about the world (empirical propositions).”¹³⁴ He means that constitutional interpreters treat statements as true if they agree with their theory of interpretation, since they “treat[] legal propositions as if they were statements about the world.”¹³⁵
- (2) This argument is Langdellian in the sense that it is concerned with the “causal” explanation of the nature of constitutional law and theory by looking at the “ideological and political commitments [that] are somehow ‘behind’ or ‘beneath’ the surface play of constitutional argument.”¹³⁶
- (3) These Langdellian approaches, however, “miss the target” because the law is not about the world but about normative practices.¹³⁷

¹³²Ibid, 16. Patterson is critical of Singer’s identification of background theory with sociology. He notes Hart’s criticism of this position stating, “One cannot understand the nature of justification without investigating how individuals in a practice use rules as justifications for another’s behavior. Singer thinks that if a rule does dictate results mechanically it can play no justificatory role. This is absurd. Were it true, we could not understand how rules govern everything from cello performance, to chess, to traffic regulation. Are all of these activities, which we see as governed by rules, to be dismissed as merely behavioral response to cultural stimuli?” Ibid at 18.

¹³³Ibid 128.

¹³⁴Ibid, 133.

¹³⁵Ibid (quoting Bobbitt, *Constitutional Interpretation* (1991), 34).

¹³⁶Ibid.

¹³⁷Ibid, 134.

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(4) To understand the normative foundations of law, the six modalities of constitutional reasoning that “constitute the argumentative matrix of constitutional law” should be examined.¹³⁸

(5) To explain why this matrix of modalities is accepted as legitimate among the member of the legal community, he argues that the modalities “are the ways in which assertions of what is the case as a matter of law are appraised.”¹³⁹ Drawing from Wittgenstein, he argues that the matrix constitutes the practice that defines the legitimacy of constitutional interpretation.¹⁴⁰

Patterson argues then, that the practice of law is indeed a practice in the sense that Wittgenstein uses the term. Therefore, it provides the normative standards by which justification takes place. That is, there is no referent outside of the linguistic practice (language game) whereby the truth of a proposition can be judged in absolute terms. Patterson argues that the same is true for the propositions of law.¹⁴¹

He explains that the meaning of a “corporate act” (such as a legislative act) “is given by the practice of statutory interpretation.”¹⁴² He means to say that “truth” is not meaningful as a concept in law in the same way that it is in the sciences, and both the realists and anti-realists of jurisprudence miss the significance of it. Truth, in the epistemological sense, has something to do with justifying claims to knowledge, but in law there is no knowledge external to the processes of law. Legal truth is simply an assertion that a proposition will be understood and accepted as legitimate

¹³⁸Ibid, 136. There are six modalities that Patterson takes from Bobbitt: (1) historical; (2) textual; (3) structural; (4) doctrinal; (5) ethical; and (6) prudential. Ibid, 137 (quoting Bobbitt, 12–13).

¹³⁹Patterson, ‘Law and Truth: Replies to Critics’ (1997) 50 *SMU L. Rev.* 1563, 1589 (citing Hacker, *Wittgenstein’s Place in Twentieth Century Analytic Philosophy* (1996) 97–136).

¹⁴⁰Ibid.

¹⁴¹He calls this “the denial of the truth-conditional account of law.” Patterson, *Law and Truth*, 19.

¹⁴²Ibid.

by the members of the profession. Patterson thus argues that legal professionals form a community of discourse that gives the words and propositions of law their meaning. Attempts to analyze law from other perspectives—moral, economic, and so on, “miss the internal logic and integrity of actual practice of legal argument as we find it in countless oral arguments and lawyer’s briefs every day throughout the country.”¹⁴³

4.1 Structural Realism and Jurisprudence

Neurath’s epistemology was skeptical in the sense that it denied the possibility of having knowledge of things in themselves. Quine and Wittgenstein reflect this anti-realist perspective in their work and in the jurisprudence that it inspired in Leiter and Patterson. Another influential epistemological alternative was developed by Moritz Schlick, which rejected anti-realism. This Part of the essay describes Schlick’s theory, known as structural realism and Floridi’s development of an informational variant of it. It then suggest how a structural realist epistemology might support a jurisprudential perspective.

4.1 The challenge to skeptical epistemologies

It appears that much of the disagreement between Patterson and Leiter involves the difference between Wittgenstein and Quine on the normative conception of meaning. Leiter writes, “*Truth and Law*, then, is ‘internal’ (in some sense that remains vague) to the practice of legal arguments.”¹⁴⁴ Patterson objects to Leiter’s characterization of his account of truth as “internal.”¹⁴⁵ He explains, “All of these efforts [by Dworkin and Posner] to understand law from ‘a point of view’ (i.e., an interpretive point of view) come to naught, for they are based on a philosophically defective account of the nature of meaning.”¹⁴⁶ A key passage in Leiter’s critique offers, perhaps, a salient rebuttal: “But a practice of argument can be quite

¹⁴³Ibid (quoting Bobbitt, 23).

¹⁴⁴Leiter, *Naturalizing Jurisprudence*, 139.

¹⁴⁵See Patterson, ‘Law and Truth: Replies, 1591.

¹⁴⁶Ibid at 1593.

legitimate in a sociological sense...and still be utterly illegitimate in the philosophical sense...."¹⁴⁷ The difference between them thus seems to turn on Patterson's assertion, and Leiter's denial, of the validity of Wittgenstein's claim about the normativity of meaning. Patterson follows Wittgenstein by asserting, and Leiter follows Quine by denying, that the practice of language is epistemically normative in itself. Quine rejects this claim in favor of empirical evidence which is pragmatically assessed.

If this is an accurate assessment of their disagreement, then there is little hope of a resolution between them because they disagree about the criteria for truth—the answer to (KK)—and therefore there is no common ground between them on which a resolution is possible. Patterson cannot accept Leiter's claim that law can look to empirical evidence for legitimation, and Leiter cannot accept Patterson's claim that it cannot. There is no possibility of adjudicating between them because their disagreement concerns the criterion for agreement.

This failure to agree on the normative standard for agreement poses a challenge to skeptical epistemological approaches to jurisprudence. Without a realist foundation, how can common ground be achieved in a liberal democracy? That is to say, if one takes a liberal democracy as accepting a legitimate plurality of worldviews, then how can common ground be achieved for democratic discourse that lacks some shared foundational belief? While each theory proposes a way of achieving democratic discourse, they each presuppose views about the sources of epistemological norms, which itself is likely to be a point of disagreement in democratic discourse.

One approach to this question is to consider how jurisprudential theories change. That is, why do jurisprudential theories change and why do some features of such theories persist despite change? These questions seek to understand what kinds of belief are stable and what kinds of belief change.

¹⁴⁷Leiter, *Naturalizing Jurisprudence*, 139.

4.2 The Structural Realist alternative

Contemporary Structural Realism developed out of questions about how theories change in the natural sciences. It is an alternative to the coherentism and holism of Neurath/Quine and the social practice theory of meaning advanced by Wittgenstein. Quine and Wittgenstein were influenced by Neurath, but Structural Realism drew its influence from Moritz Schlick, who repeatedly criticized¹⁴⁸ Neurath's anti-foundationalism. Where Neurath believed there are no meaningful pre-linguistic experiences on which epistemology can be founded, Schlick, who had been trained as a physicist under Ernst Mach, believed that "there are a class of *Konstatierrungen* or quasi-judgements of immediate experience."¹⁴⁹ For Schlick, some sentences are warranted by experience alone. Eventually, Schlick and Neurath reconciled, and both together with Carnap, founded the Vienna Circle.

Schlick's Structural Realism (which he called, "physicalism") was influential for a number of followers, including Whitehead, Russell, Carnap, Cassirer, Duhem, and Eddington.¹⁵⁰ Structural realism maintains Schlick's belief in immediate intuition of some ontological entities, but for the contemporary Structural Realists, what is intuited are a limited number of structural relations. Respect for the Kantian separation of phenomenon and noumenon is maintained, since there is not knowledge of

¹⁴⁸Schlick argued against Neurath's coherentism in 'Positivism and Realism' (1932), 'On the Foundations of Knowledge' (1934), and 'Facts and Propositions' (1935), in Dancy and Sosa, *Companion to Epistemology*, 465.

¹⁴⁹Schlick, *General Theory of Knowledge* (1918); See also Dancy and Sosa, *Companion to Epistemology*, 465.

¹⁵⁰For historical background on the origins of structural epistemology see Gower, 'Cassirer, Schlick and "Structural" Realism: The Philosophy of the Exact Sciences in the Background to Early Logical Empiricism' (2000) 8 *Brit. J. for Hist. Phil.*, 71–106. See also Russell, *The Problems of Philosophy* (2012); Russell, Stebbing, and Heath, 'Symposium: Materialism in the Light of Modern Scientific Thought' (1928) 8 *Proceeding Aristotelian Soc., Supp.* 130–42 (describing Whitehead's and Russell's contribution to early structural realism); Maxwell, 'Scientific Methodology and the Causal Theory of Perception' in Lakatos and Musgrave, *Problems in Philosophy of Science* 148–60 (1968), 148–60 (discussing Russell and Poincaré).

the thing-in-itself beyond the assertion that something relates to something else. Floridi summarizes structural realism as arguing that “the structural properties of reality are knowable in themselves, and hence that, with a bit of luck, one may get them right.”¹⁵¹

An influential contemporary form was advanced by John Worrall, writing to address the question of theory change in the natural sciences. Worrall was reacting to these two contrasting interpretations of how scientific theories about unobservable entities should be interpreted. He explored this issue historically by questioning what can be learned about it from the history of theory change. He explained the issue using an example from the history of physics: the change from Fresnel’s solid ether theory of light to Maxwell’s electromagnetic theory. Fresnel argued that light travels as waves through an invisible ether. Maxwell developed the electromagnetic theory, which dispenses with invisible ethers in favor of viewing light as electromagnetic radiation. Does the replacement of Fresnel’s theory by Maxwell’s theory suggest anything about how scientific claims about invisible entities should be assessed? One thought at the time held that we should not believe that scientific theories give knowledge of hidden entities because theory changes like the Fresnel to Maxwell change suggest that such claims are inherently unreliable. Things change too much. Another claim is realist. It was colorfully argued by Putnam that for the consistency to persist to the degree that it does across theory-changes, there must either be real entities or some sort of magical force. Worrall’s approach to Structural Realism seeks to find a middle way: what is “real” and therefore consistent in theory-change are the relations that science discovers. The actual entities are not knowable, but the relations among them are. Thus, scientific knowledge is knowledge of the formal and structural relations among observations. These formal structures do not change across theory changes—for example Fresnel’s equations fit into Maxwell’s theory. Therefore, epistemology is possible, but knowledge worthy of the name is of structural relation, not of actual entities.¹⁵² Thus, SR agrees with the Kantian view on phenomena and *noumena* (that knowledge of phenomena is possible, but not of *noumena*); it

¹⁵¹Floridi, ‘A Defense’, 219.

¹⁵²This approach has been particularly influential in the philosophy of physics. See, e.g., French and Ladyman, ‘Remodeling Structural Realism: Quantum Physics and the Metaphysics of Structure’ (2003) 136 *Synthese* 31–56 .

examines the meta-question (KK) (is epistemology possible?) in relational terms and answers in the affirmative. While Kant sought justification in the intuited structure of individual subjectivity, ISR seeks foundational commitments in observed relations that are stable among phenomena.¹⁵³

4.3 Informational Structural Realism

Floridi's contribution is to extend SR by interpreting Structural Relations informationally. He argues that despite its successes, Structural Realism does not adequately explain the nature of the structures to which it refers. He writes, "it leaves unspecified the nature of the *relata* in the structures."¹⁵⁴ He proposes an Informational Structural Realism (ISR) as an attempt to resolve this issue by claiming a minimal ontological commitment in favor of the existence of structural objects (that the *relata* are between existing entities). This minimal ontological claim entails a minimal epistemological commitment, that "we can safely assume there is an outside world."¹⁵⁵ For Floridi, the world is known through information about relations among entities.

Informational structures occur at different levels of abstraction (LoA). Analysis of these is a central feature of the methodology of PI.¹⁵⁶ Floridi and Sanders develop this method as an inter-subjective approach that can further the Kantian project, while not falling into the individualistic psychologism that was criticized by Cassier and C. I. Lewis. The LoA method is inter-subjective, socially constructible, dynamic, and flexible.¹⁵⁷ It is an application of a modeling technique developed in computer science for analyzing machine logic called Formal Methods. It applies discrete mathematics to specify and analyze the behavior of information systems.¹⁵⁸ The method involves determining the members of sets of "observable."

¹⁵³Poincare, Gover Maxwell make similar claims.

¹⁵⁴Floridi, *supra* note 1, 341.

¹⁵⁵*Ibid*, 361.

¹⁵⁶*See Ibid*, 44–79.

¹⁵⁷Floridi, 'A Defense', 229.

¹⁵⁸Floridi, *The Philosophy of Information*, *supra* note 1, 52. Formal Methods is developed from the Z verification specification language, which is derived from the set logic of Zermelo.

When two theories interact, the LoA analysis seeks to determine whether the sets of observables coincide, and if not, how are they related?

For example, compare the sets of observables in two experts: one is a wine connoisseur whose observables are concepts that distinguish features of taste, aroma, color, and texture. The second expert is a wine merchant, whose goal is to distinguish market-relevant feature of wine. The merchant will make the same observations about the wine, but having a different objective, the concepts she uses might have a somewhat different meaning. The merchant's set of observables will include extrinsic commercial matters such as time of availability, transportation costs, storage environment, labeling, taxes and tariffs, and the abstract concepts of supply, demand, and price. In this example, the connoisseur and the merchant may make related, but different, informational analyses of a bottle of *Amarone della Valpolicello*. The connoisseur's observation set might include characteristics such as robust earthy, ruby red, hints of blackberry, etc. All of these terms might also be in the merchant's wine notes, along with price history, availability, and location of a case for purchase. In the LoA analysis, these sets of observables are for a gradient of abstraction (GoA), wherein the connoisseur's set of observables are nested in the merchant's.

At the lowest levels, closest to the *relata*, the LoA mediate knowledge most directly. In this case, the connoisseur's observations are sensual and most immediately experienced in conscious awareness. At higher LoA, knowledge is not directly knowable, but may still be "epistemologically interactable." The merchant, for example, has knowledge of the commercial features of the wine, which are not subject to change and have consequences for its commercial value, but some of these features are known indirectly through reports and analysis. Nonetheless, they are known, and it may be possible to draw out inferences about the structural relations at this higher level of abstraction.¹⁵⁹

¹⁵⁹Floridi defines Informational Structural Realism (ISR) as follows: "Explanatorily, instrumentally and predictively successful models (especially, but not only, those propounded by scientific theories) a given LoA [Level of Abstraction] can be, in the best circumstances, increasingly informative about the relations that obtain between the (possibly sub-observable) informational objects that constitute the system under investigation (through the observable phenomena." Ibid at 361.

4.4 Towards an informational account of law

ISR suggests the need for and promise of an informational account of legal reasoning. It does not seek to understand law as only semantic information, but leaves the definition of information open in order to understand how different types of information interact in law and legal institutions. An information theory of law thus seeks to map the informational structures that are relevant to legal knowledge and the outcomes of legal issues. It seems likely that at least some of these relationships can be mapped through the use of advanced computational systems that today allow for new relational patterns to be discerned. In biology, for example, it is now possible to analyze entire ecosystems from an informational perspective by looking at DNA and the exchange of proteins in the environment. A similar approach should be a goal for legal theory, mapping the flow of different types of information—semantic, binary, biological, environmental, etc. Systems research will be an important part of this study. An informational theory of law will pay attention to the complex relationships among coupled social systems.¹⁶⁰ Some of the features, such as emergence, self-organization, systemic coupling, and agent-based objects, are useful for developing computational models of law,¹⁶¹ particularly in areas where the law is thickly connected to a market or market analogues. Computational theories of complex adaptive systems are being developed, particularly in economics, and a promising direction for research is to evaluate the presuppositions of these computational models against the traditional philosophical approaches.

Using ISR, legal theorists can now investigate the informational abstractions involved in the various measures of probability, since these

¹⁶⁰A general introduction to complex dynamic systems can be found at Miller and Page, *Complex Adaptive Systems: An Introduction to Computational Models of Social Life* (2007). For a discussion of law as a complex dynamic system, see Ruhl, 14; Jones, 'Dynamical Jurisprudence: Law as a Complex System' (2008) 24 *Ga. St. U. L. Rev.* 873–83; Katz, Stafford, and Provis, 'Social Architecture, Judicial Peer Effects and the "Evolution" of the Law: Toward a Positive Theory of Judicial Social Structure' (2008) 24 *Ga. St. U. L. Rev.* 977–1001.

¹⁶¹For a discussion of quantitative approaches to law's complexity, see Holz, 'Chaos Worth Having: Irreducible Complexity Pragmatic Jurisprudence' (2007) 8 *Minn. J.L. Sci. & Technology* (2007) 303.

methods of analysis are gaining ground in models of legal analysis that are being deployed in, for example, legal search engines, legal assistants, and predictive modeling of judicial behavior. PLI considers the relationship between these new computational models and traditional issues in legal philosophy. This is a developing area in legal scholarship today. While complex systems theory will no doubt be an important contributor to an informational theory, there is currently no reason to believe that legal theory is reducible to systems theory.¹⁶²

Another concern for an informational theory of law is the science of complex systems. While traditional jurisprudence has assumed that the nature of law is relatively static and homogenous, empirical analysis suggests that jurisprudence must accommodate evolutionary models of complex adaptive systems where systems are presumed to interact dynamically. The application of systems theory to the analysis of legal systems have been met with some support and some resistance, but as Ruhl explains, theoretical understanding of the law might benefit from embracing it:

One might accept the presence of invisible hands throughout social presence invisible throughout life and the value of using complex adaptive systems theory to understand them better, but nonetheless resist applying complex adaptive systems theory to legal systems on the ground that the law is where humans write the rules for other social systems. But this misses two fundamentals. First, the legal system, as a source of rules for regulating other social systems, should take into account how those systems operate. If one wishes to regulate a complex adaptive social system, one ought to think like a complex adaptive social system. Second, law, as in the collection of rules and regulations, is collection the product of the legal system, a collection of people and institutions. Law, in this sense, is simply an emergent property of

¹⁶²A similar note should be observed about the relationship between PLI and the field of Artificial Intelligence and Law. Floridi notes this, suggesting that the philosophy of AI was premature in the sense of having arrived before a clear sense of the nature of information had emerged. See Floridi, *A Very Short Introduction to Information*, *supra*, note 1, 2–3.

the emergent legal system the same way prices are an emergent property of markets.¹⁶³

An informational theory of law must investigate whether and how law operates as a complex adaptive social system and how it is coupled with other social systems.

Thus, for example, understanding the structure of legal knowledge (what is known in library sciences as the legal ontology) is a goal, but unlike the library sciences version of legal ontology, the informational account sought explores the impact that digitalizing law has on the informational structures (semantic and otherwise) that form the matrix of legal systems. Thus, an informational account of legal reasoning deals with law as semantic information, but also with the other types of information that also contribute to legal outcomes. In considering the behavior of judges, an informational account includes not only semantic information of law, but also social information such as ideology, economic information, moral norms, and even non-semantic information such as the binary code that carries semantic meaning and the physical instantiations of information that might be relevant. The decisive question is what features of the entire information environment contribute to a decision or outcomes. Thus, an informational account of law is a cross-disciplinary investigation of the entire information environment that shapes law and legal institutions.

5. Conclusion

This essay presents the epistemological foundation for an informational account of law. To appreciate the significance of such an account consider, for example, an informational account of 1930s Social Darwinist jurisprudence of the Eugenics movement. Eugenics social theory shaped a wide range of legal thought from freedom of contract in *Lochner v. New*

¹⁶³Ruhl, 897. The belief that law is a complex system was advanced first by Luhmann, *Law as a Social System* (2008).

York¹⁶⁴ to reproductive rights in *Buck v. Bell*.¹⁶⁵ But, by 1943 in *Skinner v. Oklahoma*,¹⁶⁶ the Supreme Court could find that the forced sterilization of repeat offenders of crimes of moral turpitude violated the equal protection clause of the 14th Amendment.¹⁶⁷ Subsequently, states slowly withdrew from performing the practice for “imbeciles,” and today the repudiation of Social Darwinism is the norm.¹⁶⁸ How did the change occur? Quine’s theory stresses the role of empirical evidence, but what evidential changes occurred to change the social meaning of Darwin’s theory, and why? Wittgenstein stresses changing social norms, but why do aspects of evolutionary theory persist, even when the social meaning of it has changed, and why? If Social Darwinism was empirically flawed, then why is population genetics still respectable? And, if it was a Wittgensteinian language game, how was the normativity of the hermeneutic circle overcome? These are important questions for jurisprudence that require some understanding of how scientific theories change, and what aspects do not. But, it seems that since Quine and Wittgenstein (and Leiter and Patterson) disagree about the criteria for distinguishing true and false, there can be no such understanding. Structural realism is influential in the natural sciences precisely because it offers answers where linguistic approaches do not.

The eugenics legacy also suggests the need for an information jurisprudence, which is gaining ground once again, because of recent evolutions in genetics in the past few decades. In Adam Cohen’s 2016 book, *Imbeciles, The Supreme Court, American Eugenics, and the Sterilization of*

¹⁶⁴*Lochner v. New York*, 198 U.S. 45 (1905).

¹⁶⁵*Buck v. Bell*, 274 U.S. 200 (1927).

¹⁶⁶*Skinner v. Oklahoma*, 315 U.S. 535 (1942).

¹⁶⁷Justice Douglas delivered the opinion of the majority, stating: “We are dealing here with legislation which involves one of the basic civil rights of man. Marriage and procreation are fundamental to the very existence and survival of the race. The power to sterilize, if exercised, may have subtle, far reaching and devastating effects. In evil or reckless hands it can cause races or types which are inimical to the dominant group to wither and disappear.” *Ibid*, 541.

¹⁶⁸For a discussion of the eventual abandonment of the practice of forced sterilization and repudiation of the eugenics movement, see Nourse, *In Reckless Hands: Skinner v. Oklahoma and the Near Triumph of American Eugenics* (2008).

Carrie Buck,¹⁶⁹ he notes several events that suggest the persistence of interest in eugenic sterilization, and cautions the following.

If eugenic sterilization becomes a national movement again, it could, like the last time, be driven by genetics. The Human Genome Project, a massive international research effort, is aiming to map every human gene, and it is already providing vast new amounts of data and insights about hereditary traits. Scientists have raised concerns. One study in the *American Journal of Human Genetics* cautioned that “there is a significant risk that there will be an increased sentiment for instituting eugenic measures in the United States.” The official website of the federal government’s National Human Genome Research Institute notes that the eugenics implication of the Human Genome Project must be “carefully studied.”¹⁷⁰

An informational theory of law seeks to discover the workings of the law by examining the informational structures (*relata*) among individuals and between persons and institutions. These relations are informational and sometimes mathematical. They describe rights for individuals, who are informational agents—the actually existing ontic entities among which relations occur. Some of the relations can be described as complex systems, others as linear systems, and many others might not be reducible to mathematical analysis. Relational systems interact, and the interactions between systems can be identified. Where possible, they can also be modeled.

Generally, the eugenics laws are understood to be attempts to regulate public health by eliminating certain features (low intelligence, for example) from the population. An informational perspective can accommodate contemporary informational biology:¹⁷¹ the eugenics movement can be reconstrued as an attempt to use the semantic information of law to control the biological information of a population through the repression of the propagation of individual information agents. This interpretation casts light on the power of the state, through direct and indirect means, to in-

¹⁶⁹Cohen, *Imbeciles, The Supreme Court, American Eugenics, and the Sterilization of Carrie Buck* (2016).

¹⁷⁰*Ibid*, 320.

¹⁷¹For a discussion of the biological cell as computational system, see Venter, *Life at the Speed of Light: From the Double Helix to the Dawn of Digital Life* (2013), 25–46.

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fluence the genetics of a population. Through the regulation of the environment, economy, and socio-cultural policies, government controls diet, medications, pollutants, and countless other health-related influences. These measures also, of course, shape the genetic makeup of the population. Less noticeable are the lasting epigenetic consequences that can result from traumatic events such as wars, economic upheavals, and weather-related disasters, all of which are shaped by governmental actions and reactions. An informational approach to legal theory promotes investigating all of these sources as relevant to understanding the law in relation to population genetics. While a comprehensive understanding of all of the governmental programs impact on the genome is beyond current ability, some understanding is possible, particularly through the pattern recognition faculties of advanced artificial intelligence. It is important to note that, with this knowledge, comes the responsibility to govern intentionally and responsibly.

Today, ICT have given human beings a means to collect vast amounts of diverse data and find subtle patterns in it. New concepts and new issues are emerging from these enhanced faculties. They call into question traditional solutions and habits of mind. To live responsibly in this time of extraordinary change is a daunting challenge. To respond to the challenge will take substantial resources, human and otherwise, and a willingness to rethink many long-held commitments—not only commitments about how we think about the law, but even how we think about ourselves. Informational Structural Realism offers new directions for jurisprudence that give it relevancy to the social issues that come with the ICT. It can address question about the way legal information shapes and is shaped by other types of information—how it shapes and is shaped by population genetics for example. And it offers new relevancy for jurisprudence that can speak to the challenges that lie ahead. The future of jurisprudence lies in understanding how law interacts with other information systems.¹⁷²

¹⁷²These comments are offered here to suggest why an informational jurisprudence is needed, and how it might be grounded. A full theoretical account, including a normative jurisprudence that is based on an informational moral philosophy, is needed. Subsequent essays will take up these issues.

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