(SYSTEMS) THINKING LIKE A LAWYER

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This Article discusses systems thinking as an innovative approach to contextualizing legal advocacy. Systems thinking, a paradigm that emphasizes universal interconnectivity, provides a theoretical basis for parsing the structural environment in which law-related problems emerge and are addressed. From the array of conceptions about what it means to engage in systems thinking, this Article identifies four key tenets to this perspective: (1) every outcome is the product of some structure; (2) these structures are embedded within and connected to one another; (3) the structure producing an outcome can be discerned; and (4) these structures are resilient, but not fixed. This four-part framework provides a foundation for understanding systems as the contextual environment in which law is practiced. This Article defines surfacing and mapping as tools for engaging in systems thinking that, when incorporated into law school coursework, encourage students to address the presenting needs of a client in tandem with an assessment of the social and institutional systems that the client is a part of and affected by. Further, these tools promote reflection on the roles that attorneys play as both system participants and system architects. Learning objectives rooted in systems thinking promote understanding of organizational behavior, systemic functioning, and how these factors relate to effective advocacy. Systems thinking disrupts the tendency to screen out considerations of what is facilitated or hindered by the pressures and incentives that legal rules and social institutions create. Finally, this Article offers insights concerning the benefits of naming systems thinking as the theoretical core of efforts to recognize the broad social and political interdisciplinarities embedded in legal needs and tethered to the practice of law. Instruction in both the practice and paradigm of systems thinking equips law students to perceive and articulate these connections, as well as critique the role of attorneys in maintaining or disrupting them. Acknowledging systems thinking in legal education contributes to the evolving conception of what it means to "think like a lawyer".

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Figure 1 – Mind map of the table of contents for the article, "(Systems) Thinking Like A Lawyer"¹

INTRODUCTION

Like many parents, Mrs. Washington² didn't have the information she needed to recognize her child's lack of academic progress as a potential legal matter. Rather than seek out legal services herself, Mrs. Washington was referred to the law school clinic I direct by her daughter's pediatrician. Mrs. Washington's daughter is a fifth grader who reads at a kindergarten level. The child, who was treated for seizures at the clinic's partner hospital, had an individualized education program (IEP) that identified her as a student with an "other health impairment."³ Once connected to the clinic, Mrs. Washington

¹ The decision to substitute a mind map for a traditional table of contents was intentional. While the text reflects linear thinking, the content of the text highlights the reality of conceptual interconnectedness, and endorses the use of mapping to engage the benefits of a non-linear paradigm for evaluating information. In furtherance of my argument that systems-based approaches enrich traditional modes of legal thinking, I offer a diagram that shows, as well as tells, how the component parts of this piece form a comprehensive whole.

 $^{^2}$ A pseudonym and an amalgam of clients served at the University of Pittsburgh School of Law – Health Law Clinic.

³ Each public-school child who receives special education and related services must have an individualized education program that is developed in accordance with the Individuals with Disabilities Education Act (IDEA). *See* 20 U.S.C. § 1414(d)(1)(A) and 34 C.F.R. § 300.320. "Other Health Impairment" is one of the thirteen disability categories recognized under the IDEA. *See* 34 C.F.R. § 300.8(c)(9).

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struggled to find time to meet with the law student interns. Her ability to advocate for her daughter was hampered by the time she spent working two jobs and caring for her family. Both jobs were necessary to make rent and cover basic expenses. Her husband had an injury that limited his ability to work and travel independently. Mrs. Washington's overnight security gig required that she stay on site until she was relieved, but the person whose shift came after hers was routinely late. Ms. Washington was skeptical about giving the clinic time out of her very full days. She had been to IEP meetings for her daughter in the past and nothing seemed to change. School staff dismissed Mrs. Washington's questions, saying they are already doing everything they can for her daughter. Though she was very concerned for her daughter's future, what about having a lawyer, she asked, would make things different?

is impossible to know how many families like It Mrs. Washington's live within public school districts that seem to bet on parents having competing demands and few financial resources to distract from its failures to identify and properly serve children with special needs. As a lawyer, rather than investigate district practices, there is a temptation to simply focus on the legal issue presented in the referral: whether the school is denying Mrs. Washington's daughter an appropriate education under the Individuals with Disabilities Education Act (IDEA).⁴ From a clinical teaching perspective, it can feel easier simply to ensure that my students know how to take the steps required to enforce the procedural safeguards available to special education students than to engage them in assessing the organizational incentives and risks that may shape a school district's willingness to comply with the statute. It can seem more important to ensure that my students know the substance of the IDEA than to encourage their ability to regard the federal special education statute as a system of accountability mechanisms that, perhaps, are so attenuated that the consequences of non-compliance fail to incentivize adherence. It can feel more straightforward to simply focus on developing the skills involved in direct representation than to question whether such advocacy is operating at the root of a problem affecting a single family, or simply targeting the manifestation of a deeper issue that impacts multiple households. The daily demands of case management can leave little bandwidth for considerations of the systemic concerns embedded in legal practice. Scholars have argued, however, that law schools do not do enough to impart to their students "the truth that an intellectually disciplined astuteness about institutions and peo-

⁴ 20 U.S.C. § 1400 et seq.

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ple contributes as much to the actual craft of lawyering as does the ability to do technically sound legal reasoning."⁵ Teaching law students to treat legal claims separately from critical reflection on the social and institutional systems tied to their creation ultimately leaves unanswered Mrs. Washington's question about the purpose of a lawyer and the potential of advocacy to create meaningful change.

Legal analysis is incomplete without context. Context can be illuminated through the identification of "systems": the outcome-producing, feedback-driven connections between elements, such as social and institutional structures, individuals, and the law.⁶ In this Article, I propose that systems thinking – an approach that identifies all outcomes as the product of discernable, interconnected systems - should be explicitly incorporated into the legal curriculum. Legal reasoning is strengthened by drawing from theories and methods that prompt a shift in focus from the purely legal aspects of practice toward a "'reflective conversation with the situation' that is the larger task of active lawyering."7 Introducing systems thinking provides law students with a perspective on the structural nature of legal need, and the role of attorneys in addressing those needs, and disrupts the tendency to screen out considerations of what is facilitated or hindered by the pressures and incentives that legal rules and social institutions create. A "systems-level understanding" adds value to legal education by broadening the set of considerations involved in "thinking like a lawyer" beyond traditional legal analysis and the linear practice of moving a case from start to finish.⁸ Legal education that increases student understanding of organizational behavior, systemic functioning, and how these factors relate to the practice of law empowers law students to engage with, learn from, and, perhaps, alter in the interest of justice

⁷ Payton, *supra* note 5, at 235 (quoting D. Schön, *The Reflective Practitioner: How Professionals Think in Action* (1983)).

⁸ *Id.* at 245 ("Systems-level understanding is what gives good lawyers their resourcefulness and peripheral vision, their feel for context, their ability to anticipate the full range of legal issues and arguments that might be available to a client and to understand how a client's cause should be positioned to enhance the likelihood of favorable outcomes.").

⁵ Sallyanne Payton, *Is Thinking Like a Lawyer Enough*?, 18 U. MICH. J. L. REFORM 233, 235 (1985).

⁶ My definition of the term "system" is influenced by Meadows, who defines a system as "an interconnected set of elements that is coherently organized in a way that achieves something." *See* DONELLA H. MEADOWS & DIANA WRIGHT, THINKING IN SYSTEMS: A PRIMER, 11 (2008). *See also* Pennie G. Foster-Fishman, Branda Nowell & Huilan Yang, *Putting the System Back into Systems Change: A Framework for Understanding and Changing Organizational and Community Systems*, 39 AM. J. COMMUNITY PSYCHOL. 197, 198 (2007) ("At their most basic level, systems are generally considered to be a collection of parts that, through their interactions, function as a whole . . . given this definition, the term 'system' can be used to describe a wide array of phenomena.").

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the structures which form the context of their legal advocacy.⁹ Systems-thinking lawyers address the presenting needs of their clients in tandem with considerations of the social and institutional systems that the client is a part of and affected by. They reflect upon the dual roles that attorneys play: as actors who perpetuate existing systems, as well as agents of systemic change.¹⁰ The ability to recognize and parse the connections which comprise social relationships and institutional processes is consistent with an evolving understanding of what effective, innovative legal practice requires.¹¹

Since its historical origins in biology, systems thinking has been regarded as both a mental framework and an evaluative approach to understanding diverse, interconnected phenomena.¹² The framework for engaging in systems thinking comes from General Systems Theory.¹³ This theory holds that a universal characteristic of organization, from cells to societies, is the autopoietic formation of systems.¹⁴ From

¹² Debora Hammond, *Philosophical and Ethical Foundations of Systems Thinking*, 3 TRIPLEC 20, 22 (2005) ("Although systems thinking has roots in many fields, the most significant developments . . . were in the field of biology.").

¹³ See Lynn M. LoPucki, *The Systems Approach to Law*, 82 CORNELL L. REV. 479, 483 (1996–97) ("General systems theory' postulates that 'systemness' is a characteristic of the organization of the universe; for reasons not yet explained, phenomena order themselves largely as discrete systems.").

⁹ *Id.* at 243. The author advocates for the insertion of upper-level electives designed on the principle that "the training of lawyers includ[e] the systematic study of the organizations and institutions that populate the working lawyer's actual environment – not the 'law' governing them, but the things themselves . . . the study of organizations and institutions really is the path to understanding how the contemporary world works."

¹⁰ See Margaret M. Russell, Entering Great America: Reflections on Race and the Convergence of Progressive Legal Theory and Practice, 43 HASTINGS L. J. 749 (1991). Russell opens her piece on the relationship between critical race theory and social justice lawyering by noting that "progressive lawyers have grappled with the structural and ideological contradictions of their roles as both insurgents and gatekeepers of the status quo." *Id.* at 749.

¹¹ See Michele M. Leering, Enhancing the Legal Profession's Capacity for Innovation: The Promise of Reflective Practice and Action Research for increasing Access to Justice, 34 WINDSOR Y.B. ACCESS JUST. 189, 207 (2017) ("Given what we are now learning about what it takes to become an effective and innovative legal professional, it seems likely that law students must now actually think much more imaginatively than the phrase 'thinking like a lawyer' has traditionally required . . ."). See also Sameer M. Ashar, Deep Critique and Democratic Lawyering in Clinical Practice, 104 CALIF. L. REV. 201, 212 (2016). The author argues that bringing complex social problems to the center of the law school curriculum "preserves essential aspects of the legal profession's commitment to seek justice, and teaches transferable approaches to lawyering in a time of foundational change."

¹⁴ Dating back to the 1940s, Bertalanffy argued that the ideas he, and other scientists, had about the organization of natural organisms could be extended to complex wholes of any kind. Driven by a belief that the relationship between structure and behavior observed in organic systems, like cells and ecosystems, could also be observed in human social systems, Bertalanffy proffered that social systems and institutions could, and should, be studied in the same way: as "organized wholes" rather than in isolated or fragmented parts. *See* LUDWIG VON BERTALANFFY, GENERAL SYSTEM THEORY: FOUNDATIONS, DEVELOPMENT,

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this genesis, systems thinking emerged as "an inquiry into the relationship between patterns and processes of organization in physical, biological, psychological and social systems."¹⁵ Notwithstanding the allegedly universal nature of system behavior discussed in general systems theory, "the application of systems thinking to the law has been comparatively limited."16 Some legal scholars have argued that systems thinking is relevant only as applied to the "concrete," rather than the conceptual, aspects of legal systems.¹⁷ This limited application seems to reflect the perspective that the social systems and institutions that shape and drive real-world interactions between lawyers and clients are too "soft" or intangible for the type of analysis that systems thinking encourages. By tying the paradigm and practice of systems thinking to specific reflective learning activities, I challenge the notion that systems thinking in the context of law can only illuminate the legal system, not legal practice. This piece draws from and builds upon the scholarship of lawyers who have found practical relevance in the use of systems thinking to parse complex legal problems, the research of educators who use concept-modeling techniques among graduatelevel students to support student-learning objectives, and the work of scholars who promote systems science as a means harnessing interdisciplinarity to address complex social problems.

In Part One, I introduce systems thinking as a paradigm relevant to legal advocacy. I identify and explain four core theoretical elements of a systems thinking perspective, and demonstrate that this framework provides a foundational premise for regarding systems as the contextual environment of legal practice. I then identify specific approaches for engaging law students in the structural awareness that the practice of systems thinking promotes, in Part Two. These approaches pair two reflective learning activities: *surfacing* the systems implicated in legal practice, and depicting the content and consequences of systemic ties through *mapping* activities. I conclude, in Part Three, with a discussion of the value of explicitly engaging systems thinking as a critical framework to the continued evolution of what it means to think like a lawyer. The progression from passive to

APPLICATIONS (George Braziller, New York 1968). See also Peter Checkland, Systems Thinking, in RETHINKING MANAGEMENT INFORMATION SYSTEMS 45–56, at 47 (Wendy Currie & Bob Galliers eds., 1999); and Hammond, supra note 12, at 21.

¹⁵ Hammond, *supra* note 12, at 22.

¹⁶ Mariel Rodak, It's About Time: A Systems Thinking Analysis of the Litigation Finance Industry and Its Effect on Settlement, 155 U. PA. L. REV. 503, 526 (Dec. 2006).

¹⁷ LoPucki, *supra* note 13, at 488 ("The potential for systems analysis to contribute to legal scholarship is greatest with respect to concrete, law-related systems. . . . The court system, composed of courthouses, records, judges, clerks, lawyers, bailiffs, law books, and the like is an example of a concrete system.").

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active awareness of the systemic provides an opportunity to develop students' abilities to address the specific presenting needs of their clients while being attuned to the broader context of the social and institutional systems that the client is a part of and affected by. The framework can also serve as a reflective touchstone for contrast and comparison of the lawyer's roles in challenging and advancing existing systems. Embracing non-linear evaluative processes in law school is consistent with the principles championed by leaders in clinical legal pedagogy, as well as those doctrinal faculty who teach in ways that amplify the substance of structural inequality. While additional research is necessary to build empirical support for effective approaches to teaching systems thinking in the law school classroom, this Article sets the groundwork for further exploration of the practice and paradigm's contribution to legal education.

I. Systems Thinking as a Paradigm Relevant to Legal Advocacy

Systems thinking is a paradigm relevant to legal advocacy because systems comprise the environment in which lawyers practice. The word "system" enjoys a broad usage in the English language. It is used to describe social institutions (e.g., the criminal justice system) and social conduct (e.g., systemic racism). The term is used to identify any purposeful arrangement of interconnected elements, whether tactile or abstract.¹⁸ Thus, even single pieces of legislation – which contain a purpose-driven set of interconnected rules and procedures – can be described as systems. For example, the Individuals with Disabilities Education Act (IDEA) is a federal statute that details a comprehensive system for ensuring that students with disabilities have access to an appropriate public education. The IDEA is a statutory system that is interwoven with elements of the U.S. system of public education. Public education funding, in many school districts, is tied to a system for property tax collection and budgetary funds distribution. Governmental spending systems are tied to the value systems of the many individuals who play a role in that government. These values are, in turn, tied to public responses to the legislation a government is tasked with enforcing – which can lead to a variety of informal systems for adhering to or disregarding those portions of the law that resonate with or depart from those values. Legal grievances can emerge when informal systems are at odds with the system as prescribed by law. Taken all together, the context in which attorneys – such as those en-

¹⁸ See Checkland, supra note 14, at 51 ("[S]ystems are always, fundamentally, abstract concepts...") (emphasis in original). Checkland defines a system as a "complex whole entity of a particular kind." *Id.* at 48.

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gaged in special education law – practice, can be considered a complex, multi-layered system.

Systems are pervasive, perhaps to the point that one is not always clear on where one system ends and where another begins. This familiarity, both conscious and unconscious, with the presence and influence of systems can make the concept of "systems thinking" challenging to embrace. Systems thinking is "a way of seeing and talking about reality that recognizes the interrelatedness of things."19 Cultivation of the capacity to recognize the context of a special education attorney's work as a system exemplifies the precise aim of systems thinking. Systems thinkers generally conceive of systems as being a representation of reality. They tend to see life as a product of structured relationships, rather than a series of chance occurrences.²⁰ Some proponents emphasize systems thinking as either a mindset²¹ or as a problem-solving approach.²² Others argue that, in systems thinking, the mindset and the approach are inextricable.²³ Stroh, a leading contributor to this field, has argued that systems thinking is simply shorthand for any one of a variety of theories that explain why certain outcomes take place in reoccurring or pattern form.²⁴ Systems think-

²² See D.V. Canyon, Insights in Public Health: Systems Thinking: Basic Constructs, Application Challenges, Misuse in Health, and How Public Health Leaders Can Pave the Way Forward, 72 HAWAI'I J. MEDICINE & PUBLIC HEALTH 440, 441 (2013) ("[Systems thinking] . . . is based on the belief that, because everything interacts with everything, the widest possible selection of branches of knowledge must be brought to bear on problems. The traditional hierarchy of the sciences and professions is abandoned in favor of equal weighting. This approach is recommended for complex, highly ill-structured, unbounded problems for which systemic views are essential even if they lead to confusion or stalemate (e.g., global poverty or starvation).").

²³ PETER SENGE ET AL., SCHOOLS THAT LEARN 8 (2012) (Systems thinking "is an extensive body of knowledge and practice for recognizing and managing complexity in the world at large."(emphasis removed).

²⁴ See DAVID PETER STROH, SYSTEMS THINKING FOR SOCIAL CHANGE: A PRACTICAL GUIDE TO SOLVING COMPLEX PROBLEMS, AVOIDING UNINTENDED CONSEQUENCES, AND ACHIEVING LASTING RESULTS 17 (Chelsea Green Publishing 2015). Stroh points out that there are different schools of systems thinking: General systems theory, complexity theory, system dynamics, human system dynamics, and living systems theory. "While all these schools tend to agree on most of the systems principles . . . they differ in the methodologies used to both analyze a system and identify ways to improve it." *Id*.

¹⁹ Steve Vassallo, *Design Thinking Needs to Think Bigger*, FAST COMPANY (May 11, 2017), https://www.fastcompany.com/90112320/design-thinking-needs-to-think-bigger (last visited, July 6, 2019).

²⁰ Rodak, *supra* note 16, at 524 ("The systems view treats things as 'integrated wholes of their subsidiary components and never as the mechanistic aggregate of parts in isolable causal relations.'" (quoting ERVIN ASZLO, THE SYSTEMS VIEW OF THE WORLD 5 (1972), at 14–15)).

²¹ See Foster-Fishman et al., *supra* note 6, at 199 ("We consider systems thinking as 'a general conceptual orientation concerned with the interrelationships between parts and their relationships to a functioning whole', . . . systems thinking is a conceptual way of seeing the world based on systems principles.").

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ing seems to evolve into and out of public consciousness. With the rising popularity of design thinking and machine learning approaches to problem solving, the relevance of the paradigm has reemerged.²⁵

However, despite the paradigm's development in a variety of professional disciplines, "the application of systems thinking to the study of law has been comparatively limited."²⁶ This limited development of systems thinking as a meaningful complement to legal advocacy may be tied to how some scholars have described the framework. Systems thinking can be discussed in ways that are so lofty or obtuse²⁷ that its practical utility remains unclear.²⁸ A growing body of work challenges the perspective that practices rooted in systems thinking are too abstract to be applicable to law-related problems. The paradigm has informed scholarly recommendations for improving a variety of areas of legal practice such as litigation finance,²⁹ environmental regulation,³⁰ economic regulation,³¹ and conflict resolution.³² Systems thinking has been used to challenge legal problem-solving approaches that rely on information silos, and to encourage big-picture, multidisciplinary analysis.³³ The systems thinking paradigm has also been used to assess

²⁸ See LoPucki, supra note 13, at 483-484 ("Systems theories are seldom, however, directly useful in analyzing particular law-related systems... At levels of broad generality, law-related systems probably do respond to general system principles, but at the level of specificity required for most legal reform, systems theory has little to offer."). Even Check-land, who has published multiple pieces on systems thinking, writes: "It is the later history of the systems movement which has painfully established that system is truly, the abstract concept of a whole which may or may not turn out to be useful as a descriptive device for making sense of real-world wholes." Checkland, supra note 14, at 48.

²⁹ See Rodak, supra note 16, at 526 ("Because of the realistic view it counsels of the legal system as a complex and ever-changing entity . . . systems thinking is a useful way to analyze litigation finance. . . .").

³⁰ See J.B. Ruhl, Thinking of Environmental Law as a Complex Adaptive System: How to Clean Up the Environment by Making a Mess of Environmental Law, 34 Hous. L. Rev. 933 (1997); and C.J. McGuire & B.P. Harris, Systems Thinking Applied to U.S. Federal Fisheries Management: Law and Policy Considerations, 26 NAT. RESOURCES & ENV'T 3 (2012).

³¹ I. Anabtawi & S.L. Schwarcz, *Regulating Ex Post: How Law Can Address the Inevitability of Financial Failure*, 92 Tex. L. Rev. 75 (2013).

³² Susan Sturm & Howard Gadlin, *Conflict Resolution and Systemic Change*, 2007 J. DISP. RESOL. 1 (2007).

³³ Rodak, supra note 16, at 525 ("[S]ystems thinking encourages a new way of analyz-

²⁵ See generally Vassallo, supra note 19. See also David H. Peters, The Application of Systems Thinking in Health: Why Use Systems Thinking?, 12 HEALTH RESEARCH POL'Y AND SYSTEMS 1 (2014) ("[I]t is hard to know whether the recent attention to systems thinking is just another fad, or something more durable that offers usable insights for understanding and action.").

²⁶ See Rodak, supra note 16, at 526.

²⁷ See, e.g., Niklas Luhmann, *Law as a Social System*, 83 Nw. U.L. REV. 136 (1988–89). In this arguably dense piece, Luhmann identifies two routes to adopting a systems thinking approach to understanding legal systems: 1) through differentiation of the legal and social systems; and 2) through recognizing the autopoietic nature of law.

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whether proposed or employed interventions will sustainably produce a desired effect.³⁴ Through the guise of network analysis,³⁵ the paradigm has been used to analyze the U.S. system of case law citation³⁶ and its judicial social structure.³⁷ Further, approaches to the design of some clinical legal education programs have drawn from elements of systems thinking.³⁸ The paradigm supports an understanding of systemic structures as comprising the context of both legal practice and client experience.³⁹ It provides a foundational premise for engaging in structural analysis of law-related systems.⁴⁰

From the array of conceptions about what it means to engage in systems thinking, I have identified a framework of four key tenets to this perspective: (1) every outcome is the product of some structure; (2) these structures are embedded within and connected to one another; (3) the structure for producing an outcome can be discerned; and (4) these structures are resilient, but not fixed. This four-part framework provides a theoretical foundation for understanding systems as the contextual environment in which law is practiced. These

³⁶ Thomas A. Smith, *The Web of Law*, 44 SAN DIEGO L. REV. 309, 310–11 (2007).

³⁷ See Katz & Stafford, supra note 35, at 464.

³⁸ See Edgar S. Cahn, *Clinical Legal Education from a Systems Perspective*, 29 CLEV. ST. L. REV. 451 (1980); and Meredith Ross, A "Systems" Approach to Clinical Legal Education, 13 CLIN. L. REV. 779 (2006–07).

³⁹ See Patrick C. Brayer, A Law Clinic Systems Theory and the Pedagogy of Interaction: Creating a Legal Learning System, 12 CONN. PUB. INT. L.J. 49, 50 (2012–13). Brayer describes "a clinical systems approach that reframes professional experience as an interaction with a professional environment."

⁴⁰ Anabtawi & Schwarcz, *supra* note 31, at 76 ("Law-related systems are systems in which the law is an integral element."). *See also* LoPucki, *supra* note 13, at 498.

ing problems; in fact, it even suggests a new way of determining what is (or is not) a problem in the first place. This paradigm shift entails various overarching principles of how to conduct analysis as a systems thinker, in particular approaching problems as subsets of their larger environments rather than in isolation; rejecting a linear, 'either-or' view of the world, instead recognizing its inevitable complexity and interrelation; and acknowledging that seemingly small events or changes can cause extreme outcomes.").

³⁴ See Foster-Fishman et al., *supra* note 6, at 197. See also Gary L. Blasi, Litigation on behalf of the Homeless: Systematic Approaches, 31 WASH. U. J. URB. & CONTEMP. L. 137 (1987). While Blasi does not discuss systems thinking explicitly, this Article has been acknowledged by other scholars as an example of how systems analysis can be conducted as a part of legal practice. See LoPucki, *supra* note 13, at 479 n.7, describing Blasi's article as a, "self-conscious application of systems analysis in law." See also Anabtawi & Schwarcz, *supra* note 31, at 83.

³⁵ "Network analysis is a disciplined scientific approach used to understand the interactions between agents in a complex system." *See* Daniel M. Katz & Derek K. Stafford, *Hustle and Flow: A Social Network Analysis of the American Federal Judiciary*, 71 OH10 ST. L.J. 457, 464 (2010). Rather than use systems thinking's language of elements and relationships, network analysis refers instead to "nodes" and "edges" or "ties" to describe how nodes are connected. Network analysis applied to jurisprudence is concerned with whether the legal system behaves or organizes itself in ways that are similar to the performance of real, highly skewed networks, by displaying patterns of integration, divergence, or convergence.

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principles anchor systems thinking as a paradigm relevant to legal advocacy.

The first key tenet to a systems thinking perspective is the idea that every outcome is the product of some structure.⁴¹ Systems thinking presupposes that all outcomes are systemic – that is, they are the product of elements connected in purposeful formation.⁴² If some observed event takes place, the systems thinker asks what relational arrangement produced that result. The term "structure" refers to the manner in which the relationships within a given system are organized.43 The structure of a system details which elements are connected to one another. Structure also dictates what an identified system might look like in visual form, whether hierarchical, cyclical, or representative of some other arrangement. That outcomes result from particular relationship formations is a rational foundational premise. Before one can buy into the idea that systems can be identified for study, one must first believe that structurally ordered relationships exist, and that the nature of this order dictates the systemic output. Rule adherence, for example, can be understood as a product of the ways that connections between a rule, its promulgators, and those subject to the rule's terms are tied to one another.44 This means acknowledging that the order of relationships between individuals and the institutions they create is consequential, and that consequences are the product of ordered relationships.

⁴¹ Vassallo, *supra* note 19.

⁴² LoPucki, *supra* note 13, at 497–98. The ability to identify and distinguish systems for study "is based on the premise of systems theory that phenomena, including social phenomena, organize themselves into systems."

⁴³ See Anne E. Bardoel & Tim Haslett, *Exploring Ethical Dilemmas Using the "Drifting Goals" Archetype*, 30 J. MGMT. EDUC. 137 (Feb. 2006) ("In the language of systems thinking, *structure* refers to the manner in which the elements of the systems are interrelated, including, for example, not only the organizational chart but also interpersonal dynamics, information flows, and incentive systems.").

⁴⁴ See Cahn, supra note 38, at 452 ("Any rule, norm, or policy can be frustrated by the mode of implementation, the importance or lack of importance assigned to it and the effectiveness of the mechanisms and procedures for securing implementation.").



Figure 2 – The structure of the child find obligation as dictated by the IDEA (top), and as altered by selective adherence and parent involvement (bottom)

In the context of special education advocacy, for example, the IDEA defines a direct relationship between public school students and district administrators through the "child find" obligation.⁴⁵ This obligation connects administrators to the pool of children suspected of having a disability through the district's affirmative responsibility to identify and test such children for disabilities. This structure seems to assure, as an outcome, that public school children with both apparent and masked special education needs are identified for evaluation. A school district's practice of selectively adhering to child find can alter this structure, motivating parents to intervene in this relationship in order to prompt their district to satisfy its child find obligation, even though parental initiation is not a prerequisite of the law (Figure 2). This change in structure could result in a change in outcome – if more students are identified when concerned parents request an evaluation for their child than when the district is left to follow child find, or not, according to its own discretion. Systems thinkers adhere to the belief that, for every result, there is an underlying structure to the relation-

⁴⁵ See 20 U.S.C. § 1412(a)(3) and 34 C.F.R. § 300.111.

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ships between the elements producing that occurrence. As the saying goes, "Every system is perfectly designed to achieve the results it gets."⁴⁶

The second tenet to a systems thinking perspective is that outcome-producing structures are embedded within and connected to one another.⁴⁷ As pointed out above, statutes like the IDEA are an example of outcome-producing structures that are both connected to and embedded within other laws, rules, and policies (which are outcome-producing structures as well). The IDEA itself contains the parameters of subsystems for identifying, servicing, and disciplining students with disabilities. These subsystems are tied to social systems that exist beyond the language of the statute. The school-to-prison pipeline is a conceptual system that consists of the movement of youth from the classroom to delinquency, and ultimately to the adult criminal system. Two of the IDEA's subsystems, child find and manifestation determination reviews,48 are connected to the school-to-prison pipeline as structural elements that potentially offer students with disabilities, as well as students with unidentified special education needs, increased opportunity to remain in school rather than receive disciplinary consequences that could lead to involvement with the juvenile justice system (Figure 3).

⁴⁶ The origin of this quote is not clear. *See*, IHI Multimedia Team, *Like Magic?* ("*Every system is perfectly designed*"), Institute for Health Care Improvement (Aug. 21, 2015), https://tinyurl.com/uxsjmdu (last visited Jan. 20, 2020); Susan Carr, *A Quotation with a Life of Its Own*, Patient Safety & Quality Healthcare (July/August 2008) https://www.psqh.com/julaug08/editor.html (last visited July 6, 2019); and The W. Edwards Deming Institute (2019) http://quotes.deming.org/authors/W._Edwards_Deming/quote/10141 (last visited July 6, 2019).

⁴⁷ MEADOWS & WRIGHT, *supra* note 6, at 12. *See also* Checkland, *supra* note 14, at 50. ⁴⁸ 34 C.F.R. § 300.530(e).





The presumption that systems consist of embedded and interrelated structures discourages systems thinkers from myopic or reductionist approaches to studying observed outcomes, and instead, champions considerations of the bigger picture. Just as one cannot understand an area of law from reading a single judge's opinion, "system behavior cannot be understood . . . by studying a single agent or group of agents."⁵⁰ To really understand how legislation like the IDEA operates as a system, one must pay attention to the structures, institutions,

⁴⁹ Students with disabilities can be disciplined in the same manner as their non-disabled peers for the first ten days of a suspension, or for a series of suspensions that do not total more than ten days. *See* 34 C.F.R. § 300.530(b). Longer disciplinary removals trigger the manifestation determination review process. The IDEA extends this review process to students who were not identified as having a disability at the time of the infraction if the school district had knowledge that the child was a child with a disability before the behavior that precipitated the disciplinary action occurred. *See* 34 C.F.R. § 300.534. For a more nuanced explanation of the school-to-prison pipeline, see Thalia González, *Keeping Kids in Schools: Restorative Justice, Punitive Discipline, and the School to Prison Pipeline*, 41 J.L. & EDUC. 281 (2012); Jason P. Nance, *Dismantling the School-to-Prison Pipeline: Tools for Change*, 48 ARIZ. ST. L.J. 313 (2016); and Chauncee Smith, *Deconstructing the Pipeline: Evaluating School-to-Prison Pipeline Equal Protection Cases Through a Structural Racism Framework*, 36 FORDHAM URB. L. J. 1009 (2009).

⁵⁰ J.B. Ruhl, Law's Complexity: A Primer, 24 GA. ST. U. L. REV. 894, 905 (2012).

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and organizations with which it interacts. The study of special education law necessarily includes the study of disciplinary removals because the two structures intersect. The study of disciplinary removals, likewise, must include efforts to understand the social implications of those removals. Systems thinking emphasizes consideration of the big picture over individual parts when trying to understand the cause of identified outcomes.⁵¹

From a systems thinking perspective, patterns of events – like the series of disciplinary removals that perpetuate the school-to-prison pipeline - are considered the emergent properties, or the behavior of a system. These properties are the observable characteristics or outcomes that a particular set of relationships produce over time. Emergent properties are what a system does in its entirety that is distinct from the acts of a single element within that system.⁵² The insight that "a system's behavior is the product of its underlying structure"⁵³ forms the basis for the third tenet of systems thinking: that the structures responsible for producing an outcome can be discerned.⁵⁴ Systems thinkers use "the situation" or system outcomes as a starting point for identifying the component parts of a system.⁵⁵ From this perspective, the contents of systems (i.e., their elements and the type of relationships between those elements) can be discovered through observation and reflection, and expressed through visual modeling (as in Figures 2 and 3, above).

Finally, the systems thinking perspective holds that systemic

⁵¹ Foster-Fishman et al., *supra* note 6, at 210 ("Systems thinking reminds us that all system parts are either directly or indirectly connected to each other and the outcomes of systems are the product of these interactions. The basic tenet of systems science has several important implications for what it means to adopt a systems approach to understanding systems change. Specifically, it suggests that no part of a system can ever be fully understood divorced from its interactions with other system elements. It also suggests that the interactions within the system, including their character and consequences, must be examined to fully understand how and why a system functions as it does.").

⁵² See Ruhl, supra note 50, at 899. See also Adrian Cho, Ourselves and Our Interactions: The Ultimate Physics Problem?, 325 Sci. 406 (July 24, 2009); and Martin Reynolds & Sue Holwell, Introducing Systems Approaches, in SYSTEMS APPROACHES TO MANAGING CHANGE: A PRACTICAL GUIDE 1, 8 (Martin Reynolds & Sue Holwell eds., London: Springer, 2010]) ("[S]ystems thinking... is based on an understanding that if one considers a situation as a whole, rather than focusing on its component parts, then there are properties which can be observed which cannot be found simply form the properties of the component parts.").

⁵³ Anabtawi & Schwarcz, *supra* note 31, at 80.

⁵⁴ See Peters, supra note 25, at 4 ("A common thread of all these theories, methods, and tools is the idea that the behavior of systems is governed by common principles that can be discovered and expressed.").

⁵⁵ Reynolds & Holwell, *supra* note 52, at 8. ("[S]ystem approaches start with the situation, with its complexity and uncertainty, where an acknowledged part of the problem is \ldots the language of systems is about problem situation rather than problem. \ldots ").

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structures are resilient but not fixed.56 This tenet can be considered the systems thinker's response to the question, why is lasting change difficult to effect? Structural resilience is, "a system's ability to survive and persist within a variable environment."57 Ordered ways of doing things tend to follow the same order and, thus, resist change. As one learns in physics, an object (or in this case, a system) in motion tends to stay in motion unless acted on by an outside force.58 Systems thinkers refer to this tendency as path dependence.⁵⁹ While relatively stable, systems are adaptable and can be changed – depending on the weight, or consequence of that outside force.⁶⁰ Leverage (opportunities to intervene in and disrupt systemic outcomes) can be created in several ways.⁶¹ Changing the elements of a system can change what the system produces. Consider the example in Figure 2, where a parent may intervene in the child find system by prodding school staff to follow through on its statutory obligation. Bringing parents into the process changes the child find system by adding a new element.⁶² Systemic outcomes can also be affected by changes in the feedback, or quality of the connections between elements in a system.⁶³ Increased

⁶⁰ Checkland, *supra* note 14, at 49 ("At the core of systems thinking is a concept which clearly derives very directly from our intuitive or casual knowledge of organisms: the concept of a whole entity which can adapt and survive, within limits, in a changing environment. This notion of 'the adaptive whole' is the central image in systems thinking ").

⁶¹ See Foster-Fishman et al., *supra* note 6, at 211. The authors' approach to transformative systems change involves four principal steps. The fourth step is Identifying Levers for Change ("Once systems change agents and researchers have developed a comprehensive understanding of a system's deep and apparent parts and their interactions, they are well positioned to locate strategic levers for facilitating systems change.").

⁶² But see MEADOWS & WRIGHT, supra note 6, at 16. According to Meadows, changing elements rarely changes system behavior. Changing the capacity of an element may stabilize a system, but the resources needed to alter capacity may not be practically available. "A system generally goes on being itself, changing only slowly if at all, even with complete substitutions of its elements, as long as its interconnections and purposes remain intact." *Id.*

⁵⁶ Ruhl, *supra* note 50, at 904 ("A system may be stable and predictable over some relevant time frame and scale, but it is never entirely static, and small changes in one condition can lead over time to large changes in another condition.").

⁵⁷ MEADOWS & WRIGHT, supra note 6, at 76.

⁵⁸ This is a casual reference to Newton's first law of motion, also known as the law of inertia. *See* Julius O. Smith III, *Newton's Three Laws of Motion*, Center for Computer Research in Music and Acoustics (CCRMA), Stanford University (Mar. 18, 2019) https://ccrma.stanford.edu/~jos/pasp/Newton_s_Three_Laws_Motion.html.

⁵⁹ Path dependence means that the future of a system depends on (is informed, or shaped by) the past. "[E]vents of the past limit the range of possible events for the future. Over time, network architecture builds along the path of the system, laying a foundation of self-organized structure that lends stability to the [system] within its environment of exogenous conditions." Ruhl, *supra* note 50, at 894–95.

⁶³ While the term is also used in common parlance, "feedback" is used in the literature on systems thinking to discuss the stimulus of one element, or string of elements on another element of the system. It is the communication exchanged between every connected

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occurrence of a systemic outcome is attributed to reinforcing feedback.⁶⁴ Stability or consistency in the frequency of an outcome is attributed to sources of balancing feedback.65 If the parents are successful in their communications with the school, a reinforcing feedback loop could be incorporated into the child find system: the more parents who call for testing, the more students who are in fact tested, the more parents who are motivated to call for testing, and so on. Delays in feedback between components of a system can mimic stability and camouflage upticks.⁶⁶ If the feedback generated by an intervention is not meaningful or frequent, the system may prove resistant to reform efforts.⁶⁷ The quality of feedback in the child find example must be both strong and consistent for parental involvement to affect lasting change. Any reduction in the number of intervening parents, or lapse in their persistent follow through, could fail to produce the requisite pressure needed to sustain a system wherein schools broadly test students for special education needs. Changing the values that underlie the formation of a structure is perhaps the most impactful, as well as the most elusive, means of effecting systemic change.⁶⁸ Building consensus around priorities may seem untenable, yet harnessing collective power to challenge the values that make a school's selective rule adherence attractive, presents the greatest amount of potential leverage available to parents. From this perspective, sustainable change is possible - when interventions target multiple facets of systemic structures.69

⁶⁵ Balancing feedback is stimulus that works to keep system behavior within a range of outcomes. Balancing feedback maintains stability by preventing reinforcing feedback from driving a system to any extreme. This feedback is regulatory, in that it does not kick in until some triggering event within the system, and usually stops after some other triggering event. *See* KIM, *supra* note 64, at 7.

⁶⁶ See MEADOWS & WRIGHT, supra note 6, at 103-05. Delays are a way of talking about the amount of time it takes to observe or perceive the effects of balancing or reinforcing feedback. Delays that are too short in duration can cause overreaction, while delays that last too long can be ignored in favor of more immediate stimuli.

⁶⁷ See Ruhl, supra note 50, at 902 ("How change happens in response to different conditions depends largely on the feedback [the condition] sends to agents in the system.").

⁶⁸ See Tanya Asim Cooper, Racial Bias in American Foster Care: The National Debate, 97 MARQ. L. REV. 215, 251 (2013) ("Changing a system under this theory depends on the degree to which the components are affected: changing the players or elements has the least effect on the system, but changing dynamics between elements and especially the ultimate purpose of the system has the greatest effect.").

⁶⁹ See Foster-Fishman et al., supra note 6, at 199 (Leverage, "will lead to the desired

element in a system; what one part does, and the action taken by another part in response. *See, e.g.,* MEADOWS & WRIGHT, *supra* note 6, at 27-31; Foster-Fishman et al., *supra* note 6, at 211; and Ruhl, *supra* note 50, at 893.

⁶⁴ Reinforcing feedback is stimulus that increases or decreases system behavior. It represents the situation that exists when the more X variable takes place, the more change in Y variable is observed. *See* DANIEL M. KIM, INTRODUCTION TO SYSTEMS THINKING 5–6 (Pegasus Communications, Inc., 1999); and SENGE ET AL., *supra* note 23, at 134–35.

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Systems thinking affirms the tacit understanding that law is both a system in and of itself, and is an element of other social and institutional systems.⁷⁰ Law is connected to other disciplines and to the range of human experience in ways that must be acknowledged in tandem with the substantive content of legal study. As a paradigm encompassing the four tenets described in this section, systems thinking in legal education undergirds the existing efforts of progressive faculty who seek to answer the call of social justice stalwarts - like López and Quigley, who demand regard for the interconnected structures that maintain and perpetuate social inequality as part of their teaching.⁷¹ Critical exploration of the system-based context in which lawyers practice during law school can orient students to perspectives beyond the legal field, as well as to opportunities for innovative problem solving within a particular practice area.⁷² From the perspective that every outcome is the product of some structure, students can adopt a practice of seeing their case management choices, as well as the problems in their cases, as outcomes resulting from some combination of social and institutional structures. Recognizing that these structures are embedded within and connected to one another, the student understands that the law and legal processes are a part, but are not the sum total, of the structures which drive the societal outcomes they are called upon to study and address. The student learns to identify social dynamics within and outside of the attorney-client relationship, and processes outside of expressly legal institutions, to grasp the full context of a presenting problem. My students have called this work "taking the blinders off," because lifting the convention of seeing legal problems only through the lens of legal analysis is like removing a

outcome only if concurrent shifts happen in the relational and compositional elements of the system.").

⁷⁰ Anabtawi & Schwarcz, *supra* note 31, at 83 ("Systems analysis of law-related systems formalizes and makes explicit the relationships between law and its broader contexts.").

⁷¹ Anthony V. Alfieri, *Rebellious Pedagogy and Practice*, 23 CLINICAL L. REV. 5, 15 (2016). Alfieri explains that Gerald López's concept of rebellious lawyering, "reconceives the standard subject-object roles and hierarchical dominant-subordinate relationships of client-centered lawyering." In rebellious lawyering, clients are complex, multi-dimensional, and ever-changing, inhabiting a range of subject-object roles and negotiating a variety of dominant-subordinate relationships while situated in local networks of family, school, work, religion, and community." *See also* William P. Quigley, *Racism: The Crime in Criminal Justice*, 13 LOY. J. PUB. INT. L. 417 (2012). Here Quigley argues that the racism is inextricable from the operation of the U.S. Criminal Justice System, thus the system must be "dismantled."

⁷² Ashar, *supra* note 11, at 227 ("[G]iving students critical frames generated across disciplines, we encourage them to put their newfound skills of categorization and reduction into a broader, structural context. The goal is to give them the experience necessary to interpret community narratives and to co-construct social problems and potential legal responses, alongside clients.").

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visual constraint. Acknowledging that system structures can be discerned, the student does not stop at identifying the presence of a systemic problem. Rather, she investigates the elements, relationships, and purposes that create and perpetuate the identified problem. Ultimately, the understanding that systems are resilient but not fixed can direct the student away from solutions that may only address a single component of the identified system, and toward interventions that address any feedback or delays between those system participants considered to be drivers of challenging problems.⁷³

A systems thinking pedagogy involves giving law students the tools to be able to "see the water"; that is, to articulate the often translucent context that gives rise to legal problems.⁷⁴ The task of the law professor, from this perspective, is to bring conscious discussions about systemic outcomes to their instruction. While some students may find such cognizance to be intuitive, others will benefit from guided cultivation of their system awareness. Law professors, clinical and doctrinal, should be encouraged to engage with students in parsing the perceived relationships involved in their understanding of the structures causing or upholding socially challenging outcomes. Explicitly discussing systems thinking in the legal education environment anchors in theory and reveals the framework within the efforts of those faculty who already amplify interdisciplinarity, inequity, and "wicked problem solving" in their teaching.75 Methodologies that increase law students' abilities to identify legal needs, legal processes, and legal practice as systemic occurrences supports the development of attorneys who are able to consider how these structures impact their efforts to meet both client and broader social justice objectives.⁷⁶ The utility of systems thinking is not limited to the perspective the paradigm affords. In Part II, I discuss how to utilize systems thinking as a practice which involves identifying and articulating the substance

⁷³ Ruhl, *supra* note 50, at 901. Ruhl posits that, the more we think of law as a system, the better we will become at "designing law as a system."

⁷⁴ John Kania et al., *The Water of Systems Change*, FSG (June 2018), https://tiny-url.com/v9hz3gg (last visited Jan. 20, 2020).

⁷⁵ See Ashar, *supra* note 11, at 205, arguing that "we need to further the moves from insular, extractive legal education toward connected, co-generative learning and practice centers." *See also* Judith Welch Wegner, *Reframing Legal Education's Wicked Problems*, 61 RUTGERS L. REV. 867, 871 (2009). Wegner defines a "wicked problem" as one that occurs "when the factors affecting possible resolution are difficult to recognize, contradictory, and changing; the problem is embedded in a complex system with many unclear interdependencies, and possible solutions cannot readily be selected from competing alternatives."

⁷⁶ Ruhl, *supra*, note 50, at 897 ("[T]he legal system, as a source of rules for regulating other social systems, should take into account how those systems operate. If one wishes to regulate a complex adaptive social system, one ought to think like a complex adaptive system.").

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of system structures.

II. Systems Thinking as a Practice of Contextual Awareness

Systems thinking, in addition to being viewed as a paradigm, can be regarded as a practice of contextual awareness.⁷⁷ Such cognizance involves recognizing the systems at play in a particular legal problem, and identifying, to the best of one's ability, the particular actors and the dynamics between them that are involved in that circumstance. While there are myriad perspectives on how to translate this theory into practice,⁷⁸ there is no definitive set of techniques for using systems thinking to unpack the interconnected networks embedded in legal problems.⁷⁹ Systems recognition methodologies should be taught in law school courses in tandem with activities that involve translating mental models of social and institutional structures into a visual format, thereby allowing for discussion and critique. Educators must have specific teaching strategies to meet this objective. To bring systems thinking as a practice for developing contextual awareness into law school coursework, I propose learning activities that involve surfacing and mapping systems.

Surfacing is a discipline of observation. It involves approaches for paying attention to and pinpointing systems which comprise the context of a law-related concern. While universal connectivity is a central tenet of systems thinking, when it comes to system recognition, the goal is not to identify the infinite breadth of connectivity. Surfacing involves raising one's conscious awareness of a discrete set of structures responsible for a behavior or outcome of interest.⁸⁰ Every identi-

⁷⁷ See Reynolds & Holwell, *supra* note 52, at 8 ("Most people recognize they hace been in situations where they 'can't see the wood for the trees.' Systems thinking is precisely about changing the focus of attention to the forest, so that you can see the trees in their context.").

⁷⁸ See Reynolds & Holwell, supra note 52, at 9. Here the author notes:

The four-volume publication, *Systems Thinking* by Midgley (2003), has nearly 100 chapters each dealing with a particular method [of systems thinking] and in 2001 Eric Schwartz identified 1,000 'streams of systems thought' (http://www.iigss.net/gPICT.jpg). The 1997 International Encyclopedia of Systems and Cybernetics (François 1997) had 3,000 entries. So, in the systems field there is no shortage of approaches; it is diverse with many concepts, methodologies, methods and techniques.

⁷⁹ See Alison McMorran Sulentic, Can Systems Analysis Help Us to Understand C.O.B.R.A.?: A Challenge to Employment Based Health Insurance, 39 J. MARSHALL L. REV. 753, 757 (2006) ("[L]egal scholars have not explored the possible merits of systems analysis in sufficient numbers to enable a canonical determination of the norms and methodology that define its boundaries.").

⁸⁰ Erin J. Stringfellow, *Applying Structural Systems Thinking to Frame Perspectives on Social Work Innovation*, 27 RESEARCH ON SOCIAL WORK PRACTICE 154, 155 (2017) ("Structure is an important addition to systems thinking, which is too often interpreted as

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fied system must be bounded in some way, so that the system under scrutiny is specific, and the scope of the analysis becomes practical.⁸¹ Setting boundaries moderates the set of elements at play in defining context, focuses the scope of a law-related problem, and brings the connections that stand out to the observer into focus. In this section, I discuss two different methods faculty can use to develop their students' ability to recognize interdependent relationships occurring within a bounded scope: event-pattern-structure (EPS), and positive and normative outcomes assessment. Each method can be coupled with an approach to system mapping.

Mapping is a discipline of reflection that involves creating visual images of the observed connections and structures within the bounds of an identified system.⁸² It is a means through which perceived relationships can be depicted and assessed in order to vet ideas about how current outcomes are produced, as well as how new connections and outcomes can be created. Diagraming or mapping mental models of the systems one has surfaced involves confronting one's assumptions about the drivers of systemic outcomes by depicting them in visual form. A hypothesis underlying this practice is that creating a diagram of a perceived system can guide efforts to discern the series of relationships that drive problematic outcomes, as well as the opportunities within a system structure where interventions might create new outcomes.83 Even if a particular instance of system mapping had no practical problem-solving value, the practice would still have academic merit, because it challenges students to engage in the mental process of deconstructing the systems they identify as the context of the legal problems and social challenges they will face as attorneys.84

everything is connected to everything, a truism of limited use when the goal is to solve problems.").

⁸¹ Foster-Fishman et al., *supra* note 6, at 204 ("[I]f the [system] boundaries are drawn too wide, then the system change effort can become cumbersome and unmanageable; if drawn too narrow then vital system pieces may be ignored. Ulitmately, it is critical to remember that all systems are bounded. . . .").

⁸² LoPucki, *supra* note 13, at 505 ("[M]uch of the effort in the field of systems analysis is devoted to the development of methods for describing or depicting complex relationships."). *See also* Martin Davies, *Concept Mapping, Mind Mapping and Argument Mapping: What are the Differences and do They Matter?*, 62 HIGH EDUC. 279 (2011).

⁸³ See KIM, supra note 64, at 12 ("A diagram of the reinforcing and balancing processes at work in the system we're interested in can be an excellent first step to figuring out how the feedback is generating behavior that we want to change."). See also Leyla Acaroglu, *Tools for Systems Thinkers: Systems Mapping*, DISRUPTIVE DESIGN (Sept. 20, 2017), https://tinyurl.com/t4wdnjm (last visited January 23, 2020).

⁸⁴ See Deborah Jones Merritt, *Cognition and Justice: New Ways to Think Like a Lawyer*, 69 ARK. L. REV. 47, 53 (2016). According to Merritt, in order to gain the competencies necessary to engage in both "rule-changing" and "rule-abiding justice" strategies, law students must be taught, "to map existing law and policies," in addition to other traditional legal skills.

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As with methods for system recognition, there are multiple tools available for mapping system structure.⁸⁵ Executed most simply, one hand-draws a system map by identifying concepts or actors by name or within a symbol (e.g., a square) and connecting the concepts or actors to one another with lines or arrows. More sophisticated maps can be produced through the use of software⁸⁶ or apps,⁸⁷ or by taking advantage of specific websites.⁸⁸ Empirical evidence in support of using concept maps in the educational environment comes from the cognitive sciences.⁸⁹ In legal education, mapping techniques have been adopted as learning tools and, to a limited extent, as an assessment tool.⁹⁰ Learning through the use of graphic organizers or other visual aids has been shown to increase the critical thinking, self-awareness, and reflection skills of students in non-legal professional learning programs,⁹¹ creating reason to believe that the use of mapping exercises

⁸⁷ See, e.g., Mindomo, https://www.mindomo.com/ (last visited, January 23, 2020).

⁸⁵ See Peter M. Senge & John D. Sterman, Systems Thinking and Organizational Learning: Acting Locally and Thinking Globally in the Organization of the Future, SYSTEM DYNAMICS CONFERENCE PAPER 1007-1022, 1010 (1990). ("Many cognitive mapping tools have been developed to portray the mental models of individuals and groups.") See also SENGE ET AL., supra note 23, at 276 ("The tools of systems dynamics – behavior-over-time graphs, stock-and-flow diagrams, causal loops, computer models, simulations, and arche-types – are all ways to help us more effectively understand those patterns and the systemic dynamics that drive them."). See also Acaroglu, supra note 83.

⁸⁶ See, e.g., The IHMC CmapTools software, https://cmap.ihmc.us/cmaptools/ (last visited, January 23, 2020).

⁸⁸ See, e.g., Bubbl.us, https://bubbl.us/ (last visited, January 23, 2020).

⁸⁹ See Davies, *supra* note 82, at 280 ("Processing information verbally as well as pictorially helps learning by virtue of using more than one modality.").

⁹⁰ See Karen L. Koch, What did I just do? Using Student-Created Concept Maps or Flowcharts to Add a Reflective Visual Component to Legal Research Assignments, 18 PER-SPECTIVES: TEACHING LEGAL RESEARCH AND WRITING 119 (Winter/Spring 2010). See also Heather Ann Forrest, Jurisprudence Meets Epistemology: Facilitating Legal Understanding and Meaningful Learning in Legal Education with Concept Maps, 18 LEGAL EDUC. REV. 73 (2008); Anne Hewitt, Give Me a Fish or Teach Me to Fish? Developing Law Students' Capacity for Lifelong Learning, 37 ALTERNATIVE L.J. 259 (2012); Aliza B. Kaplan & Kathleen Darvil, Think [And Practice] Like a Lawyer: Legal Research for the New Millennials, 8 LEGAL COMMUNICATION & RHETORIC: JALWD (Sept. 25, 2011); and Diane Murley, Innovative Instructional Methods, 26 LEGAL REFERENCE SERVICES Q. 171 (October 17, 2008). In Louis N. Schulze, Using Science to Build Better Learners: One School's Successful Efforts to Raise its Bar Passage Rates in an Era of Decline, 68 J. LEGAL EDUC. 230 (2019), the author discusses cognitive schema theory, and suggests that students "sketch" course content into schema.

⁹¹ See J. Garwood & A. Hammoud, *Teaching Students Concept Mapping to Enhance Critical Thinking in a Mental Health Nursing Course*, 3 J. COMM. PUB. HEALTH NURS. 186, p.4 (2017) ("Creating concept maps in a group learning environment allows students to develop self-awareness and reflect on relevant concepts"); and W. Wei & K-B Yue, *Using Concept Maps to Teach and Assess Critical Thinking in IS Education*, 22nd Americas Conference on Information Systems, San Diego, 2016, p. 2, describing concept mapping as a means of integrating new concepts into learners' cognitive structure.

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in legal education would have similar effect.92

This section discusses two forms of systems mapping: mind mapping and process mapping. As with surfacing systems, the boundaries of a student-created map must only identify the elements and relationships essential to the outcome observed or the change in outcome sought.93 The perspective of the person creating the document determines where a system map begins and ends. In this way, the complexity of most systems is balanced with a practical method for modeling and examining its structure. Setting boundaries makes mapping a plausible activity despite the paradigmatic tenet that all systems are embedded within one another, and that one individual's contacts may be innumerable.94 Because the assignment of a system's boundaries is subject to the discretion of the person making the evaluation, where they are set may reveal as much about that individual as the system under scrutiny.95 In advance of each pair of exercises described below, faculty could prepare an "Introduction to Systems Thinking" overview that includes a review of four tenets of the systems thinking paradigm discussed in Part I. A summary of the framework lays a foundation for the use of the surfacing and mapping approaches discussed below. Once the theoretical foundation has been laid, faculty may implement these activities as described, or with their own modifications.

A. Translating Mental Models Using Mind Mapping and the EPS Approach

Translating mental models is a learning activity that involves the process of drawing or diagraming a system as it appears in the mind's eye.⁹⁶ "A model is simply a way we compactly represent and under-

⁹² See Koch, supra note 90, at 119 ("Asking students to reflect back on and create a visual representation of their. . .experience incorporates both visual learning and active learning techniques."). See also Angela Passalacqua, Using Visual Techniques to Teach Legal Analysis and Synthesis, 3 LEGAL WRITING: J. LEGAL WRITING INST. 203, 205 (1997) ("Law professors have endorsed visual techniques as a way of improving law teaching."). Passalacqua's article cites several issues of Gonzaga University's Institute for Law School Teaching newsletter, The Law Teacher, containing articles on the use of graphics and visual aids in the classroom.

⁹³ Foster-Fishman et al., *supra* note 6, at 204 ("By clarifying a system's boundaries, change agents and researchers are able to identify what they consider outside the scope of an initiative and which system components they need to consider to ensure that compatible changes occur throughout the system.").

⁹⁴ For a challenge to this position see Davies, *supra* note 82, at 285–86 ("Others have noted that . . . the linear nature of concept maps mean that they are not adequate to capture more complex relationships between concepts.").

⁹⁵ Foster-Fishman et al., *supra* note 6, at 203 ("[B]oundary lines have explicit values associated with them: by clarifying who is included inside and outside the boundary, explicit statements are made regarding the perspectives, roles, and functions that are critical to and valued within the system.").

⁹⁶ Stringfellow, supra note 80, at 157 ("[M]ental models . . . are people's rich and com-

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stand an object, phenomenon, or system."⁹⁷ Documenting what one conceives of when reflecting on the structure of a system can facilitate discussion about how the connections between people, ideas, and outcomes are understood. These models are important because how one sees a situation (whether through complete information, through the lens of assumptions, or some mixture of the two) often dictates their response.⁹⁸ This relationship between mental model and choice of intervention is particularly important for law students whose professional currency will come to rest in their exercise of judgment. Scholars have noted that mental maps are frequently inaccurate.⁹⁹ However, flaws in mental models cannot be corrected until they are made explicit.¹⁰⁰ Only after students have created and shared their mental models can they become aware of any dissonance between their perceptions, what they have learned, and the knowledge and experiences of others.¹⁰¹

Visually displaying conceptual information is not a new idea, nor is it unique to systems thinking.¹⁰² Mind mapping, a practice attrib-

plex ideas about why problems are occurring in dynamic systems" (citing J.K. Doyle & D.N. Ford, *Mental Models Concepts for System Dynamics Research*, 14 SYSTEM DYNAMICS REV. 3–29 (1998)).). *See also* MEADOWS & WRIGHT, *supra* note 6, at 86 ("Everything we think we know about the world is a model.").

⁹⁷ Peters, *supra* note 25, at 1. *See also* K_{IM}, *supra* note 64, at 5 ("Mental models are the beliefs and assumptions we hold about how the world works.").

⁹⁸ Stringfellow, *supra* note 80, at 157 ("Mental models reflect the limited knowledge available to people (i.e. bounded rationality) and assumptions about how parts of the system intact with one another; they do not necessarily represent reality, facts or the truth. Nonetheless, mental models are important because they form the basis on which decisions are made."). *See also* SENGE ET AL., *supra* note 23, at 99 ("Our behavior and our attitudes are shaped by our mental models: the images, assumptions, and stories that we carry in our minds Because mental models are usually tacit, existing below the level of awareness, they are often untested and unexamined The core task of . . . mental models is to bring tacit assumptions and attitudes to the surface"). *See also* Joshua M. Epstein, *Why Model?*, 11 J. ARTIFICIAL SOCIETIES AND SOCIAL SIMULATION 12 (2008), for 16 additional reasons to engage in modeling.

⁹⁹ See, e.g., Senge & Sterman, supra note 85, at 1010–11; MEADOWS & WRIGHT, supra note 6, at 86–87.

¹⁰⁰ Id. at 1010.

 $^{^{101}}$ Id. ("Once team members have gone public with their mental models they can begin to discover internal inconsistencies and contradictions with data and other's knowledge.")

¹⁰² Davies, *supra* note 82. The use of concept maps, a technique that allows students to understand the relationships between ideas by creating a visual map of the connections, has been attributed to the philosophy of constructivism and the theory of meaningful learning. *See also* Selen Turkay, *Concept Maps: Are They Good for Assessment?*, HILT-Harvard Initiative for Learning and Teaching; and, Texas Collaborative for Teaching Excellence, *Critical Thinking Strategies: Concept Mapping*, http://www.austincc.edu/adnfac/collaborative/onsite_conceptmap.htm (last visited June 9, 2017). Constructivism holds that meaningful learning occurs as one takes in new information and processes it with previously acquired ideas and experiences. *See also* S. Atay & U. Karabacak, *Care plans using concept maps and their effects on the critical thinking disposition of nursing students*, 18 INT'L J. NURSING PRACTICE 233, 234 (2012) ("Concept mapping was developed by Novak

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uted to Tony and Barry Buzan, is a relatively straightforward approach to making mental models visible.¹⁰³ Such maps capture the associations made between concepts emanating from a central theme. "In mind mapping, any idea can be connected to any other."¹⁰⁴ Given its unconstrained format for documenting perceived connections, the use of mind mapping is very easy to teach and learn.¹⁰⁵ The flexibility of mind mapping as a conceptual representation is both the asset and limitation of this approach.¹⁰⁶ While mind maps tend to work best when brainstorming relationships of interest, they can be less effective in conveying any information about the quality of those relationships.

Persons seeking legal information and advocacy are, like all of us, connected to other humans and a variety of contexts that drive and inhibit our behaviors and beliefs. Students in a clinical or experiential learning course can use mind mapping to explore the relationships that influence and are influenced by the clients they serve. Encouraging students to translate their mental models of the social systems a client is involved in can highlight the power and value relationships that shape the client's positions on case related decisions, such as how to move the case forward, and what resolutions are considered acceptable. Taking the opportunity to determine the persons and organizations that make up a client's regular contacts can be a first step in creating a mind map that lays out the context of the client's, perhaps competing, concerns.

A client in a special education matter like Mrs. Washington, who is seeking assistance in making sure that her daughter's IEP is followed, has a broader context that cannot be separated from the legal analysis involved in a potential due process claim against her school district (see Figure 4, below). The elements of that context consist of Mrs. Washington's spouse, her other children, and the demands on her time and resources. These elements also include the organizations she interacts with and the constraints that she faces. The map below depicts a series of connections which acknowledge that Mrs. Washington is not just influenced by the unmet special education needs of her mid-

and Gowin based on Ausubel's theory of learning. It is a learning strategy that facilitates the attainment, organization, and presentation of knowledge.").

¹⁰³ Forrest, *supra* note 90, at 81("'Mind maps'depict a question or idea at the centre of a diagram from which related (but not necessarily interrelated) thoughts and concepts appear to flower or radiate."). The author cites Tony Buzan with Barry Buzan, *The Mind Map Book: How to Use Radiant Thinking to Maximize Your Brain's Untapped Potential* n.46 (1994).

¹⁰⁴ Davies, *supra* note 82, at 281.

¹⁰⁵ Martin J. Eppler, A Comparison Between Concept Maps, Mind Maps, Conceptual Diagrams, and Visual Metaphors as Complementary Tools for Knowledge Construction and Sharing, 5 INFORMATION VISUALIZATION 202–10, 206 (2006).

¹⁰⁶ Davies, *supra* note 82, at 282.

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dle child. She has competing concerns in the form of having to work two jobs, and an employer who will not allow her to adjust her work schedule around the needs of her children. Even though Mrs. Washington may have been referred to legal services for schoolrelated concerns, she may also need assistance with her child's SSI benefits. From the network of concerns that surround Mrs. Washington, one can see why meeting with law student interns is not always her number one priority.



Figure 4 – Mind map of Mrs. Washington's special education matter

Because such information is acquired over the life of the case as rapport is built, this use of mind mapping is well-suited to clinical or experiential courses where students have the opportunity to interview and counsel live clients throughout a semester or school year.¹⁰⁷ Mind maps can be revised at any time, and student maps should be updated to reflect new understandings gained from subsequent moments of client counseling or observation. Mapping can bring to the fore spots

¹⁰⁷ A sample mind map assignment would proceed as follows:

^{1.} Create a mind map by centering the reason your client is seeking legal services.

^{2.} Add key facts as connections to the central node.

^{3.} Add key contacts as connection to each fact node.

^{4.} Add citations to relevant law implicated as connections to each fact or to the presenting client problem.

^{5.} Add restatements of the presenting problem as new nodes connected to key facts and relevant law.

^{6.} Add new information as client counseling continues; legal research progresses.

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where more information is needed to identify or rule out further connectivity. As students' information and understanding changes, so too should their maps. Over time, students develop facility organizing information about their cases in a way that emphasizes how one factor ties into and shapes another. Law faculty using supervision meetings or case rounds as an opportunity to develop case management skills could require that these maps are revised in advance of or after each session. This assignment may include a requirement that students present multiple iterations of their client context map, or at least one map at the initial client interview and a revised map at case closure. Over the course of a semester, the series of mind maps would reflect the student's journey of understanding their client in that person's broader context.

As an approach that primarily highlights connectivity, mind maps can be effective tools for translating mental models of systems surfaced using the event-pattern-structure (EPS) approach. EPS has also been referred to as the "iceberg" approach.¹⁰⁸ Events are happenings that are readily observable in the present and can be recalled from memory. However, like the large submerged base of an iceberg, patterns of events and the structures that give rise to them are not always as perceptible as the events themselves. Just as the hidden base of an iceberg underlies the visible tip, it is the structure of a system that leads to patterns of occurrences, which result in observed events.¹⁰⁹ The EPS approach involves guiding students from the presentation of a single event (the client who presents with an outdated individual education program for her child with special education needs), to a pattern of events (a series of similar client complaints from parents of a particular school, or from a particular neighborhood), to beginning to identify what structures define the relationships between the elements (education laws, school policies, staff values, assumptions about a school or neighborhood, etc.) of those patterns. This structure represents the system that reproduces the same legal problem, even when a particular instance is addressed through some intervention.¹¹⁰

As this method involves only three steps, EPS is a straightforward and accessible way for faculty to engage their students in system recognition. Surfacing systems through this approach can lead to class-

¹⁰⁸ KIM, *supra* note 64, at 4.

 $^{^{109}}$ Stringfellow, *supra* note 80, at 156 ("Another way to think of structure is in terms of an iceberg: events are at the top but analysts need to move below the surface to identify patterns. Deeper still is the structure driving those patterns; finally, at the base are the values influencing the structure.").

 $^{^{110}}$ See Bardoel & Haslett, supra note 43, at 147. Systems thinking lends itself to case studies and discussions of situations where recurring patterns of ethical dilemmas are likely to be present.

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room discussions about the impact of different legal advocacy strategies or particular legal arguments. Students could be asked to identify the kinds of legal responses that implicate the different levels of the iceberg: Does direct representation only target the visible event? What impact can a single case have on the underlying structure? What other types of advocacy must direct representation be paired with in order to disrupt the structures below the surface? The activity is responsive to a natural inclination to use patterns to inform problem assessment and problem solving.¹¹¹ It also sets up the idea that interventions at the event level may not change patterns and are, thus, unlikely to alter the underlying structural level.¹¹² The analogy is easily grasped, and is applicable to a variety of legal content areas. Mind mapping can be introduced in tandem with EPS to encourage students to translate their mental models of the structures they have identified, whether through research or class discussion, to lie at the root of a problematic pattern of events.

When translating mental models with students enrolled in the University of Pittsburgh School of Law-Health Law Clinic, I first present them with a text which presents a series of events related to the ways that legal policies can act as social determinants of health.¹¹³ In response to the text, students are encouraged to use EPS to identify and discuss the systems at play in the narrative of the text.¹¹⁴ As a class we discuss the events in the article, followed by group consideration of whether these events were one-time occurrences or indicative of a pattern. Then, students are given the assignment (individually, in pairs, or in small groups) to create a map that depicts their mental model of one or more of the systems identified in the text. The activity concludes after students have the opportunity to present and critique their diagrams and those of their peers. The debrief emphasizes in-

¹¹¹ See Merritt, supra note 84, at 61–63. Here, the author points out the ways that patterns guide analysis and problem solving ("[H]umans solve problems largely through pattern recognition.").

¹¹² See D.H. Meadows, Leverage Points: Places to Intervene in a System, SUS-TAINABILITY INSTITUTE (1999). Meadows identified twelve types of interventions, or leverage points, and ordered them from most to least likely to induce sustainable change. She argued that interventions which targeted the variables associated with systemic outcomes are less effective than interventions targeting a system's rules, structures, goals, or paradigms.

¹¹³ For example, I have done this activity using Paul Tough, *The Poverty Clinic*, THE NEW YORKER (Mar. 21, 2011), and Olga Khazan, *Being Black in America Can Be Hazardous to Your Health*, THE ATLANTIC (July/Aug. 2018).

¹¹⁴ See Turkay, supra note 102. The author describes, in the notes on slide 14, a similar small group activity in which students are asked to create a concept map based on a given "problem, case study, or question about a key concept" that requires the analysis and synthesis of previously learned information into the new scenario. The author also suggests doing the activity as a whole class.

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sights gained from how parts of the identified systems are connected, and the obstacles or facilitating factors those connections might present to potential clients. I ask students where law and legal intervention factors into their diagrams. We discuss which specific policies are implicated in the systems they have identified, and how those policies drive the dynamics depicted in their diagrams. In Figure 5, for exam-

ple, the connection between living in Baltimore, "food swamps,"¹¹⁵ and obesity, led to a discussion of how redlining policies contributed to the concentration of fast food restaurants in inner-city neighborhoods.¹¹⁶

While students may not readily identify state-sanctioned efforts to maintain segregation as health policy, through the mapping activity, the public health consequences of such activity come to the fore. Because this activity relies on events described in articles, rather than on live clients, it can be adapted for use in doctrinal courses as well.

¹¹⁵ In contrast to food deserts, known as areas with little access to fresh food, areas where the primary accessible food option is fast food are known as "food swamps." See D. Rose et al., Deserts in New Orleans? Illustrations of Urban Food Access and Implications for Policy, National Poverty Center Working Paper (2009). See also Kate Meals, Nurturing the Seeds of Food Justice: Unearthing the Impact of Institutionalized Racism on Access to Healthy Food in Urban African-American Communities, 15 SCHOLAR 97, 138 (2012).

¹¹⁶ Supermarket redlining has been suggested as a possible reason some low-income or minority areas lack larger grocery stores. *See* U.S. Department of Agriculture, *Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences*, ECONOMIC RESEARCH SERVICE (June 2009), https://tinyurl.com/tl53fpc (last visited January 23, 2020).



Figure 5 – Sample mind map created by a law student¹¹⁷

There are multiple learning objectives associated with translating mental models of systems through mind mapping and surfacing systems through EPS.¹¹⁸ Conducted as part of an interprofessional course where nursing students study the role of law as a social determinant of health alongside law students, the mapping exercise underscores that social problems resulting in both acute health care and legal needs can stem from a common source; reinforcing the important role of interprofessional collaboration in complex problem solving. To incorporate meta-cognitive learning, the EPS/mind mapping activity can conclude with discussion and reflection on the process of translating mental conceptions of events into diagrams. Ultimately these activities service the overarching pedagogical goal of encouraging students to see persons with legal needs as participants in a complex web of systemic structures. The flexibility of mind mapping in tandem with the simplicity of EPS as an approach to surfacing systems make this activity

- Students will develop systems awareness by translating mental models into visual models through mind mapping
- Students will identify balancing and reinforcing relationships as drivers of systemic outcomes
- Students will evaluate the role of law/legal intervention in their created system (mind) map
- Students will assess opportunities to use legal policy or legal advocacy as a positive systemic intervention
- Students will identify leverage points where legal and/or non-legal resources (e.g., interprofessional collaboration) could create different systemic outcomes

¹¹⁷ This map was created by a law student based on Khazan, *supra* note 114.

¹¹⁸ Some sample learning objectives include the following:

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adaptable to any legal subject matter.

B. Distinguishing Positive and Normative Outcomes with Process Mapping

Systems can be surfaced where observed outcomes differ from the stated purpose of an institution, process, or series of relationships. Another approach to building awareness of the systemic context in which law-related problems emerge and are addressed is to see events as representing both positive and normative system outcomes. This approach involves responding to two prompts: What is happening? and, what are the dominant narratives ascribed to that happening? The answer to the first question can be considered a positive system outcome, while the answers to the second question reveal normative system outcomes.¹¹⁹ Insight into normative system outcomes requires gathering information from stakeholders and other knowledge resources as to the stated purpose for a particular series of events. Identification of positive system outcomes requires observation and reflection on those same events.¹²⁰ Distinguishing positive and normative outcomes allows the advocate to identify instances of incongruity between observed outcomes and how those outcomes are discussed or framed. The utility of this approach to system recognition lies in its exposure of value-based assumptions, which can contribute to systemic outcomes and mask the processes that hinder systemic change.

Law-related systems are frequently observed to produce results that contrast with their stated public policy purposes.¹²¹ Acknowledgement of positive outcomes "almost always reveals that the system is doing things and producing results that participants in the system

¹¹⁹ See LoPucki, *supra* note 13, at 486 ("The attribution of goals to systems is merely shorthand for one of two propositions. The first, employed in positive analyses, is definitional, holding that the goals of a system are the results that the system in fact produces. The second, employed in normative analyses, equates the goals with the results that the researcher believes desirable. One who wishes to do so can conduct systems analyses by specifying one of these propositions as a substitute for attributing goals to systems.").

¹²⁰ See MEADOWS & WRIGHT, supra note 6, at 14. Meadows argues that the positive method is the only meaningful approach to identifying system goals ("Purposes are deduced from behavior, not rhetoric or stated goals."). See also LoPucki, supra note 13, at 503. LoPucki states that latent, positive outcomes should be treated as intended results, because the search is for the goals of the system, not those of the system's participants or designers. See STROH, supra note 24, at 16–17 ("One of the benefits of systems thinking is that it helps people understand that purpose that a system is accomplishing. This prompts them to reflect on the difference between what they say they want and what they are actually producing.").

¹²¹ See LoPucki, supra note 13, at 485 ("Most legal scholars, judges, and legislators regard law-related systems as purposeful, and they do not hesitate to attribute to laws goals or purposes, even ones distinct from the goals that the legislators who enact them may have had in mind.").

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did not intend or anticipate."122 For example, the U.S. Department of Health and Human Services, which has a particular stake in the administration of its child welfare system, describes the program as "a group of services designed to promote the well-being of children by ensuring safety, achieving permanency, and strengthening families to care for their children successfully."123 The same system has been critically observed by legal scholars as having the positive or "true purpose" of self-perpetuation,¹²⁴ as well as the regulation and punishment of black mothers.¹²⁵ School push-out, as another example, is an observable phenomenon of disproportionate disciplinary removals among students of color. A positive view of this system, that a particular school has in place an effective system for suspending and expelling its African-American students, likely contrasts with the normative position of fairly applied standards held by those teachers and administrators who participate in the disciplinary procedures for each individual student. Attempting to describe challenging outcomes in more objective terms "has been useful in drawing attention away from problematic people" and concentrating emphasis on problematic systems.¹²⁶ While the results of a system may not necessarily be the intentions of participants in the system,¹²⁷ systemic actors may be involved in a public dialogue of socially-neutral or politically-safe normative goal attribution, while reaping the benefits of supposedly unintended systemic consequences.¹²⁸ Examples of facially neutral yet effectively discriminatory policies exist across legal subject matter.

On the other hand, it is impossible for observers to be completely neutral, despite their best efforts to parse structural outcomes objectively. All observations of system performance are normative to some extent, because every human makes implicit judgments and assump-

¹²² Id. at 502.

¹²³ How the Child Welfare System Works, CHILD WELFARE INFORMATION GATEWAY (Washington, DC: U.S. Department of Health and Human Services, Children's Bureau 2013).

¹²⁴ See Cooper, supra note 68, at 259-66.

¹²⁵ See, e.g., Dorothy Roberts, *Prison, Foster Care, and the Systematic Punishment of Black Mothers*, 59 UCLA L. REV. 1474, 1483 (2012) ("If you go into dependency court in Chicago, New York, or Los Angeles without any preconceptions, you might conclude that the child welfare system is designed to monitor, regulate, and punish black mothers.").

¹²⁶ See Canyon, supra note 22, at 442, discussing that systems thinking, as described by Peter Senge in the 1980s, "has been useful in drawing attention away from problematic people and enabling people to concentrate on problematic systems."

¹²⁷ See LoPucki, supra note 13, at 486.

 $^{^{128}}$ *Id.* at 487 ("Social groups often choose to employ systems that contain inconsistencies or that work inefficiently . . . for example . . . the law-related system for coercive collection of debts. The legal remedies for creditors suing to collect under state law are notoriously inefficient. Some scholars refuse to work on improving them, however, because improvements would benefit the creditor class.").

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tions. Positive outcome assessments could simply reflect an observer who has been conditioned to perceive the needs of a particular group more sensitively than those of other groups. The exercise here is not to assert positions that are absolutely free from bias. The objective is to distinguish *what is observed* from how those observations are *characterized*. Once contrasting normative and positive outcomes are identified, students should be encouraged to describe and discuss the "relationships between an initiative and its intended and unintended outcomes."¹²⁹ Engaging in the process of distinguishing what is normative from what is positively observed can be a useful approach to surfacing the assumptions of the observer, as well.

Once both positive and normative outcomes have been surfaced, students can use process mapping as an approach to modeling the system as intended, as well as the system as observed. Process maps can document the understood differences between how a process is supposed to unfold, according to formal rules, and how it actually takes place from the perspective of the client's experience. In contrast to mind mapping which documents connections, process maps depict ordered steps or experiences that are intended to bring about some result. Borrowed from the health care¹³⁰ and organizational improvement fields,¹³¹ process mapping is a tool for modeling institutional structures that are not producing expected or desired results.

¹²⁹ See FSG's Characteristics of Complex Systems Chart, https://www.fsg.org/blog/put-ting-systems-thinking-practice (last visited July 26, 2018).

¹³⁰ See Timothy M. Trebble et al., Process Mapping the Patient Journey through Health Care: An Introduction, 341 BMJ 394 (2010) ("Process mapping allows us to 'see' and understand the patient's experiences by separating the management of a specific condition or treatment into a series of consecutive events or steps. . . the sequence of these steps between two points (from admission to the accident and emergency department to discharge from the ward) can be viewed as a patient pathway or process of care.").

¹³¹ See S.M. Fiore & J.W. Schooler, *Process mapping and shared cognition: Teamwork and the development of shared problem models, in* TEAM COGNITION: UNDERSTANDING THE FACTORS THAT DRIVE PROCESS AND PERFORMANCE 133–52, at 134 (E. Salas & S.M. Fiore eds., Washington, D.C., American Psychological Association, 2004) ("Process mapping was initially developed to assist teams in process redesign being implemented in the context of organizational improvement.").



Figure 6 – Process map of investigated "social safety net"

Figure 6 is a process map of a situation described in Gary Blasi's 1987 article, "Litigation on Behalf of the Homeless: Systematic Approaches."¹³² The focus of Blasi's piece is on the problems that the homeless face in their attempts to obtain shelter, and how homeless advocates can increase their impact by adopting legal strategies "based on an objective and empirical understanding of the systems and institutions that place people on the streets and keep them there."¹³³ While the author does not discuss systems thinking or process mapping, his article has been acknowledged by other scholars as an example of how systems analysis can be conducted as a part of legal practice.¹³⁴

In Figure 6, the institutional interaction intended between the city's homeless population and its hotel shelter program is depicted as a horizontal flow within the process map. Places where individuals are routed out of the process, based on a client's reported experience or an advocate's observation, are indicated vertically at the place of departure. The factors that can cause members of the homeless population to be routed out of the benefits process are "an arbitrarily stringent documentary identification requirement," which many transient persons were unable to meet, and quotas established by welfare offices, which predetermined how many homeless persons they would assist.¹³⁵ Here, the problem was not that individuals were getting vouchers, then somehow never making it to the hotel for shelter. Rather, individuals were not making it through the welfare bureau's requirements to obtain the voucher in the first place. Legal interventions could then be formed to target the structural barriers. Once these processes were identified, litigation efforts on behalf of the effected homeless were carried out, resulting in a temporary restraining

¹³² Blasi, *supra* note 34.

¹³³ Id. at 137.

¹³⁴ See LoPucki, supra note 13, at 479 n.7, describing Blasi's article as a "self-conscious application of systems analysis in law"; and Anabtawi & Schwarcz, supra note 31, at 83.

¹³⁵ Blasi, *supra* note 34, at 138.

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order against the bureau.

Process mapping is a relatively straightforward modeling tool that can be easily presented and used in both doctrinal and clinical classrooms. "Mapping the Client Process" is my name for an activity that calls on law students to utilize the system recognition skills involved in positive and normative goals assessment, in tandem with process mapping, to compare and contrast the flow of a law-related institution with a client's experience of interacting with that institution.¹³⁶ Live clients are not necessary for engaging in this activity. Faculty in doctrinal classes may engage this activity by using sources in the news or other media that illustrate the differences between stated policy and how those rules are followed (or not) in real-world experiences.¹³⁷ Discussion can be facilitated by asking what parts of the process may have been obscured from the client's perspective and why; what may explain why portions of the process were more difficult for the client to navigate than others; and how could the process be redesigned to mitigate frustration, disengagement, etc. with the law-related process.

The student who created the map in Figure 7, below, commented, "[E]ven though I already knew about the cycle of poverty, it actually drained me emotionally making the chart. The more I looked at it, the more I thought that this system was set up to fail. Of course, this also says nothing about the fact most people will have to struggle through this process multiple times, each time with less resources and more resentment for the system. I would argue that this emotional and financial drain is still the largest failure of the system for many people involved." Law students are also encouraged, as a part of the exercise,

¹³⁶ This reflective activity was inspired by the problem-solving approach described in Blasi's article (*supra* note 34). Blasi emphasizes that understanding the societal forces that cause homelessness is key to maximizing limited legal services resources. Using process mapping in similar situations to lay out different possibilities for the forces driving social problems can be a valuable tool in determining legal strategy when followed up with factual and legal investigation. Considerations of the contrast between the process as prescribed and the process as experienced lead Blasi's advocacy team to focus their efforts on challenging the conditions in hotels accepting shelter vouchers.

¹³⁷ A sample process map assignment would proceed as follows:

For at least one law-related process (e.g., an administrative due process hearing), create (individually or in groups) a process map that depicts the system created by the rules associated with that proceeding. Then, create a second process map that depicts the same system from the perspective of a client (in an experiential course, or the perspective of clients as derived from a text used in a seminar course). Consider the client's experience as a process; plot out the steps the client actually went through from case open to case closure.

The students' first process map should reflect a normative understanding of the system's purpose. The second map should represent a more positive, observation-driven view of the system. In class, once the maps have been turned in, students are prompted to do a side-by side comparison, or overly the process map of system as observed onto the map of the system as prescribed.

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to brainstorm alternative legal interventions that could be used to address the gaps between the stated process and lived (or observed) experiences. Students are asked where on their maps lawyers typically intervene. They are encouraged to consider other locations where legal intervention, if available, could change the order of the process in ways that improve client outcomes. Some of the students with whom I worked through this exercise identified the creation of legal literacy resources, public education initiatives, and interdisciplinary partnerships as advocacy imperatives. At the same time, students recognized complex connectivity and limited points of entry for lawyers as obstacles for creating structural change. In this way, the students meaningfully considered the limits for change within established processes as well as possibilities for service innovations.¹³⁸ One student commented, "[W]e don't have to wait to be invited into these systems; we don't have to be absent just because we weren't invited!" The learning objectives associated with this activity¹³⁹ support the broad pedagogical goal of attuning law students to client context as it is shaped by systems of rules and institutional norms. Further, by focusing on the constraints and facilitating factors of institutional structures, students have an opportunity to develop their capacity to use information about relationships between person and system to develop new ways of advocating, and to critique the limitations of the attorney's role as prescribed by the identified institution.¹⁴⁰

¹³⁸ See Ashar, supra note 11, at 230 ("While ill-structured problems with high degrees of uncertainty can be found in all sectors, local manifestations of massive and intractable problems, such as poverty, racism, and exploitation offer a great deal of space for law students to gain experience in process design").

¹³⁹ Some sample learning objectives include the following:

Students will develop their ability to make positive and normative assessments of lawrelated processes

[•] Students will discuss whether any identified differences in the law as written versus the law as experienced indicates a need for alternative legal strategies

[•] Students will consider how their prescribed role in a legal process creates or limits opportunities for alternative legal strategies.

¹⁴⁰ See Payton, supra note 5, at 245 ("There is therefore reason to acquire understanding of basic structures... in order to know what questions to ask when one finds oneself in unfamiliar territory. Systems level understanding is what gives good lawyers their resourcefulness and peripheral vision, their feel for context, their ability to anticipate the full range of legal issues and arguments that might be available to a client and to understand how a client's cause should be positioned to enhance the likelihood of favorable outcomes.").



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Systems thinking raises contextual awareness by highlighting the complex relationships between legal practice, legal institutions, and the individual.¹⁴² Operationalizing the systems thinking paradigm through surfacing and mapping systems allows for an exploration of "the tension between the role of the individual and the role of formal

 $^{^{141}}$ See 20 C.F.R. 416.924 for an explanation of the SSI process as dictated by the Federal Regulations.

¹⁴² Anabtawi & Schwarcz, *supra* note 31, at 83 ("Systems analysis of law-related systems formalizes and makes explicit the relationships between law and its broader contexts.").

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and informal organizational structures in determining behavior."143 When educators use systems thinking, they simultaneously promote critical thinking while producing visual texts which can be used to evaluate students' critical thinking skills.¹⁴⁴ I know that my students can surface systems when they can list the elements contained within a system they have identified. They can distinguish between positive and normative characterizations of the system's outcomes, and describe the feedback between components of a system. As students learn to use one or more of the tools described in this section to increase their capacity to consciously recognize systemic behavior, they may also become aware of their mental models of the systems at work in the subjects they are studying and in the lives of their clients.¹⁴⁵ Similar to the use of mapping in some nursing schools, where "the concept map assists students to correlate client's diagnoses, symptoms, treatments, and interventions and then problem solve in clinical decision-making,"¹⁴⁶ law students should be encouraged, as part of the cultivation of their critical thinking capacities, to create maps that reflect the connectivity of the client to the people and institutions implicated in a presenting legal problem. Systems thinking has academic merit, because it challenges students to engage in the mental process of deconstructing the systems which create the context of the legal problems and social challenges they will face as attorneys.147

¹⁴³ Bardoel & Haslett, *supra* note 43, at 135.

¹⁴⁴ Texas Collaborative for Teaching Excellence, *Critical Thinking Strategies: Concept Mapping*, http://www.austincc.edu/adnfac/collaborative/onsite_conceptmap.htm (last visited June 9, 2017) ("Development of the concept map forces the student to act upon previous knowledge, connect it with new knowledge and apply it.").

¹⁴⁵ See Bardoel & Haslett, *supra* note 43, at 146 ("Systems thinking tools . . . may not work for all students. However, we have found that as an instructional method, systems thinking tools . . . create considerable and intense debate because students are able to draw their view of the world and expose their cognitive frames or mental models.").

¹⁴⁶ T. Nirmala & B.S. Shakuntala, *Concept Mapping – An Effective Tool to Promote Critical Thinking Skills Among Nurses*, 1 NUJHS 21, 22 (December 2011). *See also* Jaime L. Gerdeman et al., *Using Concept Mapping to Build Clinical Judgment Skills*, 13 NURSE EDUCATION IN PRACTICE 11-17 (2013), and C. Joseph et al., *Structured Feedback on Students' Concept Maps: The Proverbial Path to Learning?*, 17 BMC MEDICAL EDUC. 90 (2017).

¹⁴⁷ See M. Parkhurst, Tools for Supporting Systems Thinking and Change, FSG BLOG (Apr. 21, 2016), https://www.fsg.org/blog/tools-supporting-systems-thinking-and-change (last visited, January 25, 2020) ("[T]here is significant value in the process these tools facilitate and the conversations they stimulate – not just in the products they produce."). See also Anabtawi & Schwarcz, supra note 31, at 83 ("The systems analysis methodology provides insights into law's role in systems that traditional methods of legal analysis are likely to miss."). See also Sally Kift, 21st Century Climate for Change: Curriculum Design for Quality Learning Engagement in Law, 18 LEGAL EDUC. REV. 1, 21 (2008) ("It is what the student does . . . with the various resources and inputs they are given – how they construct their own understandings and new knowledge . . . that is critical.").

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III. A Systems Thinking Framework Contributes to the Evolution of What it Means to "Think Like a Lawyer"

Systems thinking offers a paradigm applicable to legal education and a suite of practices that can be used to bring the context of legal advocacy into relief for law students. Systems thinking gives a name to, and roots in theory, the work of identifying the substance of complex interconnected social and institutional networks. Raising law students' contextual awareness through surfacing and mapping systems thinking activities like those described in Part II, encourages law students to reflect upon how their client's legal needs are shaped by the systemic structures the client inhabits. Further, such awareness promotes reflection on the dual roles that attorneys play, as actors who perpetuate – and as advocates charged with changing – systemic structures. Incorporating opportunities to use systems thinking frameworks during legal education, the site where professional identity and habits foment, contributes to the evolution of what it means to think like a lawyer.

The expectations bundled in the expression "thinking like a lawyer" come from how and what law students are taught.¹⁴⁸ Traditional notions of what it means to think like a lawyer have been derived from the widespread use of Langdell's "Socratic" case dialogue method.¹⁴⁹ This approach to legal education aims to develop deduc-

¹⁴⁸ See John O. Mudd, *Thinking Critically about "Thinking Like a Lawyer*," 33 J. LEGAL EDUC. 707 (1983) ("Ask any lawyer or law professor to identify the most important features of a sound legal education and inevitably at the head of the list will be training to 'think like a lawyer.' No one can argue with that."). See also James R. Elkins, *Thinking Like a Lawyer: Second Thoughts*, 47 MERCER L. REV. 511, 515 (1996). Elkins quotes Sanford Levinson for the idea that learning to think like a lawyer is, "central to the ideology of legal education."

¹⁴⁹ See William M. Sullivan et al., Educating Lawyers: Preparation for the Profession of Law (Summary), The Carnegie Foundation for the Advancement of Teaching 5 (2007) ("The process of enabling students to 'think like lawyers' takes place . . . primarily through the medium of a single form of teaching: the case-dialogue method."). See Carrie J. Menkel-Meadow, Thinking or Acting Like A Lawyer? What We Don't Know About Legal Education and are Afraid to Ask, in THE STATE OF LEGAL EDUCATION RESEARCH: THEN AND NOW AND TOMORROW 4 (Ben Golder et al. eds., TaylorFrancis/Routledge, 2019) ("Christopher Columbus Langdell's ... 'Socratic' or case method ... was based on an idea . . . If law students read enough cases in the same subject area they would 'induce' the applicable rules by watching them being applied by common law judges, and ... could master the legal analysis skill of 'distinguishing' like cases from unlike cases."). Though widely used, the Socratic method has also been critiqued as a means of training law students. See John B. Garvey & Anne F. Zinkin, Making Law Students Client Ready: A New Model in Legal Education, 1 DUKE FORUM FOR LAW & SOCIAL CHANGE 101, 102 (2009) ("The Langdellian method not only undertrains students generally, it disproportionately alienates groups traditionally underrepresented in law schools, including women and minorities.").

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tive reasoning and analogic thinking in students. Teaching in this manner reinforces the expectation that a lawyer must be able to engage in a linear, reductionist approach to identifying, assessing, and applying legal rules. She must distinguish relevant facts from the irrelevant, and make arguments as to which rules, as defined by case law or by statute, apply.¹⁵⁰ The demonstration of these skills involves a thought pattern associated with normative ideas about how attorneys process information.¹⁵¹ This construct is reinforced, implicitly and explicitly, by what is expected of students during their three years of law school.¹⁵² Much of legal practice is presented as monodisciplinary.¹⁵³ Opportunities for interprofessional education in law school, while growing, remain limited in number.¹⁵⁴ Past admonishment (whether serious or tongue-in-cheek) that first-year law students must "acquire the ability to think precisely, to analyze coldly, to work within a body of materials that is given, to see and see only, and manipulate, the machinery of the law . . . " still rings true today.¹⁵⁵

Scholars have raised challenges to this prevailing norm of what it means to think like a lawyer. Some see the idea of the attorney as a cold mechanic of the law as too restrictive in scope.¹⁵⁶ Others find the

¹⁵² See Wizner, supra note 151, at 589 ("[T]he education students receive in law schools not only teaches them the craft of law, but also inculcates professional values, explicitly or implicitly").

¹⁵⁰ See Menkel-Meadow, *supra* note 149, at 6 ("Being asked how a change of facts might change the application of a particular rule, students were being asked to 'think like a lawyer,' meaning learning to distinguish, with philosophically rigorous standards, what cases were like each other enough to be treated the same under the law, and correspondingly, which cases, if not like, deserved a different rule to be applied.").

¹⁵¹ See Stephen Wizner, Is Learning To "Think Like a Lawyer" Enough?, 1 YALE L. & POL'Y REV. 583, 587 (1998) ("Thinking like a lawyer requires analytical rigor, logical reasoning, the ability to recognize and draw distinctions, and an ability to advocate either side of an issue logically and persuasively, whether or not one agrees with or believes in the position one is advancing."). The generalization that lawyers think in these ways as a lifestyle, not just as a professional skill, is reflected in popular media. See Kevin McKeown, Thinking Like a Lawyer is a Technique – Not a Lifestyle, ABOVE THE LAW (June 11, 2014), https://tinyurl.com/s6298j6 (last visited, January 25, 2020).

¹⁵³ See Mudd, supra note 148, at 706 (Mudd touches on, "The general absence of interdisciplinary contact between inhabitants of the law school and others on university campuses").

¹⁵⁴ See Lisa Radtke Bliss et al., *Interprofessional Education, in* BUILDING ON BEST PRACTICES: TRANSFORMING LEGAL EDUCATION IN A CHANGING WORLD 1 (Deborah Maranville et al. eds., 2015). In the introduction, the authors note that, while there are many educational benefits to interprofessional education, such opportunities in law school are outside the norm.

¹⁵⁵ See KARL N. LLEWELLYN, THE BRAMBLE BUSH: ON OUR LAW AND ITS STUDY 116 (1960). The release of an annotated edition of this text in 2016 suggests an enduring relevance to Llewellyn's message. See also Wizner, supra note 151, at 586–87.

¹⁵⁶ See Kristen Holmquist, *Challenging Carnegie*, 61 J. LEGAL EDUC. 353 (Feb. 2012). See also Elkins, supra note 148. Elkins questions whether legal thinking is a distinctive form of thought.

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archetype stilting to the morals of the profession.¹⁵⁷ Because what legal education asks of its students is tied to how they will define and address law-related problems, the way that faculty engage law students in the classroom can have a meaningful impact on the habits of thought lawyers exhibit in professional practice. In order for what it means to "think like a lawyer" to evolve, teaching strategies must evolve as well.¹⁵⁸ Classroom learning rooted in the tenets of systems thinking can serve to shift the norms of the profession by promoting an expectation that effective lawyers pull structural considerations into their reflective practice.

The surfacing and mapping activities discussed in this article are, essentially, critical reflection exercises. Reflection is an active learning process, which leads to the internalizing of information.¹⁵⁹ A lawyer's reflective practice should involve a combination of thinking and doing. Law students may be more occupied with the work of "doing" client-related work than they are with reflecting on the process of handling cases, or the circumstances that gave rise to the case in the first place. Such students may behave similarly to those firm attorneys, who "are so busy swimming their next lap that they don't readily see how to swim better. They just need to swim that next lap."¹⁶⁰ Clinic students, for example, may respond to their case responsibilities as one long to-do list, rather than as an opportunity to meaningfully engage in the process of client representation and professional identify formation. Ticking off tasks can obscure opportunities for reflection.

As discussed in Part II, mind mapping can be considered a selfreflective practice that draws the law student's attention to the systemic context of the client. Similarly, process mapping can be used to

¹⁵⁷ See Wizner, supra note 151, at 583 ("The training of students to 'think like lawyers' may very well have contributed to the erosion of professional values by implicitly authorizing students to become amoral, technically proficient advocates . . . who practice law without regard for the human, social and moral implications of their choices and actions as lawyers."). See also Ashar, supra note 11, at 227 ("Lawyers are taught at an early point in their education to exercise detachment and to assess factual stories without the benefit of preexisting moral or communitarian commitments.")

¹⁵⁸ See Gail A. Jaquish & James Ware, Adopting an Educator Habit of Mind: Modifying What it Means to "Think Like a Lawyer," 45 STAN. L. REV. 1713 (1993) ("We suggest modifying traditional law school teaching habits of mind to encourage law students to develop cognitive skills beyond those currently embodied in 'thinking like a lawyer.'").

¹⁵⁹ See Koch, supra note 90, at 121 ("[T]he reflection phase of the learning process is considered to be the one critical for the information to be internalized for future use by the student."). See also Robin A. Boyle, Employing Active learning Techniques and Meta Cognition in Law School: Shifting Energy from Professor to Student, 81 U. DET. MERCY L. REV. 1, 3–4 (2003) ("Actively engaged students absorb complex material better than if they have been taught traditionally.").

¹⁶⁰ Damien A. Riehl, *How Systems Thinking and Automation are Transforming Modern Legal Practice*, HENNEPIN LAWYER 18–21, at 20 (Jan./Feb. 2017).

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draw attention to the roles that attorneys play both in perpetuating and challenging existing system structures. Asking law students to parse and depict their mental models of the ties between law, legal institutions, and other client-impacting social networks essentially assigns them a progression of self-reflection questions. Students must ask themselves: What factors do I think are involved in the production of an identified outcome? How do I think they are interconnected? How can I communicate my hypothesis of inter-connectivity to others? Is my hypothesis consistent with new information I have received? Does my hypothesis enable me to come up with ideas for changing the identified outcome? This progression offers a rubric for the critical thinking skills involved in how systems thinkers frame complex problems. Accessed in this way, systems thinking moves individuals toward a "contextual perspective."¹⁶¹ Consciously engaging systems thinking as the paradigm informing one's reflective practice can undergird the mindset and habits needed to advance a new conception of one who thinks like a lawyer: the legal professional who sees clients as both individuals and as part of a matrix of systemic influences; and the legal professional who sees their position as lying in the balance between their roles as system participant and as systems change agent.

A. The Legal Professional Who Sees Clients in the Context of a Systemic Matrix

Scholars have reinforced the importance of advocacy practices that amplify the narrative and social context of the client.¹⁶² Conceiving of the client as a member of a systemic structure is a further invitation for emerging attorneys to see their client as a complex individual for whom the presenting legal problem is only one aspect of their lives. The approach is not meant to diminish the humanity of those seeking legal services. Rather, reflecting on the client's circumstance through an exercise rooted in systems thinking can attune the advocate to a more nuanced understanding of how clients move through structures that can set parameters on their choices.

Law professors may observe students who struggle to make sense

¹⁶¹ See Timothy Casey, *Reflective Practice in Legal Education: The Stages of Reflection*, 20 CLINICAL L. REV. 317, 321–22 (2014). Casey's five stages of reflection track the movement of students from objective to contextual perspectives.

¹⁶² See Carolyn Grose, Storytelling Across the Curriculum: From Margin to Center, from Clinic to the Classroom, 7 J. Ass'N OF LEGAL WRITING DIRECTORS 37 (2010). See also Patricia Easteal, Teaching About the Nexus Between Law and Society: From Pedagogy to Andragogy, 18 LEGAL EDUC. REV. 163 (2008) ("[E]ffective legal practice also requires an understanding of the societal context in which the law is practiced, and such an understanding is not easily imparted by the traditional approach to teaching law").

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of the relationship between individual culpability in decision-making (e.g., outcomes determined by lifestyle choice) and systemic drivers of social inequality and outcome disparity (e.g., disproportionate legal outcomes based on race, zip code, or level of educational attainment). Such struggles may make sense. Little in the mainstream of legal education prepares law students to engage in critical thinking about how systemic or structural factors operate to impact clients by obstructing or facilitating choice autonomy.¹⁶³ The "Mapping the Client's Context" activity described above requires students to reflect upon what they do and do not know about the client's interactions with other social and institutional systems. Students can be encouraged to think of their maps as a way of "showing their work,"¹⁶⁴ as one might in a math class, in order to demonstrate the depth of their understanding of how the client and the client's identified legal needs are situated in systems of influence; whether they consist of relationships with other people, interactions with institutions, or the strictures of ideology. Students can be prompted to ask themselves, which interactions are influencing factors on my client, and which interactions represent places where my client exerts influence? In surfacing the systems that involve these dynamics, students are forced to call their assumptions to the front of the mind, and put them on paper. Review and reiteration of a created mind map generates opportunities for faculty to engage with a student about their basis of knowledge for the set of connections depicted. This activity directs law students to reflect in such a way that allows them to confront, and then critique, the way they see their client and their client's social context. The goal is to matriculate law students who are able to recognize their clients as persons who are a part of a broad systemic nexus that extends beyond, even as it shapes, their presenting legal problem.

Traditional notions of thinking like a lawyer have not focused on the big picture context of the client. Rather, these calls have come from "rebellious" lawyers and law faculty who have had to advocate their way into the academic mainstream of legal education, while si-

¹⁶³ Clinical law professors have been in a unique position to expand the focus of traditional approaches to client problem solving by incorporating instruction that implicitly, if not explicitly critiques the structures at the root of disparity and other social challenges. *See, e.g.*, Margaret Martin Barry, Jon C. Dubin & Peter A. Joy, *Clinical Education for This Millennium: The Third Wave*, 7 CLINICAL L. REV. 1 (2000); and Ann Shalleck, *Clinical Contexts: Theory and Practice in Law and Supervision*, 21 NYU REV. L. & Soc. CHANGE 109, 140 (1994) ("Students in clinical courses have a unique opportunity to combine analysis of their own experience with critical systemic analysis.").

¹⁶⁴ See Suzanne Darrow-Kleinhaus, *Developing Professional Identity Through Reflective Practice*, 28 TOURO L. REV. 1443, 1446 (2012) ("If we were to teach these areas [of legal study] deliberately, we would make visible that which is largely invisible – the process by which we think – and provide a model for our students to follow.").

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multaneously advocating for their clients.¹⁶⁵ Emphasizing that clients are system actors and participants challenges the idea that the legal problems of an individual must be treated in isolation from similar population-level needs. When the student sees, as with the example of "Kiarra," above,¹⁶⁶ that it is difficult to extricate legal problems from economic, environmental, and health care concerns, it underscores the position that problems resulting from the convergence of multiple factors require the involvement of multiple disciplines to address.¹⁶⁷ The ability to meaningfully reflect upon the structural origins of a social outcome is a necessary precursor to developing and implementing new legal problem-solving approaches and other co-created innovations. To the extent that legal education continues to uphold traditional conceptions of legal thinking, it may be producing advocates who will only recognize opportunities for legal advocacy within limited frameworks.168 The reflection that comes with surfacing and mapping systems related to client context situates legal practice as a single node within a larger system. Such learning creates an opportunity for law students to see collaboration with clients and relevant stakeholders as an important component of lawyering for system-level change.

B. The Legal Professional Who Sees Their Practice in the Context of a Systemic Matrix

Lawyers participate in the perpetuation of existing systems, while bearing a simultaneous responsibility to serve as architects and reformers of these systems.¹⁶⁹ This dyad is important to highlight for law students who are in the process of professional identity formation. When I first got into legal services work, I was told the story of the starfish.¹⁷⁰ The moral of the story is, essentially, not to feel inadequate

¹⁶⁵ See Gerald Lopez, Rebellious Lawyering: One Chicano's Vision of Progressive Law Practice (New Perspectives on Law, Culture, and Society) (Westview Press 1992).

¹⁶⁶ See Figure 5.

¹⁶⁷ See Menkel-Meadow, *supra* note 149, at 11 ("To what extent do we now understand that law and legal institutions are not autonomous domains, but are constituted by and constituting other social institutions?").

¹⁶⁸ See Marc Galanter, Why the "Haves" Come out Ahead: Speculations on the Limits of Legal Change, 9 LAW & SOCIETY REV. 95, 153 (1974) ("The more that lawyers view themselves exclusively as courtroom advocates, the less their willingness to undertake new tasks and form enduring alliances with clients and operate in forums other than courts, the less likely they are to serve as agents of redistributive change.").

¹⁶⁹ See Fred C. Zacharias, *The Lawyer's Role in Democracy, Promoting Social Change and Political Values, True Confessions About the Role of Lawyers in a Democracy, 77* FORDHAM L. REV. 1591, 1604 (2009) ("Lawyers are the mechanics of the legal system."). *See also* Payton, *supra* note 5, at 244 (Payton notes, "the fact that many of our students intend to become the "architects and builders" of society".).

¹⁷⁰ See LOREN EISELEY, THE UNEXPECTED UNIVERSE (Harvest 1st ed. 1972).

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or unsuccessful if you are unable to address the systemic problems around you. The best an attorney can (and should) expect, is to have a positive impact on one person at a time. During my years as a guardian ad litem, I often wondered if I could really change the lives of my clients for the better when my role as their attorney was, in many ways, limited by the rule-based progression of an abuse and neglect proceeding. In this institutional system, the role of attorney for the allegedly neglected child, is prescribed. The lawyer must follow protocols with respect to matter timelines, as well as the norms of their jurisdiction, to move a case from open to closed. In this respect, wellintentioned direct advocacy can render legal services attorneys as cogs in the machine, rather than as engineers of change. At the same time, attorneys have the status, access to resources, and ethical charge to effect broad system-wide justice reforms. The responsibility to inhabit both roles can seem daunting - to represent individual clients effectively, while simultaneously working to change outcomes at a policy or structural level. Law students should have exposure to a framework for identifying how a given system is structured in order to identify the opportunities and limitations of both roles.¹⁷¹

Surfacing and mapping systems, as discussed in the "Mapping the Client Process" activity, can catalyze discussions about the dual roles of the attorney, and the limitations of direct representation to address matters personal to the client, yet systemic in their creation. This activity can facilitate discussion about where in the system of a reoccurring site of need - say, the system through which SSI benefits are denied – legal intervention is positioned and why. If the way that legal services "intervene" in a system (only after an initial denial, and only once a hearing is scheduled months and years after that, for example) is limited, students can brainstorm whether there are different points in the system where legal services could be introduced to spark a broader impact. Structural innovation must become a bigger part of legal services delivery. While the constraints on the attorney's role during individual advocacy drives the need for systemic advocacy, new approaches to meeting client need cannot be created without a workforce prepared to employ the critical thinking necessary to create and implement new ways of engaging legal problems. The surfacing and mapping activities I describe above invite reflection on direct rep-

¹⁷¹ See Elkins, supra note 148, at 514–15 ("Law, and the practice of law, involves more than law schools now teach, or one might argue, even attempt to teach. Law is closely related, by even the most superficial of observations, to society and those who hold the reins of power. Yet, law schools do not attempt to teach students how to deal with power and those who wield it. Law schools do not, with notable exceptions, attempt to teach how the power of law is used to maintain a particular social order and what the alternatives to the prevailing order might exist.").

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resentation as a problematic point of disconnect for the emerging legal services attorney. It provides a means of grappling with the desire to be an advocate who wishes to effect wide-scale change and the forces which all too often reduce the power of individual effort to individual impact. Law students learn that we may, and usually do, effect positive outcomes for our particular clients, yet we send them back into the same systems that create and reinforce their vulnerability.

Traditional notions of thinking like a lawyer have not critiqued the tension between the dual roles of the attorney. Highlighting this tension for and with those who will form the next generation of attorneys empowers them to think in strategic ways about how best to use their J.D. degree.¹⁷² Perhaps such conversations will transform the law student's professional identity question from: Do I go public interest or private firm? to, do I take the job that only lets me provide direct advocacy, or the practice that employs a multifactored structural advocacy strategy? Perhaps job-seeking 3Ls will begin to ask prospective employers: Does the firm adopt a siloed model of service provision, or does it support and celebrate cross-disciplinary problem solving? Law school is where most of the skills of legal practice are first learned, and where core beliefs about professional identity are instilled. This makes legal education the right place for introducing and reinforcing messages about the habits of mind and practice that can lead to the continued evolution of what it means to think like a lawyer.¹⁷³ As the lawyer's self-conception of the territory of their practice changes, so too will the legal system as a whole change. The systems thinking paradigm is consistent with current trends that elevate reflective practice and collaborative problem-solving as values within the legal profession. The dynamic process of investigating the systems that attorneys and clients contribute to and are a part of provides a counter balance to the linear analytic thinking called for in much of legal education.¹⁷⁴

¹⁷⁴ See Ashar, supra note 11, at 227 ("As law skeletonizes facts to facilitate adjudication, it categorizes and reduces complex and contradictory human experience. By . . . giving students critical frames generated across disciplines, we encourage them to put their newfound skills of categorization and reduction into a broader, structural context. The goal is

¹⁷² See Checkland, *supra* note 14, at 300 ("Changing the way we think does not automatically solve the various problems, issues, or crises we face. However, it does reframe how we think about what we view as a problem in the first place, and what solutions might look like.").

¹⁷³ See Leering, supra note 11, at 191 ("[C]ultivating reflective practice beginning in law school and encouraging legal professionals and the organizations they work for to use action research strategies will synergistically contribute to a more reform oriented and responsive legal culture and justice system."). See also Gretchen Duhaime, Practicing on Purpose: Promoting Personal Wellness and Professional Values in Legal Education, 28 TOURO L. REV. 1207, 1208 (2012). Duhaime highlights her use of a systems thinking lens to "help students live ethical lives with meaning and purpose."

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IV. CONCLUSION

Systems form the context of legal practice. Systems thinking contributes to legal education by providing a paradigm and a practice for contextualizing legal advocacy. Systems thinking can be engaged through explicit teaching strategies. Such instruction encourages law students to see their clients as both unique individuals with pressing legal concerns, and as one of the many facing struggles born of the composition and resilience of systemic structures. Such instruction reinforces that attorneys are not just system actors; we are called upon to be system change agents. Law students must be taught in ways that prepare them for both roles.

Systems thinking like a lawyer involves employing systems thinking to advance the problem-solving and critical reflection ends of traditional legal practice. Cultivating such critical reflective practice during law school can prepare students to recognize and parse the systemic factors maintaining the myriad social injustices which cause countless proverbial starfish to continue to wash up on our shores. If lawyers are just cogs in the machine, then the impetus I have raised to teach systems thinking lacks persuasion. But, if lawyers are at once agents and architects of the systems implicated in every legal practice area, then law students must be educated in ways that encourage them to recognize systemic structures and to make advocacy decisions informed by the broad social and political interdisciplinarities from which legal needs and legal practice are inextricable. Surely, our students cannot use law to change systems if they graduate from law school with a limited understanding of the structures that keep social inequity firmly in place. Endeavoring to speak to the systemic directly, rather than in a peripheral way, can help law students decode the production of structural outcomes. Further, the practice can counter the tendency to see systemic occurrences as too complex to address, or as concerns falling outside the purview of legal practice.¹⁷⁵ Education in systems thinking may open law students to embrace grappling with complex social and institutional factors as a meaningful part of their practice, and not just as a curricular enhancement to be forgotten upon semester's end.

If legal education has been slow to evolve, it is not static.¹⁷⁶ With

to give them the experience necessary to interpret community narratives and to co-construct social problems and potential legal responses, alongside clients.).

¹⁷⁵ See Wizner, supra note 151, at 591 ("Law teachers must expose their students to the ways in which legal power is distributed and exercised in American society, to what ends, and in whose interests.").

¹⁷⁶ See Menkel-Meadow, *supra* note 149, at 27 ("What we must remember is that law and legal education are human constructs, ever changing.").

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new teaching approaches come new habits of thought, which contribute to the evolution of professional norms.¹⁷⁷ Legal educators must be diligent in their embrace of tools that can help students identify the complex interconnected causes of client-presented problems, understand the structures which contribute to the reproduction of consequences over time, and evaluate proposed legal interventions designed to produce change. Teaching strategies rooted in systems thinking ultimately offer a reflective practice that normalizes considerations of the interconnections between law and other human-created systems within what it means to practice law. Lawyers who see the scope of their work as part of broader systems, and who have a discipline for critical reflection, will be prepared to collaborate across disciplinary siloes, and will be poised to develop and implement legal interventions that have whole system impacts. Indeed, these are the movement lawyers, the rebellious lawyers - those who have, perhaps unwittingly, engaged the habits of system thinking in order to maximize the impact of their advocacy. With broader adoption and additional contributing voices, systems thinking should be recognized as a mainstream lawyering competency. Given a foundation in systems thinking, law students will be able to discern the glass of structural occurrences taking place at all times, but often only looked through rather than looked at.

¹⁷⁷ See Ben W. Heineman Jr. et al., Lawyers as Professionals and as Citizens: Key Roles and Responsibilities in the 21st Century, HARVARD LAW SCHOOL CENTER ON THE LEGAL PROFESSION, 14 (November 2014) ("The question has always been what other qualities of mind – modes of thinking – do we want in our lawyers so that they can be outstanding technical experts, wise counselors, and effective leaders?").