

NATURALIZING LEGAL INTERPRETATION AFTER GENERATIVE AI

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Abstract

This essay examines the challenges and opportunities of integrating generative AI into legal interpretation, focusing on how AI can align with the cultural and interpretive dimensions of human legal reasoning. Drawing on the works of Brian Leiter and Charles Taylor, the paper contrasts designative theories of language, which underpin traditional AI models, with constitutive theories, which emphasize language's role in shaping human experience and legal meaning. The rise of generative AI, rooted in complexity theory, reveals both the limitations of conventional formalist approaches and the potential to model law as an adaptive, emergent system. By synthesizing complexity science and constitutive linguistics, the essay proposes a framework where AI's computational capabilities are harmonized with the contextual and moral dimensions of legal judgment. This perspective seeks to bridge the empirical rigor of naturalism with the dynamic interpretive practices that define law, offering a pathway to enhance legal AI while preserving the richness of human-centered jurisprudence.

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INTRODUCTION

In recent years, large language models (LLMs) have emerged as powerful tools capable of processing and generating legal language at an unprecedented scale. Not only can these systems perform complex legal tasks, from contract analysis to document drafting, they operate on models of language that hold profound philosophical implications for thinking about the nature of legal interpretation, yet the field has not attracted much attention in the jurisprudence area. Often, authors in this area do not engage with the complex philosophical issues. For instance, by not fully integrating insights from Luciano Floridi's *Philosophy of Information*, or the substantial scholarship of Brian Bix on legal interpretation, and the tradition of naturalized jurisprudence developed by Brian Leiter, the scholarship overlooks the critical role of semantic depth, context, and emergent understanding in legal interpretation. Leiter, Bix, and Shapiro in particular, have explored the indeterminacy of legal texts and the inherent limitations of formalist approaches, emphasizing the need for interpretive frameworks that account for context and social meaning. Similarly, Floridi's philosophy underscores the complexities of informational structures that are often flattened or oversimplified in algorithmic systems. This gap, particularly the philosophical dimensions related to context, meaning, and interpretation, persists in much of the legal scholarship surrounding AI.

LLMs are often described as probabilistic systems that match patterns in vast corpora of data, but such a description underestimates their significance. The dominant view of language is “designative,” meaning that it holds words to correspond to concepts that, in turn, correspond to mental objects (philosophers call these mental objects “intentional objects”). For example, the word “apple” signifies a concept of apple that corresponds to a kind of object. While this view of language is ancient, LLMs are constructed on a different understanding of how words relate to meaning. According to this view of language meanings are emergent from patterns, contexts, and usages of the whole language, rather than the fixed designations of individual words. To understand the meaning of “apple” one must examine the whole linguistic use of “apple” and also the lived experiences of them. The meaning emerges through interactions of persons with the fruit in their lived experience of their culture and their world. Reducing this vast context to a definition thins out the richness of the full meaning referred to by the word.

In the context of legal reasoning, rather than being constrained by formalist rule-based systems, “LLMs embody the adaptive, emergent properties of complex adaptive systems (CAS).” This shift in perspective reframes LLMs as dynamic systems that mirror the evolution of legal meaning. Legal language itself is not static. It evolves through “real-world interactions” and adapts to changing contexts over time.¹ Much like a complex system, the meaning of legal norms arises

¹ John H. Holland, *Emergence: From Chaos to Order* (Cambridge: Perseus Publishing, 1998), 32–34.

from the ongoing feedback between agents—judges, lawyers, legislators, and broader social factors—and the norms they produce. As complex adaptive systems, LLMs do not merely mimic the use of language; they participate in the process of generating meaning by reflecting the broader, “emergent structures” of legal systems. Their adaptive qualities reveal how legal interpretations evolve, adapt, and sometimes shift unpredictably, in much the same way that legal norms do. By capturing the complexity of legal language, “LLMs reflect the interactive and evolving nature of jurisprudence,” contributing to a richer understanding of how legal systems function in practice.

Taylor

The LLM has advantages over the designative, formal approach because it harmonizes better with the natural sciences (which includes computer science), and it also offers a robust framework for developing more sophisticated theory of legal interpretation.

To support this thesis, the essay:

1. Explains naturalized legal philosophy;
2. Examines the traditional “designative” understanding of language;
3. Considers the alternative philosophical perspective on language known as a “constitutive” approach to linguistic meaning and interpretation, which the LLMs closely resemble;
4. Explores the implications of this shift for legal philosophy, particularly in naturalizing our understanding of legal reasoning; and
5. Describes how embracing a constitutive view of language can inform the development of more nuanced and effective legal AI systems.

By reconsidering our approach to language and meaning in legal interpretation, we can not only enhance our theoretical understanding of law but also guide the development of AI systems that more accurately reflect the dynamic and interpretive nature of legal practice.

I. THE NATURALIZED THEORY OF JURISPRUDENCE

A. QUINE’S NATURALISM AND LEGAL REASONING

The early twentieth century forms the context in which contemporary jurisprudence was formed. It was shaped by deeply contested debates about the nature of logic, mathematics, modeling behavior, and social structure. The discourse in these areas was spawned by questions raised in mathematics, logic, and the natural sciences. For example, the logician, Kurt Gödel, argued that logical systems cannot have comprehensive logical foundations, similarly Albert Einstein questions foundational points in physical space, and Neils Bohr’s quantum mechanics challenged everyday perceptions of physical reality. In this context, philosophers questioned the nature of philosophy itself, and took a variety of positions on what it means to call oneself a philosopher. Language, which is the substance of philosophy, is at the center of these investigation, which continue today as scientific investigations of language have made great strides in fields like computational linguistics, neuroscience, and artificial intelligence. For these reasons, it is useful here to consider how these questions about the relationship between philosophy and science

influenced legal philosophy in the twentieth century, and how that influence played out in legal technology.

An important moment in the attempt to harmonize philosophy with the natural science took place in the context of a disagreement about the nature of language between Rudolf Carnap and Willard Quine. This was a pivotal interaction that reshaped science and the nature of philosophical inquiry itself, leading to Quine's argument for naturalism in epistemology (Quine ____). Carnap was a central figure in a movement associated with a group of philosophers known as the Vienna Circle. The movement was called logical positivism, and it sought to align philosophy more closely with the mathematical rigor and empirical grounding of natural sciences. Carnap had several claims, known as the "verification principle," the "analytic-synthetic distinction," and a belief in the unity of science. The verification principle asserts that the meaning of a statement is identical to its method of verification. In essence, for a statement to be meaningful, there must be some way, at least in principle, to empirically verify its truth or falsity. The analytic-synthetic distinction, meanwhile, separates statements into two categories: analytic statements, true by virtue of the meanings of their terms ("all unmarried men are bachelors" was Kant's example), and synthetic statements, which make claims about the world that can be empirically verified ("Robins have red breasts"). This is more than a categorization of sentences. It reflects an epistemological claim (about what can be known and how). Finally, the unity of science posits that all scientific knowledge could, in principle, be reduced to a common language of observation and logic. For example, biology might be reduced to chemistry, and chemistry to physics.

Carnap's work focused on developing formal logical systems to clarify scientific concepts and theories. He believed that philosophical analysis could uncover the logical structure underlying scientific theories through a process he called "rational reconstruction." Central to Carnap's philosophy was the analytic-synthetic distinction, which he saw as offering a clear demarcation between truths of language and logic, and their empirical verification. It was against this backdrop that Quine launched his critique, most famously articulated in his paper "Two Dogmas of Empiricism" (1951).² Quine's critique was not a minor disagreement but a fundamental shift in thinking about knowledge and science. He challenged the foundations of logical positivism, particularly the analytic-synthetic distinction, arguing that the line between statements true by virtue of meaning and those true by virtue of empirical fact is far blurrier than logical positivists had assumed. This challenge struck at the heart of how we understand the relationship between language, logic, and the world. But Quine did not stop there. He proposed a holistic view of knowledge, suggesting that our beliefs form an interconnected web where all statements, even those of logic and mathematics, are potentially revisable in light of new evidence. This holism stands in stark contrast to the reductionism of logical positivism, which sought to tie each meaningful statement to specific sensory experiences. Perhaps most radically, Quine proposed a naturalized epistemology. While Carnap sought to provide a logical foundation for science, Quine argued that epistemology itself should be seen as part of science. Questions about how we know what we know, he contended, are empirical questions best addressed through psychology and cognitive science rather than a priori philosophical reasoning.

The implications of Quine's naturalistic turn are profound and far-reaching. By dissolving the boundary between philosophy and science, he suggests there is no "first philosophy" standing apart from scientific inquiry. Instead, philosophy operates as a particularly abstract and general part of our overall scientific enterprise. Unlike Carnap's philosophy, which retained a normative element by prescribing how science should be done, Quine's naturalism is descriptive, aiming to

² W.V.O. Quine, "Two Dogmas of Empiricism," *The Philosophical Review* 60, no. 1 (1951): 20–43.

understand how science and knowledge acquisition actually work, without imposing external standards. This shift leaves us with a picture of knowledge as fallible, interconnected, and continuously evolving. No part of our knowledge, not even the supposedly analytic truths of logic, is immune to revision. If we accept Quine's view, we need to reconsider not just epistemology, but also our understanding of logic, mathematics, and the nature of philosophical inquiry itself.

Quine's critique pushed philosophy in new directions, opening up novel questions and areas of inquiry. Today, naturalism remains a powerful force in philosophy, influencing our thinking on everything from the nature of mind to the foundations of ethics. The core tenet of Quine's naturalism, that philosophical inquiry should be continuous with scientific investigation, continues to shape contemporary philosophical debates. This naturalistic turn invites us to reconsider fundamental questions: What is the relationship between philosophy and science? How should we understand the nature of knowledge and justification? Can philosophical problems be addressed through empirical methods? As we grapple with these questions, we're engaging in a tradition of inquiry that Quine's work has profoundly shaped, continuing to push the boundaries of what philosophy can be and do in the twenty-first century. The legacy of Quine's naturalism extends far beyond its historical context. It challenges us to constantly reassess our philosophical methods and assumptions, to remain open to the insights of empirical science, and to view philosophical problems not as isolated puzzles but as part of a broader tapestry of human knowledge. As we continue to navigate the complex landscape of contemporary philosophy, Quine's naturalism serves as both a guide and a challenge, reminding us of the deep interconnections between our conceptual frameworks and our empirical understanding of the world.

B. LEITER'S NATURALISM IN LEGAL PHILOSOPHY

Brian Leiter's application of naturalism to legal philosophy represents a significant shift in how we approach fundamental questions about law and legal systems. He seeks to ground legal theory in empirical methods and reject purely conceptual or armchair speculation that has been characteristic of legal philosophy. His approach is inspired by Quine and Nietzsche. For him, legal realism was an early attempt to align legal theory with the empirical, naturalistic perspective. Similar to Quine, Leiter rejects the notion of a "first philosophy" that could ground all knowledge through pure reason. Just as Quine suggested we should understand philosophy as part of a common project with natural science, Leiter proposes that we should view law as a natural phenomenon that emerges from human psychological and social practices and can be empirically studied.

This approach represents a significant departure from traditional methods in legal philosophy, particularly the reliance on conceptual analysis prevalent among Anglophone legal philosophers. Historically, these philosophers have sought to define terms like "law" or "legal validity" by examining linguistic usage and implicit assumptions. However, Leiter, drawing on Quine, critiques this method, viewing such analyses as insufficient for resolving many foundational debates in legal philosophy. He advocates for a naturalistic approach, emphasizing that understanding legal systems requires empirical inquiry into how they function in practice. This perspective aligns with Quine's broader rejection of the analytic-synthetic distinction and insistence on grounding philosophical questions in empirical methods. For example, in the debate over legal interpretation, traditional approaches often focus on abstract questions about meaning

or judicial roles. Leiter, in contrast, suggests examining empirical data on how judges actually decide cases, incorporating insights from psychology, sociology, and other social sciences.³

For example, in the landmark case of *Riggs v. Palmer* (1889)⁴ (one of Dworkin's so-called "hard cases")⁵ a grandson who murdered his grandfather sought to inherit under the grandfather's will. The court had to decide whether to apply the literal terms of the statute, which would have permitted the inheritance, or to invoke broader principles of equity to prevent the grandson from profiting from his crime. According to Leiter, a naturalistic approach to this case would eschew abstract conceptual analysis of "law" and "equity" in favor of an empirical investigation into the social and psychological factors influencing judicial decision-making. This would include examining the historical context of the case, the institutional norms that shape judicial behavior, and the likely social consequences of different interpretive outcomes.⁶ Such an approach might also explore patterns in judicial reasoning, the role of judges' social and political backgrounds, and even empirical insights from cognitive science about legal decision-making processes.⁷ Leiter's naturalism further rejects the idea that substantive conclusions about law can be derived purely from a priori reasoning or conceptual analysis, in line with Quine's critique of the analytic-synthetic distinction and skepticism toward a priori knowledge.³ Even ostensibly analytic legal concepts, such as "causation" in tort law, must be understood through their empirical operation in practice. For instance, traditional legal philosophy might define causation abstractly, but Leiter insists on analyzing how causation operates within specific legal contexts.⁸ The evolution of causation doctrines in toxic tort cases, such as *Sindell v. Abbott Laboratories* (1980) (where the court devised the novel concept of "market share liability") demonstrates how legal concepts adapt in response to empirical realities and changing social needs.⁹

One of the most exciting aspects of Leiter's approach is how it opens up new avenues for interdisciplinary work. Leiter encourages legal philosophers to engage more deeply with empirical research in psychology, sociology, and other relevant fields. He suggests that progress in legal philosophy might come not just from more refined conceptual analysis, but from a richer understanding of the empirical realities of legal systems and the societies in which they operate. Leiter's naturalism invites legal philosophers to explore of research in computational linguistic and attempts to mimic legal interpretation to discern what empirical evidence might be useful for legal philosophy, and in turn, how legal philosophy might be useful to these new fields of science.

³ Brian Leiter, *Naturalizing Jurisprudence: Essays on American Legal Realism and Naturalism in Legal Philosophy* (Oxford: Oxford University Press, 2007); Brian Leiter, "Beyond the Hart/Dworkin Debate: The Methodology Problem in Jurisprudence," *American Journal of Jurisprudence* 48 (2003): 17–51; Brian Leiter, "The Demarcation Problem in Jurisprudence: A New Case for Skepticism," *Oxford Journal of Legal Studies* 32 (2012): 1–21.

⁴ *Riggs v. Palmer*, 115 N.Y. 506 (N.Y. 1889).

⁵ Ronald Dworkin, "Hard Cases," in *Taking Rights Seriously* (Cambridge, MA: Harvard University Press, 1977), 81–130.

⁶ Brian Leiter, "Beyond the Hart/Dworkin Debate: The Methodology Problem in Jurisprudence," *American Journal of Jurisprudence* 48 (2003): 19–21.

⁷ Leiter, "The Demarcation Problem" at 2–4.

⁸ Brian Leiter, *Naturalizing Jurisprudence*, 61–67.

⁹ *Sindell v. Abbott Laboratories*, 26 Cal. 3d 588 (1980); Leiter, *Naturalizing Jurisprudence*, 101–105.

II. THE DESIGNATIVE THEORY OF LANGUAGE

Within the context of naturalized philosophy, Charles Taylor's analysis of designative and constitutive approaches to language offers a valuable framework for understanding the complexities and implications of the naturalistic turn. Taylor's work, particularly as articulated in *The Language Animal* (2016), provides a nuanced perspective on the relationship between language, thought, and reality that both challenges and potentially enriches naturalized approaches.⁴ Taylor's distinction between designative theories (which view language primarily as a tool for labeling pre-existing objects and ideas) and constitutive theories (which see language as actively shaping our understanding and experience of reality) offers a sophisticated lens through which to examine the assumptions and implications of naturalized philosophy. This framework raises important questions about how language relates to the world, how meaning is constructed, and how these processes can be studied empirically. Taylor invites us to investigate the potential for a more nuanced empiricism that recognizes both the designative and constitutive aspects of language. It also suggests the possibility of bridging gaps between naturalized philosophy as Quine and Leiter describe it and other philosophical traditions, potentially leading to a more comprehensive understanding of language and meaning. It not only sheds light on the strengths and limitations of naturalized approaches but also points towards new directions for philosophical investigation that integrates empirical rigor with sensitivity to the complex, constitutive role of language in human understanding and experience.

Taylor's framework addresses some of the challenges faced by naturalized philosophy, such as accounting for the normative dimensions of language and thought, explaining the apparent irreducibility of certain phenomenal experiences, and reconciling scientific realism with linguistic and conceptual relativity. The intersection of Taylor's linguistic theories with naturalized philosophy opens up exciting avenues for inquiry. It challenges us to reconsider fundamental questions about the nature of meaning, the relationship between language and reality, and the methods by which we can investigate these issues. By bringing together the empirical orientation of naturalized philosophy with Taylor's nuanced understanding of language's role in shaping human experience, we may find new ways to bridge the gap between scientific investigation and the rich, complex world of human meaning-making.

1. Designation, Language and Meaning

Taylor identifies two influential traditions in linguistic theory: the "designative" and the "constitutive" approaches. The designative tradition, which has earlier origins, views words and linguistic expressions as labels or tags that correspond directly to specific ideas, objects, or states of affairs in the world. This theory posits a mechanical relationship between language and reality, wherein words serve primarily to designate preexisting mental concepts or external entities. Language is seen as a transparent medium for conveying thoughts, with meaning understood as fixed and determinate. This approach aligns with classical theories of reference and was foundational to fields like formal logic and early artificial intelligence, which sought to model linguistic meaning computationally. It can be traced back to John Locke's *Essay Concerning Human Understanding*, in which language is presented as a system of signs that designate ideas in the mind.¹⁰ In the twentieth century, the designative approach was advanced by Gottlob Frege in

¹⁰ John Locke, *An Essay Concerning Human Understanding* (London: Printed for Tho. Basset, 1690), bk. 3.

his work on sense and reference,¹¹ Bertrand Russell in his theory of descriptions,¹² and the early Ludwig Wittgenstein in *Tractatus Logico-Philosophicus*, which proposed a picture theory of meaning.¹³ This tradition also inspired the Logical Positivists, such as Rudolf Carnap.¹⁴ While initially embraced by thinkers like Willard Quine,¹⁵ both Quine and Wittgenstein later offered critiques of the designative view, moving toward more dynamic understandings of language.¹⁶

The designative theory of language is both intuitively appealing and philosophically problematic.¹⁷ This theory, rooted in classical and early modern thought, posits language as a system of representation where words function primarily as labels for objects or states of affairs in the world.¹⁸ The designative theory rests on a correspondence theory of meaning, suggesting a direct and stable relationship between words and their referents.¹⁹ This framework treats language as a neutral medium, a mere tool for conveying information about an objective reality. However, this conception raises significant philosophical puzzles. How can we account for the apparent gap between linguistic representations and the qualia of conscious experience? The hard problem of consciousness seems to resist such a simplistic mapping of words to world.²⁰ Proponents of the designative view, including early analytic philosophers like Frege and Russell, emphasized the logical structure of language and its capacity to represent facts clearly and unambiguously.²¹ This approach found application in early artificial intelligence and computational linguistics, where language was modeled as a set of symbols with fixed meanings.²² Yet, these models struggled to capture the nuanced, context-dependent nature of natural language use, pointing to deeper issues with the designative framework.

The designative theory's emphasis on fixed and determinate meaning aligns with a classical view of concepts as having necessary and sufficient conditions.²³ However, this view faces challenges from cognitive science and the philosophy of mind. The fuzzy boundaries of natural concepts and the apparent impossibility of reducing all meaningful statements to logical atoms suggest that meaning is not as stable or objective as the designative theory implies.²⁴ Taylor's critique of the designative view resonates with broader challenges to representationalist

¹¹ Gottlob Frege, "On Sense and Reference," in *Philosophical Writings of Gottlob Frege*, ed. Peter Geach and Max Black (Oxford: Basil Blackwell, 1960), 56–78.

¹² Bertrand Russell, "On Denoting," *Mind* 14, no. 4 (1905): 479–493.

¹³ Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trans. C. K. Ogden (London: Kegan Paul, Trench, Trubner, 1922).

¹⁴ Rudolf Carnap, *Logical Syntax of Language*, trans. A. Smeaton (London: Kegan Paul, 1937).

¹⁵ W.V.O. Quine, *Word and Object* (Cambridge, MA: MIT Press, 1960).

¹⁶ Ludwig Wittgenstein, *Philosophical Investigations*, trans. G.E.M. Anscombe (Oxford: Basil Blackwell, 1953).

¹⁷ Charles Taylor, *Human Agency and Language: Philosophical Papers 1* (Cambridge: Cambridge University Press, 1985), 215–247.

¹⁸ John Locke, *An Essay Concerning Human Understanding*, ed. Peter H. Nidditch (Oxford: Clarendon Press, 1975), Book III.

¹⁹ Bertrand Russell, "On Denoting," *Mind* 14, no. 56 (1905): 479–493.

²⁰ David J. Chalmers, *The Conscious Mind: In Search of a Fundamental Theory* (Oxford: Oxford University Press, 1996), 3–31.

²¹ Gottlob Frege, "Über Sinn und Bedeutung," *Zeitschrift für Philosophie und philosophische Kritik* 100 (1892): 25–50.

²² Terry Winograd, *Understanding Natural Language* (New York: Academic Press, 1972).

²³ Jerry A. Fodor, *Concepts: Where Cognitive Science Went Wrong* (Oxford: Clarendon Press, 1998).

²⁴ Eleanor Rosch, "Principles of Categorization," in *Cognition and Categorization*, eds. Eleanor Rosch and Barbara B. Lloyd (Hillsdale, NJ: Lawrence Erlbaum Associates, 1978), 27–48.

theories of mind and language.²⁵ If we take seriously the idea that consciousness and meaning are fundamentally intertwined, then a purely designative account of language seems inadequate. Instead, we might consider a more dynamic, enactive approach where language not only represents but also constitutes aspects of our experienced reality.²⁶

III. CONSTITUTIVE THEORY

The constitutive view sees language as fundamentally world-shaping and meaning-creating, rather than merely representational. From this perspective, language is not simply a tool for labeling preexisting realities but an active force that constitutes our understanding of the world, ourselves, and our social practices. Words and expressions acquire their meaning through their use in complex webs of cultural, historical, and social contexts, rather than through fixed designations. This approach emphasizes the dynamic, evolving nature of linguistic meaning, viewing language as inseparable from human experience and cultural practices. Language does not merely describe reality; it creates and structures our experience of it, shaping perceptions, thoughts, and the categories through which we understand the world. This view is closely associated with phenomenology, particularly the work of Maurice Merleau-Ponty,²⁷ Martin Heidegger,²⁸ Hubert Dreyfus,²⁹ and Charles Taylor.³⁰ It is also evident in the later work of Ludwig Wittgenstein, especially *Philosophical Investigations*³¹ and *The Blue and Brown Books*.³² Similarly, Willard Quine's critique of Carnap reflects a move toward this constitutive understanding of language.³³ Both the designative and constitutive views are present in computational law: the designative approach underpins early algorithmic interpretations of language and most probabilistic models, while the constitutive view offers a framework for understanding how legal concepts evolve and interact with human practices.

Taylor's approach challenges the traditional designative views of linguistic meaning. He posits that language does not merely serve as a tool for describing the world; rather, it actively shapes and constitutes human experience. This conception of language is central to his broader philosophical project, which seeks to understand human beings as deeply embedded in social and cultural contexts. Taylor's view of language contrasts sharply with more representational or designative theories, which treat language as a system of signs that correspond to preexisting objects or facts in the world. Taylor's theory can be understood through several key concepts: the constitutive role of language, the dialogical nature of linguistic meaning, and the embedding of language in human practices. Together, these concepts provide a rich account of how language operates not only as a medium of communication but as a fundamental part of human identity, agency, and social reality.

²⁵ Francisco J. Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge, MA: MIT Press, 1991).

²⁶ Alva Noë, *Action in Perception* (Cambridge, MA: MIT Press, 2004).

²⁷ Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Donald A. Landes (London: Routledge, 2012).

²⁸ Martin Heidegger, *Being and Time*, trans. John Macquarrie and Edward Robinson (New York: Harper & Row, 1962).

²⁹ Hubert Dreyfus, *What Computers Still Can't Do: A Critique of Artificial Reason* (Cambridge, MA: MIT Press, 1992).

³⁰ Charles Taylor, *The Language Animal*.

³¹ Ludwig Wittgenstein, *Philosophical Investigations*, trans. G. E. M. Anscombe (Oxford: Basil Blackwell, 1953).

³² Ludwig Wittgenstein, *The Blue and Brown Books* (Oxford: Basil Blackwell, 1958).

³³ W.V.O. Quine, *Word and Object* (Cambridge, MA: MIT Press, 1960).

1. Language as Constitutive of Human Experience

At the heart of Charles Taylor's theory is the idea that language is constitutive, not merely representational. Representational theories understand language as functioning primarily by designating or naming objects in the world; for example, the word "tree" is seen as a label for a specific object in nature. Taylor rejects this view as overly simplistic. Instead, he argues that language actively shapes how we experience the world. In his view, language does not merely describe an independently existing reality but creates the framework through which we understand and engage with that reality.³⁴ This means that the meanings we ascribe to our experiences—whether legal, moral, or social—are inextricably linked to the linguistic practices we participate in.³⁵ Concepts such as "justice," "freedom," or "rights" are not merely labels for preexisting ideas but are constituted through the language we use to discuss and debate them.³⁶ Taylor's view aligns with aspects of hermeneutic and phenomenological traditions, which emphasize that understanding and interpretation are central to human existence.³⁷ Language, in Taylor's view, is a medium through which humans interpret their world, constructing their social and moral realities in the process.³⁸ The idea of constitutive language underscores that linguistic practices do not merely mirror the world; they actively shape the contours of human experience and the structures of social reality.³⁹

2. The Dialogical Nature of Language

Another crucial aspect of Charles Taylor's theory is the dialogical nature of language. He argues that linguistic meaning is not produced in isolation by individuals; rather, it emerges through dialogue and interaction within a community. Language, according to Taylor, is essentially a social practice.⁴⁰ It is through communication with others that meaning is developed, refined, and shared.⁴¹ This view stands in contrast to monological theories of language, which posit that meaning originates from individual speakers and their internal mental states. For Taylor, language is inherently relational: it arises out of social interactions and can only be fully understood in a communal context.⁴² The meanings of words, concepts, and symbols are shaped by the collective practices of the community, embedding linguistic meaning within a social matrix.⁴³ In legal terms, this implies that the interpretation of laws and legal texts is not a solitary endeavor but an inherently collaborative and context-sensitive process.⁴⁴ Judges, lawyers, legislators, and citizens engage in an ongoing dialogue about what legal terms mean and how they should be applied in specific

³⁴ Charles Taylor, *The Language Animal* at 3–10.

³⁵ *Ibid.*, 15–20.

³⁶ Charles Taylor, *Sources of the Self: The Making of the Modern Identity* (Cambridge, MA: Harvard University Press, 1989), 31–34.

³⁷ Hans-Georg Gadamer, *Truth and Method*, trans. Joel Weinsheimer and Donald G. Marshall (London: Bloomsbury Academic, 2013), 305–310.

³⁸ Maurice Merleau-Ponty, *Phenomenology of Perception*, at xiv–xvii.

³⁹ Martin Heidegger, *Being and Time*, at 191–196.

⁴⁰ Charles Taylor, *The Language Animal* at 17–22.

⁴¹ *Ibid.*, 30–35.

⁴² *Ibid.*, 37–40.

⁴³ Hans-Georg Gadamer, *Truth and Method*, at 307–310.

⁴⁴ Charles Taylor, *Sources of the Self*, at 55–60.

contexts. Taylor’s dialogical theory helps explain why legal meaning is contingent and evolves over time, as it is shaped by the continuous interaction among various actors in the legal system.⁴⁵

3. Language Embedded in Practices

Taylor’s conception of language is closely tied to the idea that language is embedded in practices. He emphasizes that linguistic meaning cannot be fully understood apart from the practices and institutions in which it is used.⁴⁶ For Taylor, language is not an abstract system of signs operating independently of human activities; it is deeply intertwined with the actions, rituals, and institutions that define human life.⁴⁷ For example, the meaning of legal concepts such as “rights” or “duties” cannot be separated from the broader legal and social practices in which they are invoked.⁴⁸ The ways in which legal actors (judges, lawyers, citizens) interpret and apply these concepts are shaped by the institutional frameworks within which they operate.⁴⁹ This is why Taylor rejects purely formalistic approaches to language, which attempt to analyze linguistic meaning through abstract, decontextualized rules or structures.⁵⁰ Instead, he insists that the social and practical context is essential for understanding how language functions. This perspective has significant implications for legal interpretation, suggesting that legal language should not be understood as a closed system of rules, detached from the social and institutional practices that give it life.⁵¹ Rather, legal language is situated within the broader practices of the legal system and is constantly being shaped by the activities of those who engage with it.⁵² This view aligns with common law traditions of legal interpretation, where meaning emerges through the ongoing practices of legal reasoning, precedent-setting, and judicial interpretation, rather than being derived from abstract legal principles.⁵³

4. Moral Frameworks and Strong Evaluations

In addition to his core ideas, Charles Taylor emphasizes that language plays a central role in shaping our moral frameworks. He argues that human beings engage in *strong evaluations*—judgments that go beyond mere preferences and involve deep, qualitative distinctions about what is valuable or meaningful in life.⁵⁴ These strong evaluations are articulated and sustained through language.⁵⁵ For Taylor, it is through language that we make sense of our moral intuitions and communicate our understanding of the good, the just, and the right.⁵⁶ Without language, these evaluations would remain inchoate or ineffable.⁵⁷ Thus, Taylor’s conception of language as constitutive also extends to the moral dimension of human life: language enables us to articulate

⁴⁵ Ibid., 65–70.

⁴⁶ Charles Taylor, *The Language Animal*, at 47–50.

⁴⁷ Ibid., 55–60.

⁴⁸ Ibid., 62–64.

⁴⁹ Charles Taylor, *Sources of the Self*, at 89–91.

⁵⁰ Hans-Georg Gadamer, *Truth and Method*, at 320–324.

⁵¹ Charles Taylor, *Philosophical Arguments* at 215–220.

⁵² Maurice Merleau-Ponty, *Phenomenology of Perception*, at xvii–xviii.

⁵³ A.W.B. Simpson, *Legal Reasoning and the Common Law* (Chicago: University of Chicago Press, 1973), 35–40.

⁵⁴ Charles Taylor, *Sources of the Self* at 4–6.

⁵⁵ Ibid., 14–16.

⁵⁶ Charles Taylor, *The Language Animal*, 102–104.

⁵⁷ Ibid., 110–112.

our moral outlooks and embed them within our social and cultural practices.⁵⁸ In legal contexts, this means that the moral reasoning underlying judicial decisions is not simply a matter of applying abstract principles to cases; it is a process of articulating moral evaluations deeply intertwined with the linguistic and cultural practices of the community.⁵⁹ Taylor's theory thus provides a framework for understanding how moral and ethical language is constitutive of legal reasoning, explaining why legal judgments often involve deep, value-laden interpretations that go beyond mere rule application.⁶⁰

5. Language, Identity, and Agency

Taylor's theory emphasizes the role of language in constituting identity and agency. According to Taylor, our sense of self and our ability to act in the world are deeply connected to the linguistic frameworks available to us.⁶¹ We come to understand who we are and what possibilities are open to us through the language we use to describe ourselves and our place in the world.⁶² This is particularly evident in legal systems, where individuals' rights, duties, and statuses are defined through legal language.⁶³ Concepts such as "citizenship," "liability," and "personhood" are not merely descriptive terms but are constitutive of legal identity, shaping the kinds of actions individuals can take within the legal system.⁶⁴ Taylor's theory highlights why legal language has the power to shape not only social realities but also individual identities and capacities for action.⁶⁵

This emphasis on language as constitutive of agency provides a framework for understanding why law, as a linguistic practice, is so central to the organization of social life. Through legal language, individuals are granted rights, responsibilities, and statuses that enable them to participate in society.⁶⁶ The law is not merely a set of external rules; it is a system of linguistic practices that constitutes the fabric of social and political life.⁶⁷ Taylor's conception of language offers a profound alternative to designative theories of meaning, proposing instead that language is a fundamental part of human experience, shaping not only how we understand the world but also how we engage with it.⁶⁸ His emphasis on the dialogical, context-sensitive, and practice-embedded nature of language provides a powerful framework for understanding how legal meaning is constituted.⁶⁹ As legal systems adapt to new challenges, such as the integration of General Artificial Intelligence (GAI) into judicial processes, Taylor's insights into the constitutive role of language become increasingly relevant.⁷⁰ His theory underscores the importance of viewing law as a dynamic, emergent system where meaning is not fixed but is constantly negotiated and reconstituted through linguistic practices. This perspective challenges us to approach legal interpretation, judicial reasoning, and the nature of law in more fluid, dynamic, and socially

⁵⁸ Hans-Georg Gadamer, *Truth and Method*, at 320–322.

⁵⁹ Charles Taylor, *Philosophical Arguments* (Cambridge, MA: Harvard University Press, 1995), 215–217.

⁶⁰ Ronald Dworkin, *Law's Empire* (Cambridge, MA: Belknap Press, 1986), 240–245

⁶¹ Charles Taylor, *Sources of the Self* at 25–27.

⁶² Charles Taylor, *The Language Animal* at 60–63.

⁶³ *Ibid.*, 75–77.

⁶⁴ Ronald Dworkin, *Law's Empire* at 225–229.

⁶⁵ Taylor, *The Language Animal*, at 80–85.

⁶⁶ Hans-Georg Gadamer, *Truth and Method*, at 312–315.

⁶⁷ Maurice Merleau-Ponty, *Phenomenology of Perception*, at xvii–xviii.

⁶⁸ Taylor, *Sources of the Self*, 31–34.

⁶⁹ Charles Taylor, *Philosophical Arguments*, at 215–220.

⁷⁰ Taylor, *The Language Animal*, 110–115.

embedded terms, which is essential for understanding how legal systems operate in complex, adaptive environments.⁷¹

C. LEITER'S NATURALISM AND THE DESIGNATIVE/CONSTITUTIVE DISTINCTION

1. Leiter's Naturalism and the Designative Tradition

Leiter's naturalism does not align fully with the designative tradition of language, but certain elements of his methodology resonate with aspects of it. The designative tradition views language as a representational system where words serve as labels corresponding to objects or concepts in the world.⁷² Leiter's project of grounding legal reasoning in empirical science—particularly psychology and sociology—shares with the designative tradition an emphasis on empirical verifiability. Leiter, drawing on Quine, rejects a priori knowledge and favors empirical methods to understand legal reasoning, aligning with the designative view's insistence on determinate and testable meaning.⁷³ However, Leiter does not embrace the notion that legal language functions as a simple mirroring system; instead, he focuses on understanding legal practices through the lens of human cognition and social behavior, which are shaped by but not reducible to linguistic representation.⁷⁴ His skepticism toward abstract conceptual analysis reflects his broader commitment to naturalism, but this does not entail a wholesale endorsement of the designative tradition's static or mechanical view of meaning.

He would likely view Taylor's constitutive theory as insightful, but unnecessarily complicating our understanding of language by claiming that language "constitutes" reality without grounding these claims in observable phenomena.⁷⁵ For Leiter, philosophical questions must be rooted in empirical science, and claims about language must be testable or measurable to have explanatory value.⁷⁶ Taylor's assertion that language creates meaning and experience would, in Leiter's view, require concrete evidence demonstrating the mechanisms by which this occurs, preferably through empirical research in psychology or neuroscience.⁷⁷ Consistent with Quine's rejection of the analytic-synthetic distinction, Leiter would suggest focusing on how language functions in practice—how it is deployed in legal reasoning and understood through observable human behavior—rather than positing speculative claims about language's role in constituting reality.⁷⁸ While Leiter shares Taylor's acknowledgment of the importance of practice, his emphasis on empirical rigor and scientific investigation underscores the distinction between their respective philosophical projects.

⁷¹ Leiter, *Naturalizing Jurisprudence*, 95–100.

⁷² Taylor, *The Language Animal* at 25–30.

⁷³ Leiter, *Naturalizing Jurisprudence* at 13–16; Quine, "Two Dogmas of Empiricism," at 20–43.

⁷⁴ Leiter, *Naturalizing Jurisprudence*, 51–54.

⁷⁵ Taylor, *The Language Animal*, 50–53.

⁷⁶ Brian Leiter, "Beyond the Hart/Dworkin Debate: The Methodology Problem in Jurisprudence," *American Journal of Jurisprudence* 48 (2003): 17–51.

⁷⁷ Leiter, *Naturalizing Jurisprudence*, 102–107.

⁷⁸ *Ibid.*, 60–65; Quine, "Two Dogmas of Empiricism," 33–36.

2. Leiter and Constitutive Theories

Leiter would likely be critical of applying Taylor’s constitutive view to legal interpretation. While Taylor argues that legal meanings are shaped by ongoing social, historical, and cultural processes, Leiter’s naturalistic perspective views such an approach as overly interpretive and potentially relativistic.⁷⁹ For Leiter, naturalism prioritizes the empirical study of how judges actually decide cases, using psychological and sociological data to analyze legal decision-making.⁸⁰ From this standpoint, a constitutive view of language risks detaching legal reasoning from an objective, scientifically grounded understanding, leading to unnecessary complexity.⁸¹ Leiter would contend that legal concepts such as “justice” or “equality” are best understood through examining their use in practice and the observable behavior of legal actors, rather than relying on abstract claims about how language constitutes human experience.⁸²

Leiter’s challenge to Taylor’s constitutive theory centers on the necessity of empirical grounding in any theory of language. While he might recognize the philosophical richness of Taylor’s approach, Leiter would argue that it lacks a scientifically verifiable method for understanding how language constitutes meaning.⁸³ In contrast, Leiter’s naturalism—aligned with Quine’s rejection of a priori reasoning—demands that accounts of language remain continuous with empirical methods, particularly those from cognitive science and psychology.⁸⁴ From this perspective, Taylor’s constitutive theory appears speculative, introducing claims about language’s role in shaping meaning that are too detached from the empirical study of how language is used and processed by human beings.⁸⁵ Leiter’s critique would call for a shift away from abstract philosophical speculation about language’s constitutive power and toward a scientifically grounded understanding of linguistic meaning, emphasizing observable behavior and cognitive processes in shaping legal and other forms of linguistic usage.

III. THE LANGUAGE THEORIES AND COMPUTATIONAL MODELS OF LEGAL REASONING

A. DESIGNATIVE THEORY AND AI

The designation theory of language has long held sway in Anglophone legal philosophy. It has supported legal formalism and legal positivism, where words are seen as stable reference points for clear legal concepts. The task of legal interpretation, under this model, involves applying determinate legal meanings to factual situations in a largely mechanical process.

⁷⁹ Taylor, *The Language Animal*, 50–54.

⁸⁰ Leiter, *Naturalizing Jurisprudence* 3–8.

⁸¹ *Ibid.*, 51–54.

⁸² Brian Leiter, “Beyond the Hart/Dworkin Debate.” 23–27.

⁸³ Taylor, *The Language Animal*, 112–115.

⁸⁴ W.V.O. Quine, “Two Dogmas of Empiricism,” 20–43; Leiter, *Naturalizing Jurisprudence*, 9–12.

⁸⁵ Leiter, *Naturalizing Jurisprudence*, 60–65.

1. Good Old-Fashioned AI

Early Good Old-Fashioned AI (GOFAI) models sought to map legal terms onto fixed meanings, using rule-based algorithms to mimic what was presumed to be legal reasoning.⁸⁶ These systems operated on the assumption that legal language, much like the logical systems upon which they were built, possessed stable and determinate meanings that could be consistently applied.⁸⁷ In specific, rule-bound contexts, such as contract law, GOFAI's designative approach performed reasonably well. However, as AI ventured into natural language processing and more complex areas of legal reasoning, the limitations of this rigid system became evident. Legal language rarely exhibits the determinacy that GOFAI or legal formalism assumes.⁸⁸ Terms like "reasonable" or "negligence" are subject to ongoing interpretation, evolving in response to shifting social, political, and moral considerations.⁸⁹ While GOFAI's rule-based logic proved useful in certain domains, it ultimately fell short in addressing the ambiguity and interpretative demands of legal language.⁹⁰

The limitations of GOFAI are particularly stark in areas requiring what H.L.A. Hart termed the "open texture" of law. Hart introduced this concept to highlight the inherent ambiguity in legal rules, especially in cases where the language of the law is indeterminate and no clear rule applies, leaving room for judicial discretion.⁹¹ These areas of law demand human judges to interpret vague or ambiguous legal texts in light of specific case circumstances.⁹² For example, in family law, cases involving child custody or divorce settlements often require judges to balance the best interests of the child with parental rights—factors that are not easily reducible to fixed rules.⁹³ AI systems, which operate primarily through predefined algorithms and statistical correlations, struggle to navigate these gray areas of law where moral and cultural judgments play a central role.⁹⁴ The challenge becomes even more acute in multilingual and multicultural legal contexts, where different legal traditions and linguistic nuances add layers of complexity.⁹⁵ In jurisdictions with multiple legal systems—such as those that incorporate both common law and civil law traditions—AI faces difficulties in interpreting legal terminology, as the same legal concept may carry distinct implications across traditions.⁹⁶ For instance, the concept of "good faith" in contract law has different connotations in a civil law jurisdiction like Germany compared to a common law jurisdiction like the United States.⁹⁷ Similarly, in international law, where treaties and agreements must be interpreted across diverse languages and legal cultures, AI confronts the formidable task of reconciling divergent legal meanings and cultural interpretations.⁹⁸ Legal language, therefore,

⁸⁶ Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach* (Upper Saddle River, NJ: Prentice Hall, 2010), 437–440.

⁸⁷ Ronald J. Allen and Eleanor Swift, *Evidence: Text, Problems, and Cases* (New York: Aspen Publishers, 2017), 67–70.

⁸⁸ Leiter, *Naturalizing Jurisprudence* 88–90.

⁸⁹ H.L.A. Hart, *The Concept of Law*, 3rd ed., ed. Leslie Green (Oxford: Oxford University Press, 2012), 124–130.

⁹⁰ Allen and Swift, *Evidence*, 45–47.

⁹¹ Hart, *The Concept of Law*, 124.

⁹² Brian Bix, *Law, Language, and Legal Determinacy* (Oxford: Oxford University Press, 1993), 28–31.

⁹³ Allen and Swift, *Evidence*, 59–62.

⁹⁴ Mireille Hildebrandt, *Law for Computer Scientists and Other Folk* (Oxford: Oxford University Press, 2020), 98–101.

⁹⁵ Anne Condello and Marco Di Nunzio, *Comparative Legal Linguistics: Language of Law, Latin, and Modern Lingua Francas* (Oxford: Hart Publishing, 2020), 89–91.

⁹⁶ Condello and Di Nunzio, *Comparative Legal Linguistics*, 101.

⁹⁷ Russell and Norvig, *Artificial Intelligence: A Modern Approach*, 441–443.

⁹⁸ David Franklin, *Law and AI: Challenges in the Interpretation of Meaning* (New York: Palgrave Macmillan, 2022), 59–62.

extends far beyond grammar and syntax; it contains layers of meaning tied to the social, historical, and moral contexts in which laws are created and applied—contexts that AI systems struggle to fully comprehend.⁹⁹

2. Machine Learning

As AI systems evolved beyond Good Old-Fashioned AI (GOF AI), machine learning (ML) and Bayesian models gained prominence. These models, which rely on probabilistic reasoning and statistical analysis, improved AI's ability to manage uncertainty in language compared to their rule-based predecessors¹⁰⁰ In legal technology, Bayesian models predict outcomes by identifying patterns in past cases, yet they often retain an underlying assumption akin to the designative model: that the meanings of legal terms are sufficiently stable to allow for statistical inference.¹⁰¹ However, legal interpretation involves more than pattern recognition. Legal terms do not map onto fixed meanings; instead, they evolve through social practices, judicial decisions, and cultural shifts.¹⁰² Bayesian models, which depend on historical data, frequently fail to capture the ways in which legal language is continually reinterpreted to meet new circumstances. Just as H.L.A. Hart's concept of the "open texture" of law highlights the inherent ambiguity in legal rules,¹⁰³ legal language itself is constantly negotiated and redefined—a reality that eludes the static assumptions of both rule-based and probabilistic AI models.

While Ronald Dworkin famously critiqued legal positivism for its reliance on fixed rules, his theory retains elements of the designative view of language.¹⁰⁴ In his Semantic Sting argument, Dworkin challenges the positivist claim that legal disagreements are purely linguistic, asserting instead that such disputes reflect deeper commitments to moral principles.¹⁰⁵ Yet, despite his emphasis on morality, Dworkin's reliance on stable moral principles implies that, once these underlying disputes are resolved, legal language can function determinately.¹⁰⁶ This perspective parallels the limitations of Bayesian models in AI. While such models accommodate ambiguity through probabilistic reasoning, they ultimately treat language use as a predictive system rather than a dynamic, evolving, and meaning-creating process.¹⁰⁷ Although Dworkin recognized that legal interpretation often requires judges to balance competing principles, weigh moral considerations, and interpret laws in response to social changes—all of which transcend the pattern recognition capabilities of current AI systems—his view of language retains a designative aspect, seeing words as fundamentally representative of concepts.¹⁰⁸

A designative theory of language struggles to resolve these issues. For example, in landmark cases such as *Brown v. Board of Education* and *Roe v. Wade*, the legal reasoning required more than simply applying precedent; it necessitated the creation of new moral judgments that reshaped societal norms.¹⁰⁹ AI, constrained by its reliance on past data and statistical

⁹⁹ Franklin, *Law and AI*, 63–66.

¹⁰⁰ Russell and Norvig, *Artificial Intelligence* 558–563.

¹⁰¹ Hildebrandt, *Law for Computer Scientists and Other Folk* 121–124.

¹⁰² Bix, *Law, Language, and Legal Determinacy*, 45–50.

¹⁰³ Hart, *The Concept of Law*, 124–129.

¹⁰⁴ Ronald Dworkin, *Law's Empire* (Cambridge, MA: Belknap Press, 1986), 14–17.

¹⁰⁵ *Ibid.*, 45–50.

¹⁰⁶ Leiter, "Beyond the Hart/Dworkin Debate" 26–30.

¹⁰⁷ Hildebrandt, *Law for Computer Scientists*, 131–133.

¹⁰⁸ Dworkin, *Law's Empire*, 245–248.

¹⁰⁹ *Brown v. Board of Education*, 347 U.S. 483 (1954); *Roe v. Wade*, 410 U.S. 113 (1973).

correlations, is inherently limited in making such transformative legal decisions.¹¹⁰ A prominent example of this limitation is the deployment of AI-driven tools in criminal justice, such as predictive policing algorithms or risk assessment systems like COMPAS.¹¹¹ COMPAS, designed to predict the likelihood of recidivism, has faced significant criticism for bias against minority populations.¹¹² While the algorithm processes data to predict future criminal behavior, it cannot account for broader social and historical contexts contributing to crime, nor can it engage creatively with the moral complexities of justice. Studies reveal that Black defendants are disproportionately labeled as high-risk, demonstrating that AI's reliance on historical data often perpetuates existing biases rather than producing objective and equitable outcomes.¹¹³ These examples underscore a critical issue: AI's computational efficiency is offset by its inability to engage with the deeper moral underpinnings of legal reasoning, such as fairness, justice, and equality.¹¹⁴ The challenge, therefore, lies in making legal interpretation computable while preserving its interpretive richness.¹¹⁵ Legal interpretation involves more than identifying relevant cases or statutes; it requires balancing explicit legal rules with implicit cultural and moral considerations.¹¹⁶ For example, constitutional law demands not just knowledge of precedent but also the creative balancing of values reflecting diverse and common goods.¹¹⁷ AI, which primarily identifies patterns in historical data, cannot easily generate the nuanced understanding required to address these moral and cultural dimensions.¹¹⁸

While AI systems have improved, especially in handling straightforward legal cases, the full automation of legal decision-making remains far from achievable.¹¹⁹ Cases involving conflicting legal principles or ethical dilemmas require human judgment. For instance, in bioethics and end-of-life decisions, determining whether to withdraw life support often involves competing values, such as respect for patient autonomy, considerations of medical ethics, and legal concerns regarding consent.¹²⁰ Even with advanced data-processing abilities, AI lacks the capacity to weigh these competing moral and ethical principles in the way human judges and practitioners can.¹²¹ The moral dimension of legal reasoning cannot be reduced to computable rules or algorithms, illustrating the inherent limitations of AI in interpretive legal tasks.¹²² Nonetheless, there is a strong imperative to develop AI systems for legal use. Improving the computability of legal interpretation is essential for the scalability and accessibility of legal services in an increasingly complex world.¹²³ Properly designed AI systems, attuned to the complexities of legal language and sensitive to human judgment, could enhance efficiency, reduce errors, and assist practitioners by automating routine tasks.¹²⁴ However, such systems must complement rather than replace human judgment,

¹¹⁰ Hildebrandt, *Law for Computer Scientists and Other Folk*, 112–115.

¹¹¹ Julia Angwin et al., “Machine Bias,” *ProPublica*, May 23, 2016, <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>

¹¹² *Ibid.*

¹¹³ Kristian Lum and William Isaac, “To Predict and Serve?,” *Significance* 13, no. 5 (2016): 14–19.

¹¹⁴ Bix, *Law, Language, and Legal Determinacy*, 75–78.

¹¹⁵ Ronald Dworkin, *Law's Empire* 239–242.

¹¹⁶ H.L.A. Hart, *The Concept of Law*, 124–127.

¹¹⁷ Dworkin, *Law's Empire*, 255–258

¹¹⁸ Hildebrandt, *Law for Computer Scientists*, 118–120.

¹¹⁹ Edward A. McCarty, “Reflections on AI in Legal Decision-Making,” *AI & Law Journal* 26, no. 2 (2018): 45–48.

¹²⁰ *Ibid.*, 50–53.

¹²¹ Amanda Davis, *Justice and Technology: AI in Legal Practice* (New York: Palgrave Macmillan, 2018), 91–94.

¹²² Davis, *Justice and Technology*, 98–100.

¹²³ McCarty, “Reflections on AI,” 58–60.

¹²⁴ Josh Nay, *The Future of Legal AI: Opportunities and Challenges* (London: Hart Publishing, 2022), 133–137.

ensuring that justice and fairness remain central to legal interpretation.¹²⁵ The alignment between human judgment and AI’s computational capabilities is critical to this goal.¹²⁶

C. THE CONSTITUTIVE THEORY AND LLMs

While large language models (LLMs) can generate language that mimics human legal reasoning, they do not participate in the social and moral practices that give language its power to shape meaning. As Charles Taylor argues, language is not merely a tool for representing the world but a constitutive force that helps construct our understanding of reality.¹²⁷ In legal contexts, judges and practitioners engage in this constructive process, interpreting and reshaping the meaning of legal terms in response to new social conditions.¹²⁸ LLMs cannot replicate this interpretive engagement. Instead, they generate text based on statistical correlations and neural network computations, lacking the capacity for the interpretive dialogue that gives legal language its full, evolving meaning.¹²⁹ LLMs challenge the fixed meanings associated with designation theories of language by generating text that is not tied to preexisting meanings but to patterns detected in vast data sets¹³⁰ In this way, LLMs align more closely with constitutive theories of language, which view it as a dynamic and evolving practice that actively shapes reality. However, LLMs fall short of the full constitutive view advocated by Taylor, as they cannot engage in the moral and social practices that underpin language’s constructive power.¹³¹

What is needed, therefore, is an integration of constitutive theory with the complexity theory that underlies LLMs. While LLMs cannot directly participate in the social practices that shape language, they model complex adaptive systems capable of mimicking the evolving patterns of language use.¹³² Complexity theory, which views systems as emergent and adaptive, offers a framework for understanding how legal language evolves through interaction and feedback loops.¹³³ From this perspective, meaning is not static; it emerges through the dynamic interplay between texts, interpreters, and contexts, much like the emergent patterns that LLMs detect in their training data.¹³⁴ By integrating constitutive theory with the adaptive flexibility of LLMs, we can develop a richer framework for understanding legal interpretation. LLMs can serve as powerful tools for navigating the complexity of legal language but must be complemented by human judgment—specifically, the capacity to engage in the moral and social reasoning that gives legal language its constitutive power.¹³⁵ While LLMs can reflect the patterns of legal discourse, only human interpreters can reshape those patterns in response to evolving social and moral conditions. The rise of LLMs challenges the traditional designation theory of language, revealing the limitations of treating legal language as a system of fixed meanings.¹³⁶ Although LLMs more closely reflect the constitutive nature of language than their predecessors, they still fall short of

¹²⁵ Hildebrandt, *Law for Computer Scientists*, 125–128.

¹²⁶ Nay, *The Future of Legal AI*, 140–145.

¹²⁷ Taylor, *The Language Animal*, 105–110.

¹²⁸ *Ibid.*, 112–115.

¹²⁹ Hildebrandt, *Law for Computer Scientists and Other Folk*, 78–81.

¹³⁰ Bix, *Law, Language, and Legal Determinacy*, 45–48.

¹³¹ Taylor, *The Language Animal*, 115–120.

¹³² Nay, *The Future of Legal AI: Opportunities and Challenges*, 90–94.

¹³³ McCarty, “Reflections on AI in Legal Decision-Making,” 38–42.

¹³⁴ Lum and Isaac, “To Predict and Serve?,” 14–19.

¹³⁵ Davis, *Justice and Technology: AI in Legal Practice*, 88–92.

¹³⁶ Dworkin, *Law’s Empire*, 239–242.

capturing the full depth of legal interpretation, which requires social engagement and moral reasoning. By integrating Taylor’s constitutive approach with the complexity theory underpinning LLMs, we can develop a more nuanced framework for understanding the evolution of legal language. LLMs can assist in navigating legal complexity but cannot replace the uniquely human capacity to construct and reinterpret meaning in response to new social realities.¹³⁷

III. COMPLEXITY THEORY AND COMPLEX SYSTEMS

Complexity science is a multidisciplinary field that seeks to understand systems composed of many interacting components, which collectively exhibit behaviors that are not easily predicted from the properties of individual parts.¹³⁸ Its roots lie in efforts to explain phenomena that traditional reductionist science—focused on breaking systems into simpler components—could not adequately address.¹³⁹ This shift in scientific inquiry gained momentum through fields such as cybernetics, systems theory, and chaos theory, which highlighted the limitations of reductionism in explaining phenomena like weather patterns, market dynamics, ecosystems, and brain activity.¹⁴⁰

One of the pivotal moments for complexity science came in 1984 with the establishment of the Santa Fe Institute. At this institution, a multidisciplinary group of scientists and mathematicians began investigating complex systems that required interdisciplinary approaches.¹⁴¹ This work gave rise to a new framework for understanding how large numbers of simple components, interacting through local rules, can produce emergent global behaviors without centralized control mechanisms.¹⁴² Complexity science now spans diverse disciplines, including biology, economics, sociology, and increasingly, law.¹⁴³ For example, in biology, complexity science explores how ecosystems maintain resilience through species interactions.¹⁴⁴ In economics, it models financial markets as self-organizing systems shaped by the behaviors of individuals.¹⁴⁵ Recently, legal scholars have applied complexity science to analyze legal systems, noting their similarities to Complex Adaptive Systems (CAS), such as decentralized decision-making, feedback loops, and emergent behaviors.¹⁴⁶

The key characteristics of complex systems include the following:

1. **Emergent behavior:** Global patterns and behaviors arise from simple local interactions. For instance, the collective intelligence of ant colonies is not dictated by individual ants but emerges from their localized actions.¹⁴⁷

¹³⁷ Taylor, *The Language Animal*, 125–128.

¹³⁸ Melanie Mitchell, *Complexity: A Guided Tour* (New York: Oxford University Press, 2009), 3–5.

¹³⁹ Holland, *Hidden Order*, 9–12.

¹⁴⁰ Bix, *Law, Language, and Legal Determinacy*,

Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature* (New York: Bantam Books, 1984), 48–52.

¹⁴¹ Murray Gell-Mann, “What is Complexity?” *Complexity* 1, no. 1 (1995): 16–19.

¹⁴² Mitchell, *Complexity: A Guided Tour*, 7–10.

¹⁴³ P. Vivo, D. M. Katz, and J. B. Ruhl, “CompLex: Legal Systems Through the Lens of Complexity Science,” *arXiv preprint arXiv:2410.01402* (2024): 1–4.

¹⁴⁴ Holland, *Hidden Order*, 21–23.

¹⁴⁵ Brian Arthur, *The Nature of Technology: What It Is and How It Evolves* (New York: Free Press, 2009), 25–28.

¹⁴⁶ Vivo, Katz, and Ruhl, “CompLex,” 5–7.

¹⁴⁷ Deborah M. Gordon, *Ant Encounters: Interaction Networks and Colony Behavior* (Princeton, NJ: Princeton University Press, 2010), 1–3.

2. **Self-organization:** Complex systems adapt and reorganize themselves without a central controlling agent in response to environmental changes, as seen in ecosystems or human societies.¹⁴⁸
3. **Nonlinearity:** Small changes in initial conditions can produce disproportionately large outcomes, a phenomenon known as “sensitive dependence on initial conditions,” which is central to chaos theory.¹⁴⁹
4. **Feedback loops:** These systems often include positive and negative feedback mechanisms that regulate behavior over time, such as those found in economies or legal institutions.¹⁵⁰

Complexity science has revolutionized our understanding of natural and artificial systems, offering a powerful lens for analyzing phenomena that elude traditional linear approaches. It emphasizes the significance of interactions, emergent behavior, and adaptability, providing critical tools for studying systems ranging from biological ecosystems to legal frameworks.¹⁵¹

A. OVERVIEW OF COMPLEXITY THEORY AND LEGAL INTERPRETATION

Complexity theory’s conceptualization of language as emergent and adaptive provides a striking parallel to Taylor’s constitutive-expressive theory. Since Taylor believes that language is not merely a vehicle for representation but a constitutive force that shapes both human identity and moral reasoning¹⁵² for him, language inseparable from the practices and contexts through which it is used, shaping our understanding of the world, ourselves, and our place within a broader social order.¹⁵³ Complexity theory complements Taylor’s analysis by rejecting static or reductive accounts of systems, emphasizing instead the emergent properties of interaction and adaptation.¹⁵⁴ Both Taylor’s framework and complexity theory challenge rule-bound, static conceptions of meaning, demonstrating that meaning arises from dynamic processes rather than preordained structures.

In legal contexts, this alignment is particularly illuminating. Judicial interpretation, like language itself, is not a mechanical application of rules but an emergent process shaped by the interplay of historical precedents, societal values, and judicial reasoning.¹⁵⁵ Law, like language, is a living system, continuously reconstituted as it is interpreted and applied to novel contexts.¹⁵⁶ For example, the evolving interpretations of constitutional principles, such as “equal protection” or “due process,” illustrate how legal meaning is shaped by the cultural, political, and moral conditions of particular eras.¹⁵⁷ This dynamism mirrors the self-organizing behavior observed in

¹⁴⁸ Mitchell, *Complexity: A Guided Tour*, 33–37.

¹⁴⁹ Edward Lorenz, *The Essence of Chaos* (Seattle: University of Washington Press, 1993), 8–12.

¹⁵⁰ Arthur, *The Nature of Technology*, 32–36.

¹⁵¹ Prigogine and Stengers, *Order Out of Chaos*, 80–85.

¹⁵² Taylor, *The Language Animal*, 56–60.

¹⁵³ *Ibid.*, 62–64.

¹⁵⁴ Holland, *Hidden Order*, 9–12.

¹⁵⁵ Bix, *Law, Language, and Legal Determinacy*, 212–215.

¹⁵⁶ *Ibid.* 220–222.

¹⁵⁷ Davis, *Justice and Technology: AI in Legal Practice*, 92–95.

complex systems, where order arises from local interactions rather than centralized control. Complexity theory thus provides a powerful conceptual framework for understanding the adaptive and emergent nature of legal systems, offering insights into their resilience and capacity for change.¹⁵⁸ The integration of complexity theory into legal interpretation also sharpens our understanding of the limitations inherent in artificial intelligence (AI). Complexity theory posits that systems exhibit emergent properties or patterns and behaviors that cannot be reduced to or predicted from their individual components.¹⁵⁹ This insight resonates deeply with the nature of law, which, like language or consciousness, transcends its constituent rules and elements. Legal meaning emerges unpredictably from the interaction of social norms, moral values, historical contingencies, and linguistic conventions, making it irreducible to any static framework.¹⁶⁰ As such, legal reasoning resists the kind of reductionism upon which AI systems, including large language models (LLMs), are built.

LLMs, while capable of generating language that mimics human reasoning, rely on patterns derived from vast datasets rather than the contextual and moral engagement that defines legal interpretation.¹⁶¹ These systems operate by identifying statistical correlations within text corpora, effectively simulating language without participating in the social and moral practices that give language its constructive power.¹⁶² Legal reasoning, however, often requires engagement with what H.L.A. Hart described as the “open texture” of law—cases where rules are indeterminate or incomplete and must be supplemented by moral discretion and contextual sensitivity.¹⁶³ For example, the term “reasonable” in negligence law demands an interpretive judgment that depends on the specific circumstances of each case, the values of the community, and broader cultural understandings.¹⁶⁴ This capacity for contextual interpretation, moral balancing, and cultural attunement exemplifies the emergent properties of legal reasoning, precisely the areas where AI systems falter.¹⁶⁵

A vivid illustration of this limitation is found in the criminal justice system’s use of predictive algorithms such as COMPAS. Designed to assess recidivism risk, COMPAS has been widely criticized for perpetuating systemic racial biases embedded in its training data.¹⁶⁶ Studies have shown that Black defendants are disproportionately labeled as high-risk compared to their white counterparts, even when controlling for other factors, revealing how AI’s reliance on historical data can entrench existing inequities.¹⁶⁷ This issue reflects a deeper failure to grapple with the moral and social dimensions of legal judgment. AI systems like COMPAS lack the capacity to interpret legal rules within broader ethical frameworks, reducing complex human realities to statistical abstractions. Moreover, the black-box nature of these systems obscures the underlying biases and value judgments encoded within their algorithms, complicating efforts to

¹⁵⁸ Vivo, Katz, and Ruhl, “CompLex” 5-7.

¹⁵⁹ *Ibid.*, 8-10.

¹⁶⁰ Bix, *Law, Language, and Legal Determinacy*, 212-215.

¹⁶¹ Julia Angwin et al., “Machine Bias,” <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>.

¹⁶² Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information* (Cambridge, MA: Harvard University Press, 2015), 29–31.

¹⁶³ H.L.A. Hart, *The Concept of Law*. Oxford: Clarendon Press, 1961. 124-129

¹⁶⁴ *Ibid.*

¹⁶⁵ Viov, Katz, and Ruhl, 5-7.

¹⁶⁶ Angwin et al., “Machine Bias”.

¹⁶⁷ *Ibid.*

ensure accountability and transparency.¹⁶⁸ Scholars have argued that such systems create a facade of objectivity, masking the inherently value-laden nature of legal decision-making.¹⁶⁹

Taylor's constitutive theory of language offers a critical lens for understanding these failures. According to Taylor, language is not merely a descriptive tool but a medium through which human identity, moral reasoning, and social reality are constructed.¹⁷⁰ In the legal domain, this means that concepts like "justice" or "fairness" are not static terms but are actively constituted through the practices and judgments of legal actors.¹⁷¹ Legal reasoning, in Taylor's view, is an emergent property of human social life, deeply embedded in cultural and moral contexts. This insight highlights the limitations of formalist approaches to legal reasoning, whether employed by human judges or AI systems.¹⁷² While AI may excel at addressing the "easy" problems of legal practice—such as document review or precedent identification—it cannot engage with the "hard" problems, which involve the interpretive, context-sensitive, and morally inflected dimensions of legal reasoning.¹⁷³

This distinction parallels David Chalmers' differentiation between the "easy" and "hard" problems of consciousness.¹⁷⁴ The easy problems involve explaining the functional mechanisms of cognition, such as information processing or neural activation, while the hard problem concerns the subjective experience of consciousness. Similarly, the easy problems of legal AI concern technical tasks that are relatively straightforward to automate. The hard problem, however, lies in replicating the emergent, adaptive, and contextually sensitive qualities of legal interpretation. Just as current AI systems fall short of explaining or replicating consciousness's qualitative aspects, they falter in capturing the richness and complexity of legal reasoning.¹⁷⁵

Complexity theory thus exposes a profound conceptual limitation in the current deployment of AI in legal contexts. The emergent properties of legal systems—where morality, culture, and social meaning intersect—resist formalization and defy reduction to static rules or algorithms.¹⁷⁶ As Taylor suggests, law is a constitutive system that shapes and reflects the social realities in which it operates.¹⁷⁷ It is a space where values are negotiated, identities are formed, and justice is continually reinterpreted in light of evolving social conditions.²⁸ While AI offers valuable tools for navigating certain technical aspects of legal practice, its inability to engage with the emergent, constitutive dimensions of law underscores the enduring importance of human judgment. The challenge moving forward is not merely to refine AI systems but to develop a deeper understanding of their limitations and to ensure that their integration into legal contexts complements, rather than supplants, the moral and interpretive capacities that define legal reasoning.¹⁷⁸

¹⁶⁸ Vivo, Katz, and Ruhl, "CompLex" 10–12.

¹⁶⁹ Kristian Lum and William Isaac, "To Predict and Serve?," *Significance* 13, no. 5 (2016): 14–19.

¹⁷⁰ Taylor, *Human Agency and Language*, 45–76.

¹⁷¹ Mireille Hildebrandt, *Law for Computer Scientists and Other Folk* (Oxford: Oxford University Press, 2020), 78–81. Taylor, *Sources of the Self* 25–51.

¹⁷² Taylor, *The Language Animal*, 240–265

¹⁷³ Taylor, *Philosophy and the Human Sciences* 15–57.

¹⁷⁴ David J. Chalmers, *The Conscious Mind: In Search of a Fundamental Theory* (New York: Oxford University Press, 1996), 201–203.

¹⁷⁵ *Ibid.*

¹⁷⁶ Jamie Murray, Thomas E. Webb, and Steven Wheatley, *Complexity Theory and Law* (New York: Taylor & Francis, 2024).

¹⁷⁷ Taylor, *The Language Animal* 240–265

¹⁷⁸ Jeffrey Davis, *Morality in Legal Interpretation: The Limits of AI* (Cham, Switzerland: Palgrave Macmillan, 2018).

B. UNDERSTANDING TAYLOR'S CONSTITUTIVE THEORY THROUGH COMPLEXITY THEORY

Leiter's naturalized legal philosophy provides a compelling foundation for aligning legal reasoning with empirical methods, suggesting that the study of law should be consistent with the methods of natural sciences.¹⁷⁹ Leiter, however, would likely argue against Taylor's constitutive theory of language, which posits that language is not merely a tool for describing pre-existing realities but is itself constitutive of human experience.¹⁸⁰ Leiter would view this claim as speculative, lacking the empirical grounding necessary to support it. He might assert that Taylor's theory overcomplicates the nature of language by suggesting it actively creates reality without providing a clear empirical basis for such claims.

In contrast, Leiter's naturalism emphasizes that language functions as a representational system where words are labels that correspond to concepts or objects in the world, and that legal reasoning should be grounded in observable phenomena.¹⁸¹ He might argue that the constitutive approach risks introducing unnecessary complexity into legal interpretation, potentially detaching legal reasoning from objective, empirically grounded understanding. From his perspective, Taylor's view might lead to overly interpretive or relativistic approaches, undermining the stability and predictability that are crucial for legal systems. Instead, Leiter would advocate for a focus on how language and legal concepts are used in practice, relying on empirical methods such as cognitive science and psychology to understand the processes of legal interpretation.¹⁸²

This formulation of a likely critique can be countered by demonstrating the limitations of a purely empirical, designative approach to language. Taylor's constitutive theory is supported by complexity theory and the computational linguistics that models language as a complex system. The development of offers a richer understanding of how language and legal interpretation function as dynamic, adaptive processes. Complexity theory shows that language and law, like other complex systems, evolve through interactions between their components, exhibiting emergent behaviors that cannot be fully captured by a static, designative framework. The meanings of legal concepts are not fixed; they change over time as they are used in different contexts and for different purposes. This emergent quality of language aligns closely with Taylor's view that language constitutes, rather than merely describes, reality.

The integration of Taylor's constitutive theory with complexity science suggests that the future of naturalized jurisprudence must move beyond the reductive tendencies of early naturalism. Instead, it should embrace the inherently adaptive, context-sensitive nature of both language and legal systems. AI models like LLMs, while capable of mimicking patterns in legal texts, ultimately require a deeper engagement with human interpretive practices to fulfill their potential in legal contexts. By situating AI within a framework that recognizes the constitutive and emergent qualities of language, we can envision a hybrid approach where AI serves not as a replacement but as an augmentative tool in the legal interpretive process.

The implications of this work are profound for both legal scholarship and computational law. For legal scholars, this approach challenges the prevailing paradigms of legal interpretation, urging a shift towards a model that incorporates both empirical methodologies and the rich, constitutive dimensions of human legal experience. By doing so, it not only deepens our theoretical understanding of law but also provides a more nuanced framework for engaging with the

¹⁷⁹ Leiter, *Naturalizing Jurisprudence*.

¹⁸⁰ Taylor, *The Language Animal*

¹⁸¹ Leiter, *Naturalizing Jurisprudence*.

¹⁸² *Ibid.*

complexities of legal reasoning in a technologically advanced society. This synthesis is particularly vital in an age where law must rapidly adapt to new technologies, social conditions, and cultural shifts, making interpretive flexibility and adaptability crucial for maintaining the relevance and integrity of legal systems.

In the domain of computational law, this work highlights the limitations of current AI technologies while pointing towards the need for developing systems that can better emulate the adaptive and emergent characteristics of human legal reasoning. Rather than viewing AI as an autonomous decision-maker, the proposed framework suggests envisioning AI as a collaborative partner that can support legal practitioners by providing data-driven insights while leaving space for human moral and contextual judgment. By integrating complexity science with AI models, computational law can develop tools that not only predict outcomes based on past data but also adapt to changing legal standards and values, thereby enhancing the efficacy and fairness of legal processes. Ultimately, the convergence of naturalized jurisprudence, constitutive theories of language, and complexity science offers a transformative path forward. It emphasizes that law, like language, is a living system, evolving through continuous interaction, adaptation, and reinterpretation. Embracing this dynamic perspective will allow both legal scholarship and computational law to develop in ways that honor the interpretive richness of human legal judgment while harnessing the computational power of AI to advance accessibility, efficiency, and justice in legal practice.

CONCLUSION: BRIDGING NATURALIZED JURISPRUDENCE AND COMPUTATIONAL LAW

This essay has sought to address the pressing challenge of reconciling AI's computational capabilities with the interpretive depth inherent in human legal reasoning. The evolution of AI models from GOFAI to large language models (LLMs) represents a significant leap in the ability to handle linguistic complexity, yet these models still lack the capacity to engage with the moral, social, and emergent aspects of language that are central to legal interpretation. The argument advanced here draws on Brian Leiter's naturalized jurisprudence and Taylor's constitutive theory of language, alongside insights from complexity theory, to propose a richer, more integrative framework for understanding and developing legal AI systems.

Naturalized legal philosophy, as articulated by Leiter, provides a compelling foundation for aligning legal reasoning with empirical methods, suggesting that the study of law should be consistent with the methods of natural sciences. However, the traditional naturalistic approach, with its emphasis on empirically verifiable, designative views of language, falls short in capturing the emergent, contextual, and interpretive nuances of legal meaning. Taylor's constitutive theory, which posits that language is not merely a tool for describing pre-existing realities but is itself constitutive of human experience, offers an alternative that embraces the complexities of language as a dynamic, adaptive system. Complexity theory further supports this by demonstrating how systems with numerous interacting components, like law and language, exhibit emergent behaviors that cannot be easily reduced to fixed rules or static interpretations. The integration of Taylor's constitutive theory with complexity science suggests that the future of naturalized jurisprudence must move beyond the reductive tendencies of early naturalism. Instead, it should embrace the inherently adaptive, context-sensitive nature of both language and legal systems. AI models like LLMs, while capable of mimicking patterns in legal texts, ultimately require a deeper engagement with human interpretive practices to fulfill their potential in legal contexts. By situating AI within a framework that recognizes the constitutive and emergent qualities of language, we can envision

a hybrid approach where AI serves not as a replacement but as an augmentative tool in the legal interpretive process.

The implications of this work are profound for both legal scholarship and computational law. For legal scholars, this approach challenges the prevailing paradigms of legal interpretation, urging a shift towards a model that incorporates both empirical methodologies and the rich, constitutive dimensions of human legal experience. By doing so, it not only deepens our theoretical understanding of law but also provides a more nuanced framework for engaging with the complexities of legal reasoning in a technologically advanced society. This synthesis is particularly vital in an age where law must rapidly adapt to new technologies, social conditions, and cultural shifts, making interpretive flexibility and adaptability crucial for maintaining the relevance and integrity of legal systems. In the domain of computational law, this work highlights the limitations of current AI technologies while pointing towards the need for developing systems that can better emulate the adaptive and emergent characteristics of human legal reasoning. Rather than viewing AI as an autonomous decision-maker, the proposed framework suggests envisioning AI as a collaborative partner that can support legal practitioners by providing data-driven insights while leaving space for human moral and contextual judgment. By integrating complexity science with AI models, computational law can develop tools that not only predict outcomes based on past data but also adapt to changing legal standards and values, thereby enhancing the efficacy and fairness of legal processes.

Ultimately, the convergence of naturalized jurisprudence, constitutive theories of language, and complexity science offers a transformative path forward. It emphasizes that law, like language, is a living system—one that evolves through continuous interaction, adaptation, and reinterpretation. Embracing this dynamic perspective will allow both legal scholarship and computational law to develop in ways that honor the interpretive richness of human legal judgment while harnessing the computational power of AI to advance accessibility, efficiency, and justice in legal practice.

APPENDIX

AN ANALYSIS OF THE METAPHYSICS OF TAYLOR AND COMPLEX SYSTEMS THEORY

INTRODUCTION

I. THE PUZZLE OF TAYLOR'S CONSTITUTIVE THEORY

As we examine Taylor's constitutive theory of language and its reinterpretation through complex systems theory, we will see how Quine's analytical approach provides a valuable framework for evaluating and refining these ideas. This introduction sets the stage for our expanded analysis by highlighting the key aspects of Quine's method that will be relevant to our discussion of Taylor's theory as supported by complex systems. It provides context for why we're considering ontological parsimony, empirical grounding, and logical formalization in our analysis.

A. QUINE'S METAPHYSICAL METHOD

Quine's method of metaphysical analysis represents a powerful approach to philosophical inquiry, one that has profoundly shaped contemporary analytic philosophy.¹⁸³ At its core, Quine's method embodies a commitment to naturalism and empiricism, coupled with a rigorous approach to logical analysis. Let's break this down into its key components:

1. **Ontological Parsimony:** Quine advocated for what he called "ontological desert landscapes." This principle, often referred to as Occam's Razor, suggests that we should not multiply entities beyond necessity. In other words, Quine urged philosophers to be frugal in their ontological commitments, positing only those entities that are indispensable to our best scientific theories.
2. **Naturalism:** Quine argued that philosophy should be continuous with natural science. He rejected the idea of a "first philosophy" that could justify scientific knowledge from outside. Instead, he viewed philosophy as operating within the framework of our best scientific understanding of the world.
3. **Holism:** Quine famously argued for the "web of belief" model, suggesting that our beliefs form an interconnected network. No single belief can be tested in isolation; rather, we face the tribunal of experience as a whole body of theory.
4. **Skepticism of the Analytic-Synthetic Distinction:** Quine challenged the traditional distinction between analytic truths (true by virtue of meaning alone) and synthetic truths

¹⁸³ Willard Quine, "On What There Is," *Review of Metaphysics*, 2(5): 21-38 (1980), For an introduction to Quine's method, see Alyssa Ney, *Metaphysics, An Introduction* (London, UK: Routledge, 2023) 35-51.

(true by virtue of how the world is). This skepticism had far-reaching implications for philosophy of language and epistemology.

5. Logical Regimentation: Quine advocated for the use of first order logic as a tool for clarifying philosophical claims. By translating natural language statements into logical notation, he believed we could better analyze their structure and implications.

To illustrate Quine's method, consider a thought experiment:

Imagine two philosophers debating the existence of abstract objects like numbers. A Quinean analysis would urge us to ask: Are abstract objects indispensable to our best scientific theories? If so, we might be justified in including them in our ontology. If not, we should seek more parsimonious explanations.

Quine's method challenges us to ground our philosophical inquiries in empirical reality, to be cautious about our ontological commitments, and to use the tools of logic to clarify our thinking.

1. Regimenting Taylor

Taylor's constitutive theory of language presents us with an intriguing puzzle: How can language, a tool we seemingly use to describe the world, actually play a role in shaping our very experience of reality? This claim goes beyond the idea that language influences thought; it suggests a deeper, constitutive relationship between linguistic practices and our experiential reality. To approach this puzzle, let us begin by formalizing Taylor's central claim using predicate logic:

Let:

L(x) mean "x is a linguistic practice"
E(y) mean "y is an experience"
S(x, y) mean "x shapes y"
C(y) mean "y is constituted through language"

Taylor's core assertion can be expressed as:

$$\exists x \exists y [L(x) \wedge E(y) \wedge S(x, y) \wedge C(y)]$$

This formalization states that there exists at least one linguistic practice x and at least one experience y, such that x shapes y, and y is constituted by language.

But what does it mean for an experience to be "constituted" by language? This is where we encounter our first conceptual knot. Is Taylor suggesting that without language, certain experiences would not exist at all? Or is he making the more modest claim that our understanding and categorization of experiences depend on language?

To tease apart these possibilities, let's consider a thought experiment:

Imagine two parallel worlds, identical in every way except for one crucial difference. In World A, humans have developed language as we know it. In World B, humans have never developed language. Now, picture a sunset in both worlds. In World A, observers might describe the sunset as “beautiful,” “awe-inspiring,” or “melancholic.” In World B, observers would still perceive the sunset, but without the linguistic categories to frame their experience.

The question is: Are the experiences of the sunset in World A and World B fundamentally different? If we accept Taylor’s strong interpretation, we might say yes, the linguistic framing in World A actually constitutes a different experiential reality. But this leads us to a puzzling conclusion: Are we committed to saying that the people in World B have a diminished or less real experience of the sunset?

2. The Challenge of Ineffability

Taylor’s theory becomes even more intriguing when we consider his notion of ineffable experiences, those that resist full articulation through language. We can formalize this idea as:

Let $R(y)$ mean “ y resists full articulation through language”

Taylor’s claim: $\exists y [E(y) \wedge R(y)]$

This asserts the existence of at least one experience that resists full expression in language. But this introduces a tension in Taylor’s theory. If language plays a constitutive role in shaping our experiences, how can there be experiences that transcend linguistic expression?

To explore this, let’s consider another thought experiment:

Imagine you’re tasked with describing the taste of a fruit that does not exist on Earth to someone who has never tasted it. No matter how eloquent or precise your description, there seems to be an irreducible qualitative aspect of the taste that resists full linguistic capture. This appears to support Taylor’s notion of ineffability.

But here is the puzzle: If this ineffable aspect of taste is truly beyond language, how can we even conceive of it or discuss it? Are we forced to conclude that there are aspects of our experience that are, in principle, incommunicable?

3. Linguistic Relativity and the Bounds of Experience

To further unpack Taylor’s theory, let’s consider how it relates to the idea of linguistic relativity, the notion that the structure of a language influences its speakers’ worldview. We can formalize a strong version of this claim as:

$\forall y [E(y) \rightarrow \exists x [L(x) \wedge S(x, y)]]$

This states that for all experiences y , there exists some linguistic practice x that shapes y . This formulation captures the idea that our experiences are universally shaped by language.

But is this too strong a claim? Consider the experience of pain. It seems intuitive that a person would experience pain regardless of their linguistic background. Yet, our understanding and categorization of pain (e.g., “sharp,” “dull,” “throbbing”) are undoubtedly influenced by our linguistic categories.

This leads us to a more nuanced interpretation of Taylor's theory:

$$\forall y [E(y) \rightarrow [\exists x [L(x) \wedge S(x, y)] \vee P(y)]]$$

Where $P(y)$ means “ y is a primitive experience unaffected by language”

This formulation allows for both linguistically shaped experiences and primitive experiences that exist independently of language. It provides a middle ground between linguistic determinism and naive realism about experience.

4. The Conscious Experience of Language

One aspect of Taylor's theory that deserves closer examination is the phenomenology of linguistic thought itself. When we engage in inner speech or consciously formulate thoughts in language, what is the nature of this experience?

We might formalize this aspect of linguistic experience as:

Let $T(z)$ mean “ z is a thought”
Let $LE(z)$ mean “ z is experienced linguistically”

$$\exists z [T(z) \wedge LE(z)]$$

This asserts the existence of thoughts that are experienced linguistically. But what is the relationship between these linguistically structured thoughts and our nonlinguistic experiences? Are there thoughts that are not experienced linguistically, and if so, what is their nature?

This leads us to a fascinating question: Is the experience of thinking in language itself shaped by language, creating a kind of recursive loop in Taylor's theory?

5. Toward a Coherent Theory of Linguistic Constitution

In light of our analysis, we might propose a refined version of Taylor's theory that addresses some of the puzzles we've encountered:

1. Language shapes many of our experiences, but not all experiences are linguistically constituted.
2. There exists a spectrum of linguistic influence on experience, from highly language dependent concepts to more primitive, language independent experiences.

3. The relationship between language and experience is bidirectional – our experiences also shape our linguistic practices.
4. Ineffability points to the limits of linguistic expression, not necessarily to experiences entirely beyond the reach of language.

We can formalize this refined theory as:

$$\begin{aligned} & \forall y [E(y) \rightarrow [\exists x [L(x) \wedge S(x, y) \wedge D(x, y)] \vee P(y)]] \\ & \wedge \exists z [T(z) \wedge LE(z)] \\ & \wedge \exists w [E(w) \wedge \neg F(w)] \end{aligned}$$

Where:

$D(x, y)$ means “the degree to which x shapes y varies”
 $F(w)$ means “ w is fully articulable in language”

This formalization captures the idea that all experiences are either shaped by language to varying degrees or are primitive experiences, while also acknowledging the existence of linguistically experienced thoughts and the possibility of experiences that are not fully articulable.

6. Open Questions

Taylor’s constitutive theory of language, when subjected to careful analysis, reveals deep questions about the nature of experience, thought, and the limits of linguistic expression. While we've made progress in clarifying and refining the theory, several intriguing questions remain:

1. What is the precise mechanism by which language shapes experience?
2. How can we empirically investigate the degree of linguistic influence on different types of experiences?
3. What are the implications of this theory for our understanding of consciousness and the hard problem of experience?
4. How does this theory relate to the evolution of language and cognition?

II. COMPLEX SYSTEMS THEORY: A NEW PERSPECTIVE

While our previous analysis explored the implications and potential refinements of Taylor’s theory, complex systems theory offers a novel framework for understanding how language can constitute experience in an empirical, dynamic, and emergent sense. This approach allows us to reformulate Taylor's view through empirical models that avoid unnecessary metaphysical commitments while providing a scientific grounding for the constitutive role of language.

Let’s expand our formal logic to incorporate key concepts from complex systems theory:

A(x) means “x is adaptive (adapts based on feedback from use)”
 F(x, y) means “x is shaped by feedback from y”
 M(x) means “x is modeled empirically in a complex system simulation”
 V(x) means “x has empirical validation through observation or simulation”

Now, we can formalize language as a complex adaptive system:

$$\forall x \forall y [L(x) \wedge A(x) \wedge S(x,y) \rightarrow \exists z [E(y) \wedge z = f(x,y)]]$$

This formula states that for any linguistic practice x that is adaptive and shapes experience y, there exists an emergent property z that results from the interaction between x and y. Here, z represents the emergent, dynamic aspect of experience that cannot be reduced to either linguistic practice or experience alone.

7. The Dance of Language and Experience

To illustrate this complex systems view, let’s consider a thought experiment: Imagine a society where the concept of “privacy” does not exist. Their language lacks any words or phrases related to personal space or confidentiality. Now, introduce the word “privacy” into their language. Over time, as people use this word and grapple with its implications, new social norms and behaviors emerge. People start to think about and experience their personal space differently.

In this scenario, the introduction of “privacy” is not just adding a new label to a preexisting concept. Instead, it is initiating a complex dance between linguistic practice and social experience. The word shapes how people think about personal space, which in turn influences how they use and understand the word, creating a feedback loop:

$$\forall x \forall y [L(x) \wedge A(x) \wedge S(x,y) \wedge F(x,y) \rightarrow \exists z [E(y) \wedge z = f(x,y)]]$$

This extended formulation shows that linguistic practices not only shape experience but are themselves reshaped by the feedback from that experience. The emergent property z, which arises from this complex interaction, is a dynamic, evolving aspect of experience.

8. Empirical Grounding and the Challenge of Ineffability

One of the strengths of the complex systems approach is that it provides empirical models that can be used to test and observe how linguistic practices interact with social and cultural environments to shape experience. These models typically involve simulations of linguistic communities, tracking how linguistic rules evolve, how meaning is negotiated, and how new linguistic structures emerge from ongoing interactions.

We can formalize this empirical grounding as follows:

$$\forall x \forall y [L(x) \wedge S(x,y) \wedge A(x) \wedge M(x) \rightarrow V(x)]$$

This formalization shows that for every linguistic practice x that shapes experience y and is adaptive, there exists a complex system model that can be empirically validated.

But how does this relate to Taylor's notion of ineffable experiences – those that resist full articulation through language? Let's revisit our earlier formalization:

Let $R(y)$ mean “ y resists full articulation through language”

Taylor's claim: $\exists y [E(y) \wedge R(y)]$

The complex systems view offers a nuanced perspective on ineffability. Instead of seeing ineffable experiences as entirely beyond language, we might understand them as experiences that exist at the edge of our current linguistic capabilities. As our language evolves through complex interactions, it may gradually approach these ineffable experiences, making them more articulable over time.

Consider another thought experiment:

Imagine trying to explain the color “blue” to a person who has been blind since birth. It seems impossible to fully convey the experience of seeing blue through language alone. However, over time, as we develop more sophisticated ways of describing colors (perhaps through analogy, scientific explanation, or even new sensory substitution technologies), we might come closer to articulating this previously “ineffable” experience.

This suggests that ineffability isn't a fixed property, but rather a dynamic relationship between our current linguistic capabilities and the complexity of our experiences.

9. Reconciling with Quine's Naturalism

The complex systems approach allows us to address Quine's concerns about ontological parsimony and empirical adequacy. By modeling language as a dynamic, evolving process grounded in empirical simulations, we avoid positing ineffable or abstract entities. Instead, we describe language as an emergent phenomenon that can be studied and validated through scientific methods.

We can formalize this reconciliation as follows:

Let:

$N(x)$ mean “ x is naturalized and empirically grounded”

$T(x)$ mean “ x satisfies Taylor's constitutive theory of language”

Thus:

$\forall x [L(x) \wedge M(x) \rightarrow N(x) \wedge T(x)]$

This formalization asserts that for any linguistic practice x , if x is modeled as a complex system, then x is both naturalized and satisfies Taylor's constitutive theory. This provides a bridge between Taylor's insights and Quine's demand for empirical adequacy and naturalism.

10. The Conscious Experience of Language Revisited

Earlier, we considered the phenomenology of linguistic thought itself. The complex systems view adds a new dimension to this consideration. When we engage in inner speech or consciously formulate thoughts in language, we're not just using a static tool, but participating in a dynamic, adaptive system.

Let's formalize this expanded view:

$T(z)$ means "z is a thought"
 $LE(z)$ means "z is experienced linguistically"
 $D(z)$ means "z dynamically evolves through use"

$$\exists z [T(z) \wedge LE(z) \wedge D(z)]$$

This asserts the existence of thoughts that are experienced linguistically and dynamically evolve through use. This formulation captures the idea that our very experience of thinking in language is part of the complex, adaptive system of language itself.

Conclusion: Toward a Dynamic, Empirically Grounded Theory of Linguistic Constitution

In light of our expanded analysis incorporating complex systems theory, we can propose a refined version of Taylor's theory that addresses the puzzles we've encountered and provides a path for empirical investigation:

1. Language shapes many of our experiences as part of a complex adaptive system, with emergent properties that arise from the interaction between linguistic practices and experiences.
2. There exists a spectrum of linguistic influence on experience, from highly language-dependent concepts to more primitive experiences, all of which can be modeled within a complex systems framework.
3. The relationship between language and experience is bidirectional and dynamic, with continuous feedback loops that can be empirically observed and modeled.
4. Ineffability points to the current limits of our linguistic expression, representing a dynamic frontier that may shift as language evolves.
5. The constitutive role of language in shaping experience can be understood and studied through empirical models, grounding Taylor's insights in observable phenomena.

This refined theory, grounded in complex systems theory, provides a rich framework for future research. It suggests several intriguing questions:

1. How can we develop more sophisticated models to capture the emergent properties of language-experience interactions?
2. What are the implications of this dynamic view of language for our understanding of consciousness and the hard problem of experience?
3. How might this theory inform our approaches to language education, cross-cultural communication, and even artificial intelligence development?
4. Can we use complex systems models to predict how new linguistic innovations (e.g., in technology or social movements) might shape future human experiences?

These questions point to exciting avenues for interdisciplinary research, bridging philosophy, linguistics, cognitive science, and complex systems theory. By reframing Taylor's constitutive theory of language within this dynamic, empirically grounded framework, we open up new possibilities for understanding the profound and ever-evolving relationship between language, thought, and human experience.

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