TORTS AS SYSTEMS

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ABSTRACT

This article offers a new scientific conception of the tort system. Building on the process theory of torts, it integrates the natural, social, and systems sciences to illuminate the law's structure, substance, and development. It shows that each feature is really driven by dynamic coordination systems and not by either monist or pluralistic epistemologies. At the structural level, torts continuously synchronizes a dispute resolution system, a lawmaking system, and the surrounding social value system. This multilevel super-system resolves tort disputes by reconciling an assortment of substantive norms derived from our biological, neuropsychological, and sociocultural systems. Though these norms all seek social stability, they emerge incrementally over time according to the primal, social, and ratio-moral phases of human development.

Tort "law" coordinates these norms through various doctrines and principles, yet these rules do not define torts' essence. Because torts is a system of discordant impulses, its legality is decentralized, spontaneous, and synergistic. This can be seen horizontally across tort theories, as supposedly key distinctions among intentional torts, negligence, and strict liability progressively erode and transform. It also is evident within each theory's allegedly indispensable elements, which are constantly adjusted, informed, or blurred by other key concepts. These emergent patterns even extend vertically in the evolution of important fields like pure emotional distress, premises liability, and strict products liability, where system dynamics can take different trajectories and produce unplanned and unpredictable results.

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✠. Professor of Law, Southwestern Law School. Because this article breaks with the longstanding jurisprudential tradition of analyzing torts from a purely legal, philosophical, or historical standpoint, I have not relied on existing tort theories to develop my thesis. Instead, I have approached the subject from the perspective of complex systems science. Thus, my acknowledgements here will be equally unconventional, touting some of the unsung heroes of this exciting new field. My original fascination with systems theory was stoked by the inspired musings of polymath Stuart Kaufman and neuroscientist and complexity theorist J.A. Scott Kelso. That passion was deepened and enriched by the systems insights of Neil Johnson, the late Donella Meadows, John Miller, Melanie Mitchell, and Geoffrey West. While their work illuminated various aspects of the tort system, my nonscientific legal background continues to shape my view. So despite the ingenuity of these complexity theorists, I remain solely responsible for any errors in explanation or analysis. Finally, a project like this is not just difficult to write; it also is challenging to review, assess, and edit. Thus, Brandon Thompson and the staff of the *Southern California Interdisciplinary Law Journal* deserve a special nod of appreciation for embracing my work and striving to strengthen it.

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I. INTRODUCTION

Tort theory is in desperate need of reconciliation. For decades now, tort scholars have waged a winner-take-all battle to explain the essence of tort law. Monists say torts[1] is unified by a single concept or practice, while pluralists see a multitude of defining influences.[2] Though the monists share a global perspective, they cannot agree on anything else. In fact, these unifiers are themselves hopelessly split, grounding torts in antagonistic notions of corrective justice, distributive or social justice, economic efficiency, or civil recourse.[3] Such conflicts are compounded by deep differences in methodology, with conceptual analysts logically deducing torts' true nature[4] and social scientists relying on empirical investigation.[5] Unfortunately, this rivalry has not brought us any closer to a common understanding of the subject. If anything, it has only polarized the competing positions.[6]

The few tort theorists who *have* sought reconciliation have not gone far enough. Rather than harmonize existing accounts, these "connectors"[7] have merely pieced them together. According to this view, tort law is a legal composite consisting of two parts: a private domain that retrospectively rights past wrongs, and a public domain that prospectively shapes social policy.[8] Corrective justice and civil recourse theories explain the private

1. Throughout this article, I will use the word "torts" as a singular term encompassing all of the field's many aspects, including its laws, systems, and processes.

2. *See generally* Benjamin Shmueli, *Legal Pluralism in Tort Law Theory: Balancing Instrumental Theories and Corrective Justice*, 48 U. MICH. J.L. REFORM 745, 747–48 (2015) (discussing monist and pluralist theories of tort law).

3. *Id.* at 747, 751–57 (addressing corrective justice, distributive justice, and efficiency or optimal deterrence theories); Cristina Carmody Tilley, *Tort Law Inside Out*, 126 YALE L.J. 1320, 1328–30 (2017) (discussing economic, corrective justice, and civil recourse theories).

4. *See* JULES L. COLEMAN, THE PRACTICE OF PRINCIPLE 14, 173–74 (2001) (employing analytic jurisprudence to defend corrective justice theory of torts); Benjamin C. Zipursky, *Palsgraf, Punitive Damages, and Preemption*, 125 HARV. L. REV. 1757, 1757–58 (2012) (describing author's longstanding use of pragmatic concepts to support the tort theory of civil recourse).

5. *See, e.g.*, Michael L. Rustad, *Torts as Public Wrongs*, 38 PEPP. L. REV. 433 (2011) (advocating a sociological approach to torts).

6. *See* Michael Pressman, *The Compatibility of Forward-Looking and Backward-Looking Accounts of Tort Law*, 15 U. NEW HAMP. L. REV. 45, 47 (2016) (stating that the debate in tort theory is "largely polarized between two camps"); Tilley, *supra* note 3, at 1335 (noting the "polarization of tort scholars"); *see also* John T. Valuari, *Dialectical Jurisprudence: Aristotle and the Concept of Law,* 3 DREXEL L. REV. 415, 415 (2011) (describing legal theory in general as suffering from a "bipolar disorder").

7. This description is not used by the theorists themselves. Rather, I have coined the term to identify the common perspective linking their works.

8. *See, e.g.*, Pressman, *supra* note 6 (combining the private "backward-looking" account of corrective justice with the public "forward-looking" account of economic theory); Shmueli, *supra* note 2 (prioritizing corrective justice and compensation where the parties are private, but switching priority to optimal deterrence where the parties are public institutional entities); Alex Stein, *The Domain of Torts*, 117 COLUM. L. REV. 535 (2017) (arguing that justice and fairness principles apply to conduct performed for a private benefit, while efficiency analysis applies to acts done for the public welfare); Tilley, *supra*

sphere, while economic and social theories address the public realm.[9] The connectors divvy up the law's core concepts, assign them to one category or the other, and combine them into a supposedly complete account of torts.

While the connectors' aspirations are laudable, their approach also shows little hope of improvement. Why? Because like traditional tort approaches, these "connection theories" fundamentally misinterpret torts' essential nature. Torts is not a fixed, finite, and autonomous thing that can be captured by its components alone. Rather, torts is a *system*. More precisely, it is a dynamic synergy of complex human systems that continuously adapt and change.

Because this theory is itself a bit complex, a brief overview will help set the stage.[10] Complex systems are not unique to law or other forms of human association. They pervade the natural world. Though systems may serve different purposes, they share the same core features. These quantifiable characteristics cannot be grasped by abstract explanation. Instead, they require scientific investigation. Yet no bounded science, like sociology, will do. Systems studies demand systems science, the only empirical discipline broad enough to transcend all scientific borders.[11]

According to systems science—otherwise known as complex adaptive systems theory or complexity theory for short—a complex system is a group of interrelated elements forming a whole greater than the sum of its parts. These elements are not innately harmonious, but contain contradictory properties. To resolve their inner tensions, systems link together to create chains of reciprocal feedback loops. While the chains neutralize some discord, they also create new conflicts and instabilities. When this occurs, each system immediately adapts, coordinating opposed factions and exploring middle-ground solutions until a satisfactory reconciliation is reached. Even then, the process never really stops. Perpetually shifting circumstances create renewed volatility, and the cycle begins all over again.

These dynamics govern legal systems as well. Like all natural systems, a legal system is a complex problem-solving process—one specifically developed to address the dilemma of human conflict. That process is influenced by an intricate system chain that runs from our genetics all the way up to our jurisprudence. Though our biological, social, and cultural systems have their own immediate objectives, each member of this extended legal network follows law-like rules to reconcile competing forces that threaten human survival. Eventually, these proven solutions become heritable instincts that guide our sense of legality.

Torts is a critical part of law's complex system. Along with other areas of law, torts completes the law's coordinative framework. Yet torts is not *just* an element in a larger system. It is a complex system all its own. In fact, like other complex systems, torts is not a solitary scheme, but actually consists

note 3 (contending that traditional, closed community norms govern private, personal torts but that open, pluralistic value systems of modern communities control public, impersonal wrongs).

9. *See* Pressman, *supra* note 6, at 48 (recognizing this dichotomy); Stein, *supra* note 8, at 540–41.

10. Rather than cite all of the propositions in this summary, I will simply point readers to the relevant parts of the article. *See infra* notes 15–19 and accompanying text.

11. *See* NEIL JOHNSON, SIMPLY COMPLEXITY: A CLEAR GUIDE TO COMPLEXITY THEORY 18 (2009) (describing complexity theory as an "umbrella science" and the "Science of all Sciences").

of multiple interlocking systems. It combines a dispute resolution system, a lawmaking system, and the social system at large. Because these systems possess conflicting goals and values, torts relies on coordination dynamics to reconcile their differences. So even as the law evolves, its functionality never falters, keeping the system plural, unified, *and* complementary *all at the same time*. What's more, these coordinative patterns are so strong, they do not just permeate torts' defining features; they also illuminate its intractably conflicted jurisprudence.

Ironically, this claim is not completely novel, but is itself an outgrowth of a prior coordinative venture. Relying on metaphysical analysis, the groundbreaking "process theory" of torts similarly described torts as a perpetual process of conflict and regeneration.[12] Ahead of its time, this creative perspective captured torts' coordinative nature without the benefit of systems theory or the pioneering revelations of the natural and social sciences over the last two decades.[13] Unfortunately, because of its limitations, process theory misunderstood some of torts' systemic features, failed to fully account for others, and lacked the resources to place them in broader context.[14] This article resolves these problems. Enriched by science's advances, it uses a robust interdisciplinary approach to support a more evolved "systems theory" of torts.

Given the theory's scope, its road to reconciliation must cover a lot of ground. That road begins in Part II with process theory, identifying its critical insights while exposing its fatal deficiencies.[15] Part III fills these gaps with systems science, the coordinative knowledge domain that unites all other sciences.[16] Systems science consists of three interconnected fields: complexity theory, which explains the fundamental properties of systems; complementarity, which explains their contradictory nature; and coordination dynamics, which account for their harmonization.

With this groundwork in place, Part IV reveals how these same forces control all human systems, including the biological, neuropsychological, and sociocultural networks that collectively ground our sense of legality.[17] Because people are simultaneously selfish, social, *and* rational, their mental operating systems must continuously reconcile disparate impulses so their biogenetic hardware can survive and flourish. The discussion here not only elaborates on this predicament, it shows how the systems' coordinative solution effectively scales up from chromosomes to cultures and eventually culminates in law, mankind's highest survival system.[18]

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12. *See* Jay Tidmarsh, *A Process Theory of Torts*, 51 WASH. & LEE L. REV. 1313 (1994).

13. A more recent project uses complexity and systems theory to "converge" "internalist" and "externalist" conceptions of private law. *See* Andrew S. Gold & Henry E. Smith, *Sizing Up Private Law*, SSRN (Jan. 21, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2821354. However, this venture does not identify torts' coordination dynamics, its systemic interdependence, its variety of natural influences, and its coevolutionary process of development. Thus, despite the project's laudable systems perspective, it shares little in common with the present account.

14. The process theory of torts is explained in Section II.A and critiqued in Section II.B.

15. *See infra* notes 23–61 and accompanying text.

16. *See infra* notes 62–108 and accompanying text.

17. *See infra* notes 109–57 and accompanying text.

18. For a more comprehensive discussion of how complex systems scale in size, *see generally* GEOFFREY WEST, SCALE: THE UNIVERSAL LAWS OF LIFE, GROWTH, AND DEATH IN ORGANISMS, CITIES, AND COMPANIES (2017) (arguing that a wide variety of complex systems respond similarly to increases in size).

The next two parts apply these insights to the tort system. Part V identifies torts' three systems; explains their interrelationship, structure, and boundaries; and explores the connection between the tort system as a whole and the social systems that surround it.[19] Part VI then describes the dynamics of the tort system, using emotional distress, premises liability, and products liability design defect cases to illustrate its coordinative patterns.[20] The final part points to the larger lessons in these findings and proposes some issues for future study.[21]

Before we begin, however, a few preliminary disclaimers are necessary. First, because I have detailed in other writings much of the science behind my thesis,[22] the explanations here will be somewhat more succinct. In fact, Part IV on human systems mostly summarizes my previous scientific conclusions, so readers already acquainted with my work may choose to skip ahead.

Second, no single person can canvass all of science to support any empirical proposition, so I will make no such attempt. Nor will I address every faction or approach applicable to a scientific field. Instead, I hope to provide relatively brief but essentially accurate synopses of the disciplines most relevant to the development of legal systems.

Third, as a law professor passionate about science but trained in the humanities, I will not conduct or present any empirical evidence of my own, but rather will rely upon the research of leading scientists in the various specialties under consideration. Moreover, I will not attempt to definitively *prove* my propositions. Even if such proof were possible, which is arguable, it would require the collaborative efforts of many academics over an inestimably long period of time. My more modest purpose is to synthesize the available evidence to formulate an informed hypothesis.

Fourth, and finally, I will not seek to explain all of tort law. Besides being prohibitively impractical, such a survey would be entirely fruitless. Torts is far more than a collection of static "elemental" doctrines. It is a perpetual process for coordinating and reconciling conflicts on many levels. Thus, rather than fixate on fragments and ephemera, I will focus on torts' fundamentals, digging wide and deep enough to make a compelling case for torts as systems.

II. TORTS AS PROCESS

Though torts often is described as a system, it rarely is examined that way. In fact, most tort theories seek to explain the law's structure, content, and functions, not its inner workings. One notable exception, however, is the process theory of torts. Developed in 1994 by Professor Jay Tidmarsh, this approach views torts as an ongoing *process* of conflict and change.[23]

19. *See infra* notes 158–213 and accompanying text.
20. *See infra* notes 214–371 and accompanying text.
21. *See infra* notes 372–79 and accompanying text.
22. *See* Alan Calnan, *Beyond Jurisprudence*, 27 S. CAL. INTERDISC. L.J. 1 (2017) [hereinafter Calnan, *Beyond*] (using systems science to propose a new theory of jurisprudence); Alan Calnan, *Systems Science and the Supreme Court*, WAKE FOREST L. REV. (Sept. 30, 2016), http://wakeforestlawreview.com/2016/09/systems-science-and-the-supreme-court/ (applying systems science to the U.S. Supreme Court appointment process).
23. *See* Tidmarsh, *supra* note 12.

Tidmarsh's novel theory offered an improved account of torts' chronic division and instability. But it also had its limits. Wedded to a philosophical methodology, process theory lacked a full grasp of system dynamics and the natural forces that underlie and perpetuate it. So while this new perspective opened our eyes to the truth, its shortcomings ultimately compromised its own vision.

A. CONFLICT AND CHANGE

The process theory of torts was inspired by the same theoretical warfare that continues to plague tort jurisprudence today. In *A Process Theory of Torts,* Professor Tidmarsh lamented nearly a quarter century ago that tort theory is "filled with wonderful contradictions," including "the well-known oppositions of justice to efficiency and of formalism to realism and pragmatism."[24] He responded to the discord in two stages. After exposing the problems of the competing views, Tidmarsh proposed a novel alternative: conflict itself was torts' true nature.

1. Lost Causes

The early friction among tort theories was the result of an underlying conflict between conceptualism and anti-conceptualism or, more plainly, between philosophy and science.[25] Law and economics scholars and corrective justice theorists both embrace a conceptual or philosophical approach to jurisprudence, which "holds that torts is (or should be) governed by a single, true foundation from which specific doctrinal consequences—the 'correct' state of tort rules—follow."[26] Anti-conceptualism or empiricism, by contrast, is favored by realists and pragmatists. They believe tort law is not fixed but fluid, constantly adapting to changing social and political circumstances.[27]

Even back then, the deficiencies of each side were readily apparent. According to Tidmarsh, conceptualism is fatally flawed because there is no consensus on torts' controlling principle; and of the proposed candidates for that title, none is capable of accounting for all of torts' vast domain.[28] Anti-conceptualism fares no better. By seeing torts as nothing more than a social fad or a political whim, this relativistic approach denies the law's apparent reliance on morality and logic.[29]

The only remaining question was whether these faulty antagonists could be cured by combination. Anticipating the recent wave of connection theories, Tidmarsh summarily rejected any hope of meaningful integration. First, such an integrative project would be underinclusive. Though integration might rehabilitate traditional tort enemies like corrective justice

24. *Id.* at 1313.
25. *Id.* at 1314. The conceptualist/anti-conceptualist distinction also maps fairly closely onto the monism/pluralism divide mentioned in the introduction. Monists tend to use conceptual analysis to construct universal theories, while pluralists typically rely on empirical research to support law's relativism.
26. *Id.*
27. *See id.* at 1314–15.
28. *See id.* at 1320–26.
29. *See id.* at 1327–28.

and economic efficiency, it would exclude other values or policies that either are or might become part of the law's essence.[30] Second, any *ex post* attempt at integration likely would ignore or distort the historical influences that *actually* shaped torts' development.[31] Consequently, integration would suffer from the same incurable weaknesses.[32]

2. A New Vision

The solution to this dilemma was not to resolve torts' clashes, but to embrace them. According to Tidmarsh, conflict and change are the very essence of torts. The law, in short, is not a fixed set of rules but rather a "perpetual process, a timeless battlefront scarred by previous skirmishes among theories, doctrines, and practices, which fluidly adjusts to absorb new assaults that redirect the struggle."[33]

Yet torts' vicissitudes are not boundless. For a system of perpetual process to continue, it must contain an order, form, or structure that facilitates its function.[34] Tidmarsh conceives of the law's formal structure as a pliable outer shell that contains the inner struggle.[35] As confrontations arise, the shell expands and contracts like a balloon, retaining its distinctive features while adjusting to the volatility within.[36]

Applying this analogy to torts, Tidmarsh argues that torts' outer boundaries are defined by three simple facts. These facts establish conditions that must exist for the described process to be considered part of the tort system. At a minimum, Tidmarsh argues, "Torts concerns the allocation of loss."[37] After a social transaction or encounter causes one person to suffer some harm, the victim initiates proceedings to force the other party to bear that loss. This adversarial and allocative structure qualifies as tort-like. Though loss allocation occurs in other areas of civil law, it is indispensable to the tort system.[38] In Tidmarsh's words, "Loss allocation is the only common concern of all tort cases."[39]

But torts also possesses two constraints. It does not assign responsibility any which way; instead, "[t]orts allocates loss through an adjudicatory process."[40] Specifically, it requires the parties to register their conflicting cases with a neutral tribunal, which either facilitates their settlement or resolves the dispute. In presenting their claims and defenses, the parties are not free to assert any argument they please. Instead, they are limited by certain "meta-doctrinal" boundaries, or bases of liability.[41]

These boundaries seem to track modern tort theories. Intentional torts and strict liability are governed by a "causal model."[42] Under this formalistic

30. *See id.* at 1343–44.
31. *See id.* at 1344.
32. *See id.*
33. *Id.* at 1331.
34. *See id.* at 1335.
35. *See id.* at 1317, 1336.
36. *See id.* at 1336.
37. *See id.* at 1338.
38. *See id.* Tidmarsh notes that contract and antitrust claims also allocate losses. *See id.*
39. *Id.*
40. *Id.* at 1339.
41. *See id.* at 1341.
42. *See id.* at 1345, 1356–61, 1371–72.

model, tort tribunals use "clear rules, logically derived from first principles" to allocate loss to the party who caused it.[43] Conversely, negligence actions follow a "community model."[44] This pragmatic and political approach uses "loosely textured, discretionary rules" to tap into prevailing social values, which produce indeterminate and *ad hoc* judgments of liability.[45] That said, Tidmarsh cautions that there are "no first principles from which torts as a confederation of causal and community models can be derived."[46]

While these models are distinct, they are not necessarily independent. In fact, they are conjoined in two important ways. Besides sharing the foundation of adjudicatory loss allocation, they overlap when community values ground responsibility in notions of causality.[47] What's more, torts' defining models also inform other legal fields. For example, contract law allocates losses caused by promissory breaches. Thus, it shares many of the same outer parameters as torts.[48]

Process theory's explanatory power did not stop with torts and legal systems. It extended, or could extend, to all of life's conflicts. In fact, its potential only enhanced its credibility. Torts' themes of competition, struggle, loss, and change resonate throughout the natural world. Thus, they actually serve as "a microcosm of life."[49] In this sense, the process view was not just good theory. According to Tidmarsh, it was "a window on a universal dimension of the human condition."[50]

B. LIMITATIONS

As it turns out, however, the window of process theory was really a masterful peephole. Though it explained some of torts' key features, it did not reveal the big picture. What's more, the theory remained abstract because it was grounded solely on philosophical speculation. Because that methodology lacked a scientific foundation, process theory could not address many of torts' most fundamental questions. Consequently, Tidmarsh's promising observations failed to capture the distinctive system dynamics behind his mysterious tort process.

1. Fragile Foundations

Ironically, process theory appeared to start off on the right track. Professor Tidmarsh vowed to base process theory on an inductive methodology, examining its "hard data" and constructing a hypothesis to fit his observations.[51] By this account, process theory was *supposed* to be scientific.

Yet philosophy, not science, dominated the ensuing discussion. At the outset of his piece, Tidmarsh acknowledged that process theory "flows

43. *Id.* at 1372.
44. *See id.* at 1345, 1361–72.
45. *Id.* at 1367.
46. *Id.* at 1412.
47. *See id.* at 1345–46.
48. *Id.* at 1346.
49. *Id.* at 1419.
50. *Id.*
51. *See id.* at 1319–20, 32–35.

naturally" from the late nineteenth- to early twentieth-century metaphysics of Scottish philosopher Alfred North Whitehead.[52] Elsewhere, Tidmarsh endorsed the "unassailable" methodologies of Oliver Wendell Holmes Jr., Judge Richard Posner, and Ernest Weinrib, who "search for the least common denominator in torts and then build from that essence the appropriate shape of the tort system."[53] Unfortunately, these authorities were not empirical researchers engaged in the scientific method. Rather, they were analytic philosophers practicing classic conceptual analysis. They did not find facts. They spun persuasive theories to explain how important tort concepts hang together from a single, common thread.

Tidmarsh's philosophical diversion derailed his scientific ambition. If process dynamics pervade the natural world, as Tidmarsh suggested, then he would have fared better by examining the natural sciences. Since torts is fashioned from the brains of natural (human) beings, neuroscience and psychology would have been good places to start.

At the time, however, many of these fields were in flux and largely unknown to jurisprudence. Granted, by the early 1990s, psychology and the life sciences had begun addressing systems and decision theory, at least preliminarily.[54] Yet "hard" science was undergoing rapid metamorphosis. Indeed, tremendous breakthroughs over the next decades dramatically increased the salience of scientific findings relevant to law. Consequently, Tidmarsh's omissions hardly seem surprising.

Today, such scientific developments are so noteworthy, their neglect is difficult to justify. Though academics had been studying various types of systemic processes for many years, the field of systems science or complex systems theory formally took root in America in the 1980s and proliferated steadily through the twenty-first century.[55] Over the same period, profound advances in the brain, cognitive, and evolutionary sciences produced striking revelations about how human beings think, feel, act, and develop.[56]

These trends were linked by the growth of consilience,[57] which inspired hybrid disciplines like cognitive neuroscience, neuropsychology, evolutionary psychology, evolutionary cognitive neuroscience and so on.[58]

52. *Id.* at 1317.

53. *Id.* at 1332–33.

54. *See* MELANIE MITCHELL, COMPLEXITY: A GUIDED TOUR xi–xii, 316–17 (2009) (providing a brief history of systems science from the mid to late twentieth century); JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES (Daniel Kahneman et al. eds., 1982) (an early exploration of the psychology of decision-making).

55. M. MITCHELL WALDROP, COMPLEXITY: THE EMERGING SCIENCE AT THE EDGE OF ORDER AND CHAOS 9 (1992) (stating in 1992 that complexity science is "a subject that's still so new and so wide-ranging that nobody knows quite how to define it, or even where its boundaries lie"); *id*. at 12 (describing how complexity theory's "nerve center," the Santa Fe Institute, was founded in the mid-1980s).

56. *See generally* Michael S. Gazzaniga, *What is Cognitive Neuroscience?, in* A JUDGE'S GUIDE TO NEUROSCIENCE: A CONCISE INTRODUCTION 2, 2–4 (Andrew S. Mansfield ed., 2010) (tracing the developments in neuroscience and cognitive science); John Tooby & Leda Cosmides, *The Psychological Foundations of Culture*, *in* THE ADAPTED MIND: EVOLUTIONARY PSYCHOLOGY AND THE GENERATION OF CULTURE 89, 97–100 (J. Barkow et al. eds., 1992) (reviewing developments in evolutionary biology that led to the field of evolutionary psychology).

57. According to consilience advocate, Edward O. Wilson, consilience is the "'jumping together' of knowledge by the linking of facts and fact-based theory across disciplines to create a common groundwork of explanation." EDWARD O. WILSON, CONSILIENCE: THE UNITY OF KNOWLEDGE 8 (1998).

58. *See generally* Austen L. Krill et al., *Where Evolutionary Psychology Meets Cognitive Neuroscience: A Précis to Evolutionary Cognitive Neuroscience*, 5 EVOL. PSYCH. 232 (2007) (discussing these hybrid fields and their integration into a new domain called evolutionary cognitive neuroscience).

Even traditional fields have begun to close the knowledge circle. Today, domains as different as biology, physics, economics, and sociology have turned to complex systems theory to explore the intricate and interconnected enigmas of the human condition.[59]

2. Open Questions

Without the benefit of this wisdom, process theory leaves a number of pressing questions unanswered. Is torts' process a system? What are the features and dynamics of systems? Is there a difference between natural systems, like weather fronts, and man-made systems like torts? What are they? Is torts a single system or a composite of several different subsystems? If the latter, what is their interrelationship? If systems have shell-like boundaries, what causes them? How are they are constituted? Why are torts' boundaries determined by causality and community values? What is the relationship of these constituents? Can the boundaries or their components change? How?

Such quandaries only deepen as one searches for guidance outside of torts. Assuming torts is connected to other systems, what are they? What influence do they have on torts' theories, doctrines, and practices? Are these connections horizontal (linking other cultural institutions), vertical (the culmination of lower causal forces), or both? On the vertical scale, how far down does the systemic network run? Do social systems help to precipitate and define torts? How about psychological or neurological systems? What about genes? How do all of *these* systems interact, and what informs their interaction? The list of questions goes on and on.

Because Professor Tidmarsh's analysis remained at the law's surface level, he overlooked the possibility that torts could be so deeply and persistently grounded. In fact, as noted previously, he admitted to knowing of "no first principles" that might emerge from man's base nature to shape torts' institutional form.[60] According to Tidmarsh, "The most that normative theory can do is to justify the understanding of torts as a system in perpetual conflict."[61]

The question is whether process theory offers the best justification possible. Considering recent scientific advances, I think not, and in the remainder of this paper will seek to show why. Since the answer lies in torts' systemic nature, the best place to start is with the illuminating insights of systems science.

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59. *See* David Auerbach, *The Theory of Everything and Then Some,* SLATE (Jan. 19, 2016; 2:10 PM), http://www.slate.com/articles/technology/bitwise/2016/01/a crude look at the whole looks at compl exity theory which wants to understand.html ("Encompassing everything from biology to physics to economics to sociology, complexity theory provides not a single philosophy but a looser toolset of themes and techniques with which to grasp . . . 'a crude look at the whole.'").

60. Tidmarsh, *supra* note 12, at 1412.

61. *Id.*

III. SYSTEMS SCIENCE

A process is merely a set of actions that lead to a particular result.[62] Systems are different. They organize one or more processes into a unified scheme. Though torts includes processes, it operates as a complex, holistic system or network of interconnected systems. In fact, much of nature, including human nature, bears a similar systemic structure. Thus, before we can understand the distinctly human tort system, we must know how systems work. This is the domain of systems science. In the sections below, we will survey this intricate science, first exposing the complexity and conflicted complementarity of systems, and then explaining their dynamic coordinative function.

A. COMPLEXITY AND COMPLEMENTARITY

According to systems expert Donella Meadows, a system "is an interconnected set of elements that is coherently organized in a way that achieves something."[63] This definition includes three essential ingredients: elements, interconnections, and a function or purpose.[64] Though one component occasionally may appear more prominent or powerful than the others, all of these features are necessary to the operation of the system.[65] Each ingredient plays a discrete role within the system, and all interact synergistically as a coherent whole.[66]

1. System Parts

Elements are the most conspicuous part of a system. They are the "stuff" that gives the system a discernable composition. This stuff can be tangible or intangible.[67] Plants and animals are tangible elements of ecosystems. The heart, blood, and blood vessels are tangible elements of circulatory systems. Even judicial systems have material elements like judges, juries, lawyers, courtrooms, and law books.

An interconnection is a relationship that binds elements and puts them to work.[68] However, many if not most interconnections also transmit information.[69] These informational conduits often take the form of rules and instructions that control element interactions. For example, in a university system, academic standards heavily influence the ongoing association of deans, professors, students, honors and support organizations, and a host of administrative offices.[70] Likewise, the rules of civil and criminal procedure coordinate the behaviors of judges, lawyers, administrators, and participants in the legal system. As a result, such system interconnections are almost always critical to system behavior. To borrow Meadow's analogy, "Change

62. *See Process*, OXFORD ENGLISH DICTIONARY ONLINE, https://en.oxforddictionaries.com/definition/process (defining "process," noun, as "[a] series of actions or steps taken in order to achieve a particular end") (last visited Aug. 5, 2018).
63. DONELLA H. MEADOWS, THINKING IN SYSTEMS: A PRIMER 11 (Diana Wright ed., 2008).
64. *Id*.
65. *Id.* at 17.
66. *Id*.
67. *Id.* at 13.
68. *Id.*
69. *Id.* at 14.
70. *Id.*

the rules from those of football to those of basketball, and you've got, as they say, a whole new ball game."[71]

While interconnections serve as a kind of operating system, they do not determine the functions of the systems they serve. Indeed, a system's purpose often cannot be identified from its blueprints, mission statements, or instructions.[72] Rather, it must be gleaned from observations of the system's behavior.[73]

Generally speaking, a system's primary purpose is to perpetuate its own existence.[74] Beyond that, however, its functions can be many and varied. In fact, its goals frequently may conflict. The immediate ends of the elements may clash with the function of the whole. Or, because systems are infinitely nested structures, the functions of individual subsystems may vary with each other. This explains how many well-meaning doctors—acting as beneficial agents of our health care system—might prescribe opioids to kill the pain of their patients, but unwittingly contribute to the larger social problems of drug addiction and crime.[75] Of course, these inconsistencies are not easily addressed. Change a system's purpose, and you are sure to fundamentally alter its nature.[76]

2. Ordered Disorder

Not surprisingly, all of this volatility causes complex systems to simultaneously display qualities of order and disorder.[77] This paradoxical condition is called complementarity. While complementarity acknowledges the presence—indeed prevalence—of oppositions in the world, it reinterprets their relationship. Such binaries are not permanent or essential states but dynamic tendencies. Further, these conflicts are not irreconcilable. Contraries are complementary. Like the cohesive concepts of yin and yang, complementarities are inextricably interrelated with each part serving as a piece of a whole puzzle.[78]

Competition and cooperation are great examples. Mankind's urge to cooperate even in the face of dogged competition creates maybe our most enigmatic complementarity.[79] People see the two choices as incompatible: either get along or go it alone. In reality, however, they are opposed yet complementary tendencies in the dynamic process of social living. This explains why our primitive ancestors turned to group cooperation to win the selfish competition for food.

71. *Id.* at 16.
72 . *Id.* at 14.
73. *Id.*
74. *Id.* at 15.
75. *See id.* (invoking this scenario as an example of inconsistent goals and outcomes).
76. *Id.* at 17.
77. *See* JOHNSON, *supra* note 11, at 15–16.
78. *See* J.A. SCOTT KELSO & DAVID A. ENGSTRØM, THE COMPLEMENTARY NATURE 20–21, 37–38, 177 (2006) (explaining the correspondence between complementarity and this Taoist ideal).
79. *See* JOHN H. MILLER, A CRUDE LOOK AT THE WHOLE: THE SCIENCE OF COMPLEX SYSTEMS IN BUSINESS, LIFE, AND SOCIETY 192–93 (2015) (describing the complementarity of cooperation and competition).

Although complementarity first emerged in particle physics,[80] it now extends across disciplines, including psychology, religion, anthropology, politics, and philosophy.[81] According to its acclaimed founder, physicist Niels Bohr, "[T]he integrity of living organisms, and the characteristics of conscious individuals, and human cultures, present features of wholeness, the account of which implies a typical complementary mode of description."[82] Today, complementarity has been used to explain complex systems small and large—from molecules to cosmological curiosities—and much about life in between.[83]

Most important for our purposes, complementarity describes systemic phenomena central to jurisprudence, including brain function, human behavior, social institutions, and cultural artifacts.[84] We will explore these complementarities further in Part IV. For now, it is enough to note that complementarity is a central characteristic of all complex systems and, as we shall see, a driving force behind their dynamic functions.

3. Complex Systems

Admittedly, some systems are easier to analyze than others. A simple system is closed and centrally controlled. Consider a flashlight. Fully assembled, a flashlight is a closed system consisting of a switch connected to a battery, which is connected to contact wires or strips, which are connected to the bulb. If you eliminate the switch, or open the system by introducing new elements, the system will fail to work. However, if you keep everything intact, the flashlight will operate predictably until the elements deteriorate or break.

Most human and natural systems are complex.[85] Complex systems differ in several critical respects. They are not contrived and contained, but rather are open, self-organized, and emergent.[86] Complex systems interact with their environment, spontaneously emerging, shifting shape, and disappearing from the random behavior of their components.[87] What's more, such systems are literally everywhere. As Meadows explains,

> A school is a system. So is a city, and a factory, and a corporation, and a national economy. An animal is a system. A tree is a system, and a forest is a larger system that encompasses subsystems of trees and animals. The earth is a system. So is the solar system; so is a galaxy.[88]

80. *See* KELSO & ENGSTRØM, *supra* note 78, at 82; *see also* Gerald Holton, *The Roots of Complementarity*, 99 DAEDALUS 1015, 1018–19 (1970).
81. *See* Edward MacKinnon, *Niels Bohr on the Unity of Science*, 2 PHIL. SCI. ASSN. 224, 235 (1980) (discussing Bohr's belief that complementarity extends to many fields of human endeavor).
82. Holton, *supra* note 88, at 1032.
83. *See* KELSO & ENGSTRØM, *supra* note 78, at 15, 85 (describing the prevalence of this phenomenon).
84. *See id.* at 111.
85. *See* STUART KAUFFMAN, AT HOME IN THE UNIVERSE: THE SEARCH FOR THE LAWS OF SELF-ORGANIZATION AND COMPLEXITY 7–8, 14–15, 47 (1995) (noting that complex systems pervade the natural world).
86. *See* MEADOWS, *supra* note 63, at 12, 190; JOHNSON, *supra* 11, at 3–5, 14–15 (noting these properties).
87. *See* JOHNSON, *supra* note 11, at 13–16 (describing the key components of complex systems).
88. MEADOWS, *supra* 63, at 11–12.

In fact, "[w]e are complex systems—our own bodies are magnificent examples of integrated, interconnected, self-maintaining complexity."[89]

Because all complex systems are open, they continually exchange information with other systems, which initiate corresponding loops of perpetual feedback. A feedback loop is a circular chain of causal connections that link past, present, and future events in many possible locations.[90] Armed with such data streams, complex systems do not remain static. Instead, they constantly adapt, countering snowballing reinforcement cycles with balancing corrective measures that continually search for stability.[91] Yet no matter how these systems wax and wane, their permutations are never entirely uniform. Indeed, complex systems are not just aggregations of quantifiable elements. Instead, the whole is always greater than the sum of its parts.[92]

B. COORDINATION DYNAMICS[93]

Because all complex systems face complementarities, they cannot achieve any purpose unless they are capable of negotiating between extremes. This is the job of coordination dynamics, the *process* by which complex systems reconcile their differences. Although this process takes place inside and all around us, its features are still relatively unknown. So before we explore what coordination dynamics does, we first must understand how it works.

1. Reconciliation

Brain science theorists J.A. Scott Kelso and David A. Engstrøm offer the preeminent account of this controlled chaos. They define coordination dynamics as "a set of context-dependent laws or rules that describe, explain, and predict how patterns of coordination form, adapt, persist, and change in natural systems."[94] It emerges within a vortex of constant change in which the system's competing tendencies push and pull those patterns in different directions. As the system destabilizes, coordination dynamics not only sets the boundaries of this inner struggle, it reconciles the evolving oppositions to keep the whole working effectively.[95]

Such coordinative maneuvering takes place both within and between complex systems. As noted earlier, open systems constantly exchange matter, energy, and information with adjoining systems.[96] Spurred by instability and entropy *within* each system, these exchanges stimulate synergies *between* and *among* the participants.[97] This frenetic activity continues until it produces a stable pattern suitable to the environment. Otherwise, opposed

89. *Id.* at 3.
90. *See id.* at 25–35, 187, 190; JOHNSON, *supra* note 11, at 14.
91. JOHNSON, *supra* note 11, at 14; MEADOWS, *supra* 63, at 12, 25–35.
92. *See* JOHNSON, *supra* note 11, at 15; MEADOWS, *supra* 63, at 188.
93. This Section was partially adapted from Calnan, *Beyond*, *supra* note 22, Section II.C.
94. KELSO & ENGSTRØM, *supra* note 78, at 90.
95. *See id.* at xii–xiii.
96. *See id.* at 112.
97. *See id.* at 10, 97; J.A. SCOTT KELSO, DYNAMIC PATTERNS: THE SELF-ORGANIZATION OF BRAIN AND BEHAVIOR 4 (1995).

tendencies "shift and move, never at rest, seesawing back and forth through myriad multifunctional possibilities."[98]

Like complexity theory more generally, coordination dynamics applies all the way up the system chain, explaining and coupling the patterns *within* each part of a system, the patterns existing *between* system *parts*, the patterns of the *entire* system, and the patterns *between that system and its environment*.[99] Because every system is situated between others, there is no absolute macro or micro level of analysis, and no level is more essential than any other.[100] The observer must simply pick a system of interest and account for the dynamic influences emanating from above and below.[101]

No matter which level one chooses, the dynamics at work remain precisely the same. According to Kelso and Engstrøm, all coordinative patterns contain three defining characteristics: (1) the boundary conditions or control parameters constraining the pattern, (2) the elements forming the pattern, and (3) the dynamics or contours of the pattern itself.[102] If this sounds familiar, it should. The boundaries create the system's outer shell, just as Professor Tidmarsh had surmised for processes. These parameters set the limits of the system's inner activity and force its exploration of middle-ground solutions. The coordinative elements are no strangers either. These are simply the system elements identified earlier by Meadows. The real crux of coordination dynamics, then, is its reconciliation patterns.

2. Patterns

While reconciliation requires an accommodation of alternatives, coordination dynamics does not necessarily seek balance.[103] Instead, it seeks the best arrangement of system elements to secure its existence and promote its goals. When environmental changes disturb these pursuits, the system adjusts accordingly, rearranging its elements to create more propitious patterns. As Kelso and Engstrøm explain, "if better ways are out there to fit the circumstances and context of a given coordination pattern, fluctuations will help the system (and us) discover and explore them."[104] Indeed, even after a favorable pattern is found, the process continues to move backward *and* forward, perpetuating global feedback loops in search of still better configurations.[105]

During this holistic process, complex systems cycle through phases of stability and instability. Yet the system elements never truly settle at either extreme.[106] Instead, they maintain a condition of metastability. Metastability

98. KELSO & ENGSTRØM, *supra* note 78, at 4.
99. *See id.* at 90–91; KELSO, *supra* note 97, at 70.
100. *See* KELSO & ENGSTRØM, *supra* note 78, at 109.
101. *See id.* at 116.
102. *See id.* at 109; KELSO, *supra* note 97, at 18.
103. J.A. Scott Kelso & Emmanuelle Tognoli, *Toward a Complementary Neuroscience: Metastable Coordination Dynamics of the Brain*, *in* DOWNWARD CAUSATION AND THE NEUROBIOLOGY OF FREE WILL 108 (Nancey Murphy et al. eds., 2009).
104. KELSO & ENGSTRØM, *supra* note 78, at 97.
105. *See* ANTONIO DAMASIO, DECARTES' ERROR: EMOTION, REASON, AND THE HUMAN BRAIN 93 (2005).
106. *See* David A. Engstrøm & J.A. Scott Kelso, *Coordination Dynamics of the Complementary Nature*, 30 GESTALT THEORY 121 (2008), http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2903971/pdf/nihms67694.pdf.

is the capacity to simultaneously hold and weigh contradictory positions.[107] This perpetual state of readiness keeps the system receptive to all incoming stimuli, including those that are diametrically opposed. Thus, even while an element or network lurches in one direction, a different alliance may pull back in another. Because such antinomies appear at the same time, the system sees and assesses the full range of intermediate compromise points and adapts instantaneously to implement them.

This ensuing coordinative pattern pervades just about everything humans do. Kelso and Engstrøm use traffic jams as an example,[108] but the illustrations are virtually limitless. Consider a jazz ensemble. The musicians begin a song with some preplanned melody. The melody both limits the notes of each player and coordinates their individual performances into a unified whole. When the mood strikes, one member breaks the pattern and begins to improvise. These melodic, tonal, or rhythmic changes alter the song's boundary conditions, forcing the other group members to adapt accordingly. As the musicians take turns riffing on their instruments, the ensemble continually cycles through phases of stability and instability until the song ends and another one begins.

These dynamics do not just run horizontally across the spectrum of human pursuits. They also run vertically through the phylogenic evolution of mankind and the ontogenetic development of every human being. Ultimately, this complex system chain completes a holistic conception of human nature—one that connects our most primitive instincts to our noblest institutions, including our system of law.

IV. HUMAN SYSTEMS[109]

Like everything else in nature, a human being is really just a system of complex systems. Human biological systems spawn a system of neuropsychological drives that eventually stimulate sociocultural systems like law. Though these systems appear to be autonomous, they actually are seamlessly nested and conjoined in a circular feedback loop, with every system influencing all others. Because systems at each level contain antagonistic properties, they depend on coordination dynamics to reconcile their internal tensions so they can fulfill their systemic functions. This is as true of our lowest molecular system as it is of the cultural systems at the top.

So to understand a legal system like torts, we have to trace the downstream forces that cause, contour, support, and sustain it. By no coincidence, the forces underlying torts are the same ones that influence law more generally. Because I have fully described law's systemic origins in prior work,[110] I will not go into specifics here. In fact, as I mentioned at the outset, anyone familiar with this account might jump right to the tort discussion to avoid redundancy.

107. *See* KELSO & ENGSTRØM, *supra* note 78, at 102–04.
108. *See* KELSO & ENGSTRØM, *supra* note 78, at 114–15 (developing this analogy).
109. Portions of this Section were adapted from Calnan, *Beyond, supra* note 22. For the sake of convenience, I will cite directly to the appropriate pages and footnotes of *Beyond Jurisprudence* to support the propositions contained in the text.
110. *See supra* note 22 and authorities cited therein.

That said, the human precursors *to* law are so essential to its form and function that any theory *about* law would be virtually incomprehensible without them. Thus, for readers who are not versed in the scientific particulars, I will briefly highlight the most compelling insights. Though the constituent systems are actually interdependent and recursive, I will present them in linear fashion to aid the exposition. Using a bottom-up approach, the discussion will follow the biological, neuropsychological, and sociocultural dynamics that shape our sense of legality.

A. BIOLOGICAL

Complex systems, we know, are dedicated first and foremost to securing their own survival. Human beings are no different. In fact, people possess two forms of biological survival systems. One system secures the short-term interests of *individuals*, while the other promotes the long-term interests of the *species*. Yet both systems operate on the same universal principle: persistence depends on the continuous coordination of incompatibles.

1. Homeostasis

Our short-term survival system is actually a collection of seemingly separate biological subsystems—circulatory, nervous, digestive, respiratory, musculoskeletal, reproductive, and so on. Each subsystem performs a function vital to the health and welfare of its host. For example, the circulatory and respiratory systems oxygenate the body, while the nervous system animates and controls it.

Unfortunately, all of these subsystems are also susceptible to malfunction or failure. So a person's immediate survival depends on her body's ability to keep these subsystems operating within their control parameters. This happens through an operating system called homeostasis—the biological iteration of coordination dynamics.[111] More simply, homeostasis is the physiological rulebook that creates and implements standards that allow the human body to maintain stability while adjusting to conditions that are optimal for survival.[112]

Homeostatic coordination has two components. As a preventative measure, homeostasis establishes the extremes for healthy bodily function—like the body's internal temperature gauge. If these extremes are met or exceeded, the affected system cannot perform unless appropriate adjustments are made. This is why a person who becomes too hot or too cold begins to suffer symptoms of dysfunction.

Homeostasis then triggers the necessary corrective response. After sensing the dangerous deviation, the host's body and brain coordinate the pertinent system elements to implement restorative countermeasures. Thus, in the case of hyperthermia, the body's homeostatic system sends feedback about the temperature problem through the bloodstream to the brain, initiating various compensatory adjustments like increased sweating and elevated blood flow to the skin. If the adjustments are timely and effective,

111. *See* Calnan, *Beyond, supra* note 22, at 29–30.

112. *See* PATRICIA S. CHURCHLAND, BRAINTRUST: WHAT NEUROSCIENCE TELLS US ABOUT MORALITY 28 (2011); DAMASIO, *supra* note 105, at 109–110.

thermal stability is restored and the host ultimately survives. If not, all systems fail and the entire human super-system eventually expires.

2. Cooperation

Homeostasis certainly helps each person stay alive, but individual fitness does not guarantee survival. Human beings also face threats from their natural environment. Though Mother Nature contributes to these challenges, she is not mankind's biggest external problem. Rather, the greatest threat to humanity is *human nature* itself. Originally, that nature was *exclusively* selfish. The human genome imbued people with an irrepressible survival instinct.[113] That instinct prompted self-serving behaviors to acquire things like food, shelter, and mates. Because resources were limited, people competed with each other to obtain their basic necessities.[114]

Eventually, our human ancestors figured out that they did not have to vanquish their competitors to win the game of survival. Instead, their success depended on their ability to cooperate.[115] As noted earlier, cooperation became the evolutionary solution to the problem of social living. People working together as a system could accomplish things they could not do alone. A group of cooperators could diversify and specialize their tasks, designating some for building, others for tool-making, and still others for protection. As cooperation networks expanded, each member could spend more time pleasing her selfish genes and less time worrying about her competitors.

What these early cooperators discovered was really something their bodies already knew: complex systems require coordination dynamics. When people's antagonistic drives created an unstable complementarity, the coordination dynamics of reciprocity helped them reconcile their differences. Of course, no person received everything she desired, but everyone now had a better chance of getting what she needed. Just as homeostasis promoted stability in biological systems, cooperation helped the emergent social system harmonize its members for the survival of the species.[116]

In fact, this coordination strategy became so successful that it infiltrated our DNA. Cooperators lived longer than defectors. Because of their longevity, sociophiles enjoyed more opportunities to reproduce. Over time, their progeny developed stronger inclinations for cooperation. Each generation produced more cooperators, who mated and produced still other cooperative offspring. As the cooperation trait expanded, it also seeped deeper into our human fabric until it finally became a genetic instinct.[117] So while human beings retained their selfish urge for survival, they also evolved a social sensibility to facilitate that pursuit.

113. *See generally* RICHARD DAWKINS, THE SELFISH GENE 7–20 (1976) (observing that human genes appear selfish because their sole goal is to secure their own immortality).

114. *See* Calnan, *Beyond, supra* note 22, at 29–30.

115. *Id.* at 30–33.

116. *Id.* at 36–37.

117. *See* MARK RIDLEY, THE COOPERATIVE GENE: HOW MENDEL'S DEMON EXPLAINS THE EVOLUTION OF COMPLEX BEINGS (2008) (arguing that life evolved as a series of steps to coerce genes to cooperate within the body).

B. NEUROPSYCHOLOGICAL

Of course, the survival guide contained in our genetic blueprint is not self-executing. It merely provides instructions to the human brain, which implements the host's survival plan. Yet the brain itself is not free of these entrenched influences. In fact, our selfish and social complementarity is permanently etched into our neurological architecture. These conflicting modules create an assortment of divergent behavioral drives that shape our psychological development and inform our sense of morality. Still, our neural system does not collapse into dysfunction. Instead, it reconciles our cognitive dissonance as complex systems always do—by dynamically coordinating its discordant elements to attain a reasonable semblance of coherence.[118]

1. Cognition

The human brain is a microcosm of the creatures it inhabits. It is simultaneously selfish and social, and in constant need of reconciliation. And like its host, the brain did not get this way by chance. Rather, it acquired its antagonistic tendencies by natural selection in response to specific challenges.

According to physician and neuroscientist Paul MacLean, mankind's "triune brain" developed in three discrete stages.[119] The oldest part of the brain—called the hindbrain—is essentially selfish. Inherited from our reptilian ancestors, it produces our basest drives and emotions, like fear, aggression, hunger, lust, security, dominance, and respect for authority.[120] As reptiles evolved into mammals, our forebears became increasingly social, living together for protection and childrearing. Their neural apparatus adapted to this change by developing a midbrain that promotes empathy, trust, and cooperation.[121] Once *homo sapiens* came into being, their selfish and social instincts made them highly unstable creatures. Consequently, their brains grew a rational outer layer—called the forebrain—to help calm and counterbalance their impulsive inner voices.[122]

Today, the brain's triadic structure gives it two competing modes of operation. Neuroscientist and philosopher Joshua Greene likens this dual-process system to a camera.[123] Most cameras can be operated automatically or manually. In automatic mode, the camera makes a number of preplanned adjustments for the photographer, selecting settings for speed, focus, brightness, and so on to produce good photos under most conditions. Switch the camera into manual mode, and the user now controls the picture-taking process. Though she loses the camera's normative guidance, she gains the

118. *See* MICHAEL S. GAZZANIGA, WHO'S IN CHARGE?: FREE WILL AND THE SCIENCE OF THE BRAIN 110–11 (2011) (explaining this coordinative process and its unifying effect).

119. *See* PAUL D. MACLEAN, THE TRIUNE BRAIN IN EVOLUTION: ROLE IN PALEOCEREBRAL FUNCTIONS 13–18 (1990).

120. *See* GERALD A. CORY, JR., THE CONSILIENT BRAIN: THE BIONEUROLOGICAL BASIS OF ECONOMICS, SOCIETY, AND POLITICS 12 (2004).

121. *See id.* at 12–16.

122. *See id.* at 12, 15 n.3, 15–18.

123. *See* JOSHUA GREENE, MORAL TRIBES: EMOTION, REASON, AND THE GAP BETWEEN US AND THEM 132–34 (2013).

freedom to customize the settings to suit the unique circumstances of the moment.

Brains work the same way. According to Greene, our selfish and social modules activate our automatic mode.[124] Highly emotional, these impetuous systems prompt quick decisions and immediate snap judgments. Such impulses, in turn, cue stock behaviors that have passed the test of natural selection. Meanwhile, our cerebral cortex serves as the command center of the brain's manual mode. It gathers information, considers options, formulates plans, and develops moral justifications for its choices.[125]

Unlike the camera, however, the human brain can operate both modes at the same time. The result is something of a cranial complementarity, causing instinct and reason to work together even as they tear our minds apart.[126] Indeed, neuroscientist David Eagleman compares the brain to a "team of rivals" whose members share the same goal but have different ways of achieving it.[127]

Without some guidance, these contentious collaborators could easily get their signals crossed. To prevent this from happening, the brain's left hemisphere "interpreter" reconciles discrepancies in the brain's subsystems, weaving their contradictory inputs into a cohesive personal narrative.[128] In this way, Eagleman notes, the interpreter allows the brain's cells to "see themselves as a unified whole, a way for a complex system to hold up a mirror to itself."[129] Or, as Professor Gazzaniga puts it, "Even though our brain carries out all these functions in a modular system, we do not feel like a million little robots carrying out their disjointed activities[;] rather, [w]e feel like one, coherent self with intentions and reasons for what we feel are our unified actions."[130] So like the body it serves, the brain employs its own homeostatic mechanism to negotiate its neurological extremes.

2. Morality

Not surprisingly, the brain's system of conflicted cognition also affects human psychology. Early on, Sigmund Freud recognized the epic battle amongst the mind's selfish id, its pragmatic social ego, and its rational superego.[131] Years later, psychologist Lawrence Kohlberg identified a similar triadic struggle, though he emphasized its progressive nature.[132] While advances in psychology have eclipsed these theories, Professor Eagleman affirms that "the heart of [their] idea survives: brains are made of competing subsystems" that define our splintered psyches.[133]

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124. *See id.* at 138, 141–43.
125. *See id.* at 136–37, 143.
126. *See* Calnan, *Beyond, supra* note 22, at 40.
127. DAVID EAGLEMAN, INCOGNITO: THE SECRET LIVES OF THE BRAIN 109 (2012).
128. *See* GAZZANIGA, *supra* note 118, at 81–112 (discussing this interpreter mechanism).
129. *See* EAGLEMAN, *supra* note 127, at 100.
130. GAZZANIGA, *supra* note 118, at 148.
131. *See* SIGMUND FREUD, THE EGO AND THE ID 11–62 (James Strachey, rev. ed., Joan Riviere, trans., 1989).
132. *See* 1 ANNE COLBY & LAWRENCE KOHLBERG, THE MEASUREMENT OF MORAL JUDGMENT: THEORETICAL FOUNDATIONS AND RESEARCH VALIDATION 9 (1987) (discussing Kohlberg's theory).
133 . EAGLEMAN, *supra* note 127, at 110.

This mental mayhem places our minds in moral conflict. Studies now show that children are *born* with competing conceptions of morality that reflect our psychic dissonance.[134] Predictably, this division tracks our dual process cognition. Some acts, like hitting someone without provocation, just feel morally wrong. Such conduct violates primitive rules embedded firmly within our genome.[135] Given the rules' gravity, we consider them special, serious, imperative, and universal.[136] So when these rules are broken, we experience an automatic and emotional sense of reproval.

Conventional wrongs are different. Because they breach rules imposed externally by authority figures or social customs, they do not push our internal outrage buttons and we do not feel bad for committing them.[137] We may obey the rules out of fear of punishment or reprisal—like a child following a school dress code—but doing so seems more calculated than instinctual.

These psychological distinctions derive from an even deeper set of moral sentiments. After studying cultures the world over, moral psychologist Jonathan Haidt discovered six universal moral foundations. He concluded that people everywhere favor caring, autonomy, fairness, loyalty, respect for authority, and a rough sense of integrity and sanctity; and disfavor harm, oppression, cheating, betrayal, subversion, and degradation.[138]

Anthropologist Richard Shweder condensed this list even further to reveal its coordinative pattern. In Shweder's view, people share three common ethical dispositions: autonomy, community, and divinity.[139] Roughly speaking, Shweder's autonomy ethic includes Haidt's no-harm and autonomy instincts; his community ethic subsumes Haidt's caring, fairness, loyalty, and authority drives; and his divinity ethic parallels Haidt's sanctity and integrity impulse. Even more strikingly, Shweder's tripartite classification scheme perfectly mirrors the selfish, social, and ratio-moral strands of human neurology and psychology.

Though all of these values address important survival problems, their exact configuration varies by person and culture.[140] Thus, while liberal societies may highlight freedom and fairness, class-based systems may favor authority and loyalty, and communitarian cultures may emphasize an ethic of care. So just as our values are the glue that binds us together, they also are the wedge that splits us apart.[141]

Indeed, these inner schisms affect our interpersonal relationships. As noted previously, genes compete with each other by drawing their hosts into constant conflict. Driven by the autonomy instinct, individuals fight amongst

134. *See* SHAUN NICHOLS, SENTIMENTAL RULES: ON THE NATURAL FOUNDATIONS OF MORAL JUDGMENT 5–7, 9–10, 18, 25 (2004).

135. In the colorful words of neuroscientist, Michael Gazzaniga, we are equipped at "the baby factory" with a number of important moral sentiments, "including a sense of fairness, reciprocity, and punishment." *See* GAZZANIGA, *supra* note 118, at 225.

136. *See* Calnan, *Beyond, supra* note 22, at 47.

137. *Id.*

138. *See* JONATHAN HAIDT, THE RIGHTEOUS MIND: WHY GOOD PEOPLE ARE DIVIDED BY POLITICS AND RELIGION 149, 178–79 (2012).

139. R.A. Shweder et al., *The "Big Three" of Morality (Autonomy, Community, and Divinity), and the "Big Three" Explanations of Suffering*, *in* MORALITY AND HEALTH 119–69 (A. Brandt & P. Rozin eds., 1997).

140. *See* HAIDT, *supra* note 138, at141–45.

141. Professor Haidt puts the point succinctly: "*Morality binds and blinds*." *Id.* at 216.

themselves to obtain precious resources. But competition quickly breeds cooperation.[142] As coalitions form, authority, loyalty, and fairness intensify and spread. Soon these groups must contend with cheaters and subversives.[143] Over time, communities diversify and subdivide until they too begin to clash. At each stage in this process, our social networks expand and connect, but they remain perpetually fraught with friction.

All of this discord leaves human beings in an extremely precarious position. Unless our social networks reconcile these differences, the entire system of human association teeters perilously on the brink of collapse. Fortunately, mankind has developed a knack for coordination, and that saving skill is just as automatic as our urge to oppose.

C. SOCIOCULTURAL

Like individual human beings, every group of people is a system within a system: relatives within families, families within clans, clans within tribes, and so forth.[144] Thus, all people share the same existential quandaries as the systems that comprise them. Torn by internal and external conflict, they must coordinate their complementarities or face possible extinction. These system affinities allow survival solutions to scale up from genes to bodies to brains and even to societies and cultures. The upper group solutions form, evolve, and operate just like mankind's other complex systems, using coordination dynamics to achieve a state of homeostasis.

1. Scalability

The transition from biology to sociality is the first step in the scaling process. Though it can appear mysterious, this progression follows a natural chain of interconnections. Genes, bodies, and brains create behaviors; repeated behaviors become practices; shared practices become customs; and shared customs for cohabiting become social conventions. Inevitably, the dynamics that start the process carry through to the very end, inscribing their coordinative patterns on everything along the way.

Our biological imprint was evident in the formation of the very first human societies. According to anthropologist, Alan Page Fiske, mankind's socialization roughly tracked the biological and neuropsychological evolution depicted earlier.[145] In the first "cumulation" stage, individual human beings selfishly developed their own survival skills by learning from the experience of others.[146] This learning phase was followed by a social "complementation" stage, in which people began complementing the beneficence of others by cooperating and reciprocating in kind.[147] Eventually, the collaborators began generating cooperation principles for

142. *See* GREENE, supra note 123, at 20–21.
143. *See* CHURCHLAND, *supra* note 112, at 80–81.
144. *See* Calnan, *Beyond, supra* note 22, at 26.
145. *See* Alan Page Fiske, *Complementarity Theory: Why Human Social Capacities Evolved to Require Cultural Complements,* 4 PERS. SOC. PSYCH. REV. 76, 87–90 (2000); *see also* discussion *supra* Sections IV.A–B.
146. *See* Fiske, *supra* note 145, at 76, 87.
147. *See id.* at 87–88.

new social situations—a rational and moral aptitude Fiske calls "generativity."[148]

Once societies became established, they tended to develop in the same evolutionary pattern.[149] The first hunter-gatherer societies were essentially egoistic and atomistic, with members placing their own personal interests before the group, which lacked any clear roles, norms, or structures.[150] As social groups became larger, their survival problems became increasingly more complex. They adapted by developing chiefdoms or pan-tribal sodalities that used village councils and community tribunals to enforce an ever-expanding list of social responsibilities.[151] In time, though, growth in these societies caused the group to split into separate communities with different sets of norms and values. These gaps eventually were bridged by nation-states employing rational planning to implement a system of sacred rights and universal imperatives.[152]

Western culture evolved in a similar manner. According to sociologists Bradley Campbell and Jason Manning, societies in the West routinely moved from honor codes to an ethic of dignity.[153] Early honor cultures relied heavily on social status to determine a person's standing.[154] Because an insult could tarnish one's reputation, the offended party was expected to take matters into her own hands, often by exacting violent retribution against her offender.[155] As society grew safer and law secured individual liberties, people became less concerned about public opinion and more self-assured about their own intrinsic worth.[156] The result was a culture of dignity founded on fundamental human rights. Preferring rational self-restraint to honorable aggression, the dignity culture resolved personal affronts through consensual agreement and public due process.[157] Honor sects surely persisted, but the Western mind became thoroughly transfixed by moral ideals of justice and fairness.

2. Meta-Homeostasis

Despite appearances, these social and cultural trends were not completely transformative. Like the evolution of humanity itself, the progression was gradual, with new phases adding layers of complexity to the ones that came before.[158] The result was a sociocultural complementarity. While cultures developed dignified governing principles, they continued to harbor primitive instincts of coercion and control. Conflicting social impulses were not simply absorbed and forgotten; they were constantly challenged by new and different cultural ideals.

Mankind responded by coordinating and reconciling these competing forces. Though biology, culture, and human agency do not overpower each

148. *See id.* at 88–90.
149. C.R. HALLPIKE, THE EVOLUTION OF MORAL UNDERSTANDING 10, 152–53, 183, 185 (2004).
150. *See id.* at 187–90.
151. *See id.* at 219–26, 254.
152. *See id.* at 271–81, 298–301 (discussing the evolution and ethical nature of early states).
153. *See generally* Bradley Campbell & Jason Manning, *Microaggression and Moral Cultures,* 13 COMP. SOC. 692 (2014) (describing this transition).
154. *See id.*
155. *See id.*
156. *See id.* at 712–13.
157. *Id.*
158. *See* Calnan, *Beyond, supra* note 22, at 58.

other, neither do they achieve a true synthesis. Instead, they oscillate to-and-fro, subtly attuning society to the perpetual rhythms of coordination dynamics. As Professor Fiske aptly summarizes, "cultural reproduction and diffusion, natural selection, cognition, development, and social relations are dynamic processes acting on each other in a continuously shifting balance that never reaches equilibrium."[159]

Yet human cultures are not without control parameters. To ensure effective system function, they must establish rules for optimal performance. Such rules cannot just prescribe healthy social behaviors; they also must identify conduct that may be lethal to the system as a whole. Just as important, there must be ways both to prevent potentially debilitating breaches and to correct them when they occur. In short, the system needs a supreme social coordinator to keep people in the sweet spot of survival.

That coordinator, it turns out, is law. If biological homeostasis maintains human bodily function, law is a system of meta-homeostasis for mankind's body politic. In the words of neuroscientist Antonio Damasio,

> The elaboration of moral rules and laws and the development of justice systems responded to the detection of imbalances caused by social behaviors that endangered individuals and the group. The cultural devices created in response to the imbalance aimed at restoring the equilibrium of individuals and of the group.[160]

This means that law and its coordinative machinery are not really human inventions—at least, they are not the exclusive product of the human mind *independent* of its natural processes. Rather, law-based coordination is an *inherent attribute* of *all* complex systems, including the biological systems that inform our cognitions, desires, and behaviors. These influences run from our genetics all the way up to our cultural institutions and all the way down into the very fabric of our being. Known as gene-culture coevolution, this recursive cycle locks genes and cultures in an interactive feedback loop, with genetic changes influencing culture and cultural changes influencing our genome.[161]

In the case of law, our genetic trait for coordination elicited various forms of cooperative behavior. As these behaviors spread and persisted, they gave rise to deeper norms and values like fairness and justice.[162] In time, these values produced social practices aimed at regulating noncooperative behavior.[163] Once these practices reached critical mass, society turned them into formal institutions of law. This seminal transition not only memorialized and sacralized our coordinative commitment, it created a defining legal culture.[164]

159. Fiske, *supra* note 145, at 83.
160. ANTONIO DAMASIO, SELF COMES TO MIND: CONSTRUCTING THE CONSCIOUS BRAIN 310 (2012).
161. *See* WILSON, *supra* note 60, at 137–39.
162. *See* GILLIAN K. HADFIELD, RULES FOR A FLAT WORLD: WHY HUMANS INVENTED LAW AND HOW TO REINVENT IT FOR A COMPLEX GLOBAL ECONOMY 32–34, 69–70 (2017).
163. *See id.*
164. *Id.* at 6, 77–78.

Of course, as people migrated, they customized their legal systems to address the unique problems presented by their new surroundings. Yet law everywhere shared a prodigious common core. No matter the location, community members invariably sought to create rules for the exchange and ownership of resources, punishments for rule-breakers, redress for victims, and procedures for resolving conflicts.[165]

These legal universals have a common systemic foundation. Because law is the secular culmination of the scaling process inherent in all complex systems, we should expect to find in our legal system all or at least most of the same features evident in the systems below, including our biological, neuropsychological, and sociocultural systems. As I have detailed in my prior work, that assumption holds up under scrutiny. In fact, it is confirmed by the history, structure, content, and process of law and even by our theories of jurisprudence.[166] Rather than recount that general narrative here, I will focus instead on the many specific features of tort law that reveal its systemic nature.

V. TORT SYSTEMS

Nature's complexity did not just stimulate mankind's movement *toward* law. It left indelible imprints *on* law, including our law of torts. Looking through the lens of systems science, we see that torts is not a fixed set of enduring concepts like corrective justice or economic efficiency. Nor is it a simple integration or synthesis of these or other concepts. Torts also is not a pluralistic and variable collection of social practices. Though torts contains processes, it is not just a process of civil recourse or even the metaphysical process detailed by Professor Tidmarsh. Instead, torts is a system. More accurately, it is a complex natural system of interconnected, dynamic coordination systems working together to promote human welfare.

The following Sections will elaborate this thesis, correlating torts' system characteristics with its structure, content, theory, history, and process. After identifying the tort system's three interlocking layers, the discussion examines the substantive boundaries that limit and inform tort disputes. It shows how the law's many doctrines consistently tap our ingrained values to coordinate our selfish, social, and moral sensibilities. But this does not happen in the centralized manner presupposed by traditional tort theory, with the law's liability theories neatly subdividing its doctrines and principles into separate normative categories. Instead, torts' growth is decentralized, integrated, and emergent, triggering normative transformations that strain existing theoretical descriptions.

A. LAYERS

Because complex systems are interdependent, our explanation of the tort system must look both outward and inward. We will begin with the systems that lie at torts' perimeter. Working back from the farthest to the closest systems, this external network includes the political branches of government

165. *See* Owen D. Jones & Timothy H. Goldsmith, *Law and Behavioral Biology,* 105 COLUM. L. REV. 405, 465–75 (2005).

166. *See* Calnan, *Beyond*, *supra* note 22, at 56–77.

and the divisions within the judicial system. We then turn to the civil justice system and, more specifically, the tort field itself. Here, we find a trilogy of systems consistently coordinating conflicts as one.

1. Adjoining Systems

Because torts is mostly a judicial creation, it is structurally connected to the other branches of government. In fact, both the legislative and executive branches place *limits* on various parts of the tort system. For example, many jurisdictions have adopted statutory schemes to address traditional tort topics like products liability, medical malpractice, comparative fault, and noneconomic and punitive damages.[167] Less directly, the judiciary's deference to executive authority has spawned restricted tort duties and qualified immunities.[168] The legislature, along with its accompanying regulatory system, also *informs* many aspects of tort law. Most notably, the doctrine of negligence *per se* provides a wealth of statutory or regulatory requirements that clarify or supplement torts' standard of reasonable care.[169]

This separation-of-powers structure serves an obvious coordinative function.[170] Each political branch roughly represents an innate ground of human normativity, with the executive imposing authoritative commands and punishments, the legislature instantiating and creating social conventions, and the judiciary interpreting, mediating, and monitoring the other system components and developing final operating principles to ensure system function.

Torts' home system, the judicial branch, is arranged in comparable fashion.[171] It consists of a triumvirate of criminal, civil, and constitutional subsystems. The criminal justice system implements harsh sanctions against selfish behavior that threatens our cooperative political association. By comparison, the civil justice system, including the field of torts, empowers society's members to rectify interpersonal wrongs arising from their social encounters. Meanwhile, our constitutional system establishes the governing principles for both lower systems, using reason to reconcile their differences and unite them into a cohesive network.

In theory, law's criminal and civil functions could be handled together. In fact, this was true of the nascent English justice system, which originally imposed criminal penalties *and* civil remedies within the same royal actions.[172] Yet once crimes and torts diverged, they became separate but related subsystems within our greater social network. Although criminal and civil law continued to serve dual functions, they emphasized different homeostatic objectives. Crimes primarily regulated antisocial acts but sometimes required restitution for victims. Civil actions, by contrast, mainly

167. *See generally* F. Patrick Hubbard, *The Nature and Impact of the "Tort Reform" Movement*, 35 HOFSTRA L. REV. 437 (2006) (discussing these tort reform measures).

168. *See generally* DAN B. DOBBS ET AL., HORNBOOK ON TORTS 549–81 (2015) (surveying these immunities and limited duties).

169. *See id.* at 243–61.

170. *See* Calnan, *Beyond, supra* note 22, at 61.

171. *Id.* at 61–62.

172. *See* DOBBS ET AL., *supra* note 168, at 6.

redressed interpersonal harms, though it also could impose punitive sanctions.[173]

Given the overlap between these subsystems, some substantive similarities are both natural and expected. However, their specialization also sets them apart. Crimes address each citizen's relationship to the state. In systems speak, the criminal law integrates the elements of the social system with the system as a whole. Civil law does the same thing in its lawmaking system, allowing the state to promulgate social rules for individual action. But civil litigation also performs a systemic role criminal law does not. By creating boundaries for the reconciliation of interpersonal disputes, the civil system helps link people, as social elements, to each other.[174] This unique combination of features distinguishes these two fields.

Within the civil justice system, torts stands out as a critical component. Yet it does not necessarily stand alone. Other systems affect it. For example, many tort parties have private insurance that pays for some of their losses. Employees sustaining work-related injuries often receive worker's compensation benefits to get them back on their feet. When disputes arise, the adversaries sometimes turn to arbitration or mediation to explore grounds for compromise.

Admittedly, these satellite systems intersect the tort system and influence its workaday operation. But they do not define torts' *essence*. Torts could shed its insurance, worker's compensation, or alternative dispute resolution connections without losing its distinctive identity. In fact, it already tries to do so, employing concepts like the insurance exclusionary rule,[175] the collateral source doctrine,[176] and the rule of confidentiality for compromise offers and settlements[177] to remove ancillary considerations from its trial process. Thus, we shall leave such secondary systems to the side.

2. Torts' Trilogy

This brings us to the tort system itself. Like the systems that surround it, torts is not monolithic. Rather, it is a complex system consisting of three nested subsystems. At its core, torts is a *dispute resolution system* where private parties come for assistance to settle their conflicts. This problem-solving system sits within a larger *judicial lawmaking system*. Guided by the existing private problems brought before it, this public system creates rules that not only govern its problem-solvers, but also address future problems between other people. This public system, in turn, is embedded within an

173. *See id.*

174. The contract system performs a similar function, reinforcing our network of consensual exchanges. Torts differs from contracts because it covers consensual *and* nonconsensual transactions and protects vested property, body, and dignitary interests and not simply the expectations of cooperative parties. *See id.* at 7–8.

175. This rule prohibits references in jury trials to the parties' insurance coverage. *See generally* Alan Calnan, *The Insurance Exclusionary Rule Revisited: Are Reports of its Demise Exaggerated?*, 52 OHIO ST. L.J. 1177 (1991).

176. The collateral source rule holds that the plaintiff's own insurance, job benefits, or donations by friends may not be used to reduce the defendant's obligation to pay damages. *See* DOBBS ET AL., *supra* note 168, at 858–61.

177. Under the Federal Rules of Evidence, evidence of settlement discussions or agreements cannot be admitted as an admission of the validity or invalidity of a claim. FED. R. EVID. 408.

outer *sociocultural value system*, which both informs and limits everything below.

To understand the operation of the entire system, we first must examine each of its subsidiaries. The dispute resolution system bears the familiar three-part, coordinative structure of other legal institutions. The parties represent the system's egocentric and emotional complementarity.[178] An unfortunate encounter upsets one or both of the participants. Each party claims to be right and accuses the other of being wrong. Because of self-interest, neither party is able to recognize or accommodate the concerns of the other. As a result, they lash out like brawlers in a fistfight, with one party attacking and the other striking back in self-defense.

But rather than scuffle in private, they seek the help of intermediaries. Lawyers coordinate the parties' actions and communications.[179] They also bring the parties to the state, which plays two coordinating roles. Besides setting the procedural ground rules for the fight, the state provides rational principles to guide its resolution. These rules and principles create the dispute system's boundary conditions, prescribing and limiting the terms of the parties' now civil altercation.

Yet the state does not apply its substantive principles dogmatically. Instead, it enlists judges and juries to interpret, synthesize, and apply its maxims in a public trial. Emulating the Freudian ego or the brain's interpreter module, these pragmatic mediators use their social sensibilities to coordinate the case's disparate elements and find a stable decision point amidst the chaos.[180]

That chaos itself is contained and coordinated by a complex restoration ritual.[181] Though trials are governed by reasoned principles, and are supervised by logical administrators, they are not meant to be entirely rational. Storytelling converts abstract legal conflicts into taut courtroom dramas. As a result, every tort story becomes a powerful morality play. With passion and subjective experience guiding the legal arguments, the jury must reconcile the law's rational demands with the emotional force of the narrative.[182] As Professor Jessie Allen explains, "[n]orms and values … become saturated with emotion, while the gross and basic emotions become ennobled through contact with social values."[183]

Torts' dispute resolution system is an important component of a broader lawmaking system. Like a person's homeostatic system, which tells the brain when the body becomes imbalanced, torts' lawmaking system receives signals of social pathology from its body politic. The parties' choices become boundary conditions that limit the judge's lawmaking powers. Courts must use only the rules necessary to fix the problem and must apply them within the doctrinal constraints of precedent.

178. *See* Calnan, *Beyond, supra* note 22, at 62.

179. *See generally* Jean Roiphe, *Aggression, Unconscious Conflict, and the Role of the Lawyer,* 16 CARDOZO L. REV. 1205 (1995) (discussing the coordinative role of lawyers).

180. *See* Calnan, *Beyond, supra* note 22, at 62–63.

181. *See* Geoffrey P. Miller, *The Legal Function of Ritual,* 80 CHI.-KENT L. REV. 1181, 1220 (2005) (noting how the trial ritual stabilizes and restores social hierarchies).

182. *See* Jessie Allen, *A Theory of Adjudication: Law as Magic,* 41 SUFFOLK U.L. REV. 773, 803–04, 810–11 (2008) (discussing this reconciliatory process).

183. *Id.* at 811.

Besides serving this limiting function, precedent also facilitates tort's coordination dynamics. On a macro-scale, tort rules evolve through the common law process. This process is unmistakably coordinative, as current judges attempt to reconcile the contradictory but complementary decisions of past judicial coordinators.[184]

But torts' coordinative lawmaking system also extends into the micro-level of every case. After a judgment or trial verdict is issued, the parties have the option to appeal. This appeals process looks and works like other coordinative systems. While trial judges simply follow the authority of embedded legal rules, intermediate level courts engage in a form of social synthesis, seeking to harmonize each ruling with the law prevailing in the wider judicial community of that jurisdiction. If the parties are unsatisfied by this reconciliation, they can seek recalibration by the venue's highest court. A master coordinator, this body stabilizes legal capriciousness, reconciles judicial inconsistency, and conforms the law to the system's highest values and principles.[185]

Together, the lawmaking and dispute resolution systems share a powerful symbiotic relationship. But that relationship is not a closed loop. Instead, it is a feedback cycle that links both systems to the values of the surrounding culture. These exchanges take place through two portals. One is the jury system. By requiring citizen participation in trials, the tort system infuses its coordinative process with the common sense, experience, and morality of the outside world.[186] Tort law may set the standards for social intercourse, but jurors—as social representatives—bring those rules to life.

Beyond this entry point, torts relies on public policy to access and absorb social information. In certain preplanned places, like the analysis of negligence duties, courts automatically look to the outside world to get their normative bearings.[187] Other times, courts use public policy episodically, invoking social norms or cultural values to serve as analytic tiebreakers in hard cases.[188] This can occur in any type of tort litigation, in any tort theory of recovery, and in any element or issue within a tort case. So even as courts develop their own legal conventions, they must constantly attune their views to the perspectives of other lawmakers and the public at large.

Admittedly, these interactive layers of coordination are not unique to the tort system. They are shared by other legal fields—like contracts and property—within the system of civil justice. However, even if this structure is not *sufficient* to define torts, it does serve as a *necessary prerequisite* to any accurate account. Thus, it can help exclude one-dimensional theories that

184. *See* Calnan, *Beyond, supra* note 22, at 68–69.

185. *See generally* BENJAMIN N. CARDOZO, THE NATURE OF THE JUDICIAL PROCESS (1921) (arguing that law is ever-changing and that judges should follow and apply the law in easy cases but make new law in hard cases by balancing competing considerations like custom, social welfare, and justice).

186. *See* Jason M. Solomon, *The Political Puzzle of the Civil Jury*, 61 EMORY L.J. 1331, 1376–87 (2012) (reviewing the jury's traditional roles of drawing upon and reinforcing community norms).

187. *See* ALAN CALNAN, DUTY AND INTEGRITY IN TORT LAW 83 nn. 30–31 (2009) [hereinafter CALNAN, DUTY AND INTEGRITY] (noting the prevalence in negligence law of multifactor duty analyses that specifically include considerations of public policy).

188. *See, e.g.*, RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 7 cmts. c–g (AM. LAW INST. 2010) (describing contexts in which public policy may be used to reconcile various duty conflicts).

do not address torts' trilateral, systemic, and synergetic framework.[189] That said, this systemic insight does not stop at torts' superstructure. It also illuminates torts' substantive infrastructure, which shapes the system's boundaries.

B. BOUNDARIES

Torts' most distinctive boundaries consist of its rules, doctrines, standards, policies, theories, and principles. Known collectively as tort "law," these limits hold a powerful and pronounced place at the system's surface. They determine the types of reasons that parties may and may not give for imposing or avoiding tort liability. These boundaries have a familiar nested structure that mirrors other human systems. At its broadest level, torts consists of adversarial complementarities, like rights and duties and actions and defenses. These binaries bracket the law's liability options and foster the search for medial alternatives. As we move down a level, we find torts' three substantive liability theories: intentional torts, negligence, and strict liability. Propitiously framed to track mankind's moral cognitions and decision-making mechanics, these theories stand ready to reconcile virtually any type of human dispute.

1. Structure

As a system of sociocultural homeostasis, all law seeks to promote human survival and flourishing by maintaining a healthy state of social equilibrium. Since competition and cooperation are essential to social function, law must regulate human behavior to ensure an appropriate balance of both. It accomplishes this objective by establishing behavioral rules that set the parameters for social interaction and corrective mechanisms for rule and parameter violations. As Damasio observes, "organisms whose evolutionary design was centered around life regulation and the tendency toward homeostatic balance invented forms of consolation for those in suffering, rewards for those who helped the sufferers, injunctions for those who caused harm, norms of behavior aimed at preventing harm and promoting good, and a mixture of punishments and preventions, of penalties and praise."[190]

These features of legal homeostasis—rewarding socially beneficial behavior and punishing or enjoining socially debilitating conduct that causes harm to others—are both precipitated and shaped by our entrenched homeostatic values. Thus, law generally promotes cooperation and caring, freedom, fairness, loyalty, respect for authority, and a loose combination of integrity and sanctity.[191] To this end, legal systems consistently inhibit the infliction of harm, oppression, cheating, disloyalty, disobedience, and degradation.

In torts, as in other fields, the law embeds its values in substantive rights and duties. Rights protect and secure freedom, while duties impose freedom

189. This would include theories grounded exclusively in economic efficiency, corrective justice, social justice, civil recourse, compensation, or deterrence.

190. DAMASIO, *supra* note 160, at 311.

191. *See* HAIDT, *supra* note 138, at 178–79 and accompanying text.

restrictions. Though antipodal, these concepts are interconnected and coextensive. Most primary rights are equipped with secondary rights that empower their holders to enforce the duties of others, who possess secondary vulnerabilities or liabilities to that power.[192] Thus, if someone violates my right to bodily integrity, the law affords me a tort claim to take action against the interloper. These right-duty configurations coordinate the parties' liberties in preplanned ways.

However, such complementarities are not always neat and tidy. When an interpersonal clash occurs, a court often must reconcile the accuser's apparent right with the accused's apparent duty. Indeed, because the accused also will have rights to be free from unwarranted restrictions, and the accuser will have duties not to assert spurious claims, the reconciliation process may be extremely complex.[193] In these situations, the existence of general rights and duties helps to facilitate the decision-making process. By giving these polar positions a prominent place in legal analysis, the decision-maker is forced to simultaneously weigh and coordinate their competing tendencies.

Existing tort theories interpret this rights-talk in different ways. Civil recourse theory says torts' scheme of rights empowers victims of wrongs to take recourse against their wrongdoers.[194] But this view is too one-sided. As we have seen, the tort system is not structured solely for unilateral action. Torts is a game for three, not one; and these participants—though forced to interact—do not all seek the same thing. While the plaintiff may seek recourse, the defendant frequently does not and the state is presumably indifferent. Granted, this relationship begins with the filing of a lawsuit, but the goals of both the players and the game are decidedly diverse and antagonistic. Once the contest is joined between the parties, the state does not condone or support one side only, but rather serves as the mediator, moderator, and coordinator of this balanced competition.

Taking the game analogy to its extreme, civil recourse theory is a lot like describing football as a set of rules that enable one team to execute plays to enter the end zone of another. It ignores the mix of offense *and defense* that truly makes the game a competition. Torts, like football, is not just an offense facilitator; it is a conflict in which combatants vie for supremacy under the watchful eye of an independent referee. Success or failure depends on how each side coordinates its strengths and weaknesses to adapt to the strengths and weaknesses of its opponent. In football, they say that defense wins championships. In tort theory, the absence of defense certainly ensures civil recourse's defeat.

Professor Tidmarsh's process theory comes closer to this truth, yet still falls short. He argues that torts creates rights to an adjudicatory process designed to allocate loss.[195] While Tidmarsh acknowledges that this process involves the existence of a dispute, his idea of adjudication appears

192. *See* ALAN CALNAN, JUSTICE AND TORT LAW 23–25 (1997).

193. *See generally* ALAN CALNAN, THE RIGHT TO CIVIL DEFENSE IN TORTS 4–9 (2013) [hereinafter CALNAN, CIVIL DEFENSE].

194. *See* John C.P. Goldberg & Benjamin C. Zipursky, *Civil Recourse Defended: A Reply to Posner, Calabresi, Rustad, Chamallas, and Robinette*, 88 IND. L.J. 569, 570 (2013) (summarizing civil recourse theory as follows: "The commission of a tort confers on the victim a particular legal power; namely, a power to demand and (if certain conditions are met) to obtain responsive action from the tortfeasor.").

195. *See* Tidmarsh, *supra* note 12, at 1338–41.

circumscribed and slanted. In his view, the adjudicatory right entitles the plaintiff to assert a claim "against a person required to provide a remedy if the claim is justified."[196] Like civil recourse theory, this account emphasizes only the plaintiff's claim-right. The problem is, torts is a belligerent battle, not a simple claim. Because that battle has two sides, *each* combatant faces resistance from the other, and *both* parties face impediments erected by the state. So the plaintiff's claim not only is *inhibited* by serious substantive and procedural obstacles, it also is *counterattacked* by an opponent with an impressive and potentially lethal arsenal of weapons.

Indeed, torts' rights have a distinctly adversarial posture. For each of plaintiff's theories of liability, the defendant may present innumerable arguments to defeat it. Such counterarguments not only limit and sharpen the issues for litigation, they incentivize the search for reconciliation or synthesis. Even if the counterarguments fail, the defendant may plead and prove a range of affirmative defenses. Besides shifting blame to the plaintiff, these defenses can excuse, justify, or immunize the defendant's own behavior.[197] Most notably, an aggrieved defendant can go on the offensive, filing motions against frivolous claims, counterclaims for transactional harms, and even independent actions for the plaintiff's wrongful use of civil proceedings.[198]

2. Theories

Torts' adversarial nature gives it an identifiable periphery, but it does not expose the systems' true identity. Most lawyers, judges, and legal academics believe that identity is broadly defined by torts' theories of liability. To pursue a tort action, a plaintiff must allege theories of intentional tort, negligence, or strict liability.[199] In essence, these concepts fit the traditional legal scheme of rules, standards, and principles or policies.[200] But beneath this familiar structure lies a couple of astonishing truths. Individually, each boundary-type correlates to a key component of human morality; and collectively, torts' trilogy deftly coordinates its conflicting impulses just like any other complex system.[201]

Given the structure's remarkable resemblance to mankind's genetic, neural, and social systems, it is helpful to explore these theories in similar fashion—from the inside out. Legal rules generally ingrain law's deepest and most basic instincts and individual rights, giving them a level of certainty befitting their homeostatic importance.[202] Such rules command or prohibit selected behaviors to promote the survival of the species. To use a

196. *Id.* at 1351.
197. *See* DOBBS ET AL., *supra* note 168, at 40–43 (discussing affirmative defenses and defensive arguments).
198. *See id.* at 1036–42 (discussing wrongful civil litigation).
199. *See id.* at 4–5 (addressing "Bases of Tort Liability").
200. *See generally* Larry Alexander, *The Objectivity of Morality, Rules, and Law: A Conceptual Map*, 65 ALA. L. REV. 501 (2013) (comparing legal rules, legal standards, and legal principles); Barbara Bennett Woodhouse, *Mad Midwifery: Bringing Theory, Doctrine, and Practice to Life*, 91 MICH. L. REV. 1977 (1993) (discussing the importance of teaching doctrine, theory, and practice—including public policy—in legal education).
201. *See* Calnan, *Beyond, supra* note 22, at 66.
202. *See id.*

neuroscience analogy, black letter law represents an automatic mode of legal cognition. It covers obvious wrongs that arouse instant reproval.

Intentional torts fall into this category. Grounded in the core values against harming, cheating, and degrading others, intentional torts create clear proscriptions that make certain behaviors presumptively wrongful. They prohibit people from purposefully or knowingly interfering with the bodies, minds, freedoms, or properties of their neighbors.[203] If a tortfeasor violates one of these rules, she must offer a reasonable justification for the breach.[204] If she cannot, she is punished for her selfish impulsivity, even if she causes no actual injury to her victim.

Recently, Professor John Mikhail has shown how such moral intuitions specifically explain the intentional tort of battery.[205] Battery is an intentional act that causes a harmful or offensive contact to another person.[206] Relying on research from the cognitive sciences, Mikhail concludes that battery's three critical elements of act, intent, and contact are controlled by corresponding principles of folk moral psychology.[207]

According to the action principle, people instinctively believe harm caused by action is morally worse than harm caused by omission.[208] In addition, the intent principle creates an intuition that, when harm is the actor's desired goal, her act "is morally worse than equivalent harm foreseen as the side effect of a goal."[209] Finally, the contact principle makes us feel that physically contacting someone "is morally worse than causing equivalent harm to a victim without using physical contact."[210] Coordinating the care, autonomy, and integrity norms, infants grasp these imperatives almost from birth,[211] and ordinary adults retain these instincts even though they often cannot clearly articulate them.[212]

Negligence is normatively different. Such acts are not intended to harm. Nor do they purposefully impair the autonomy or dignity of others. Thus, negligent conduct is not presumptively wrongful. Instead, it is a legal act carelessly performed under the prevailing circumstances.[213] Consequently, such behavior is presumptively reasonable unless and until society says otherwise.[214] In short, negligence is a conventional wrong.

As noted earlier, conventional wrongs complete our binary sense of morality. Because these wrongs are not backed by a gut instinct, people do not see them as universal, categorical, or serious. Their wrongfulness depends entirely on an outside authority declaring such conduct

203. *See* DOBBS ET AL., *supra* note 168, at 4.
204. *See* Alan Calnan, *Anomalies in Intentional Tort Law,* 1 TENN. J.L. & POL'Y 187, 233–34 (2005) [hereinafter Calnan, *Anomalies*] (describing this presumptive form of liability).
205. John Mikhail, *Any Animal Whatever? Harmful Battery and Its Elements as Building Blocks of Moral Cognition,* 124 ETHICS 750 (2014) (exploring the moral psychology of a battery action).
206. *See* DOBBS ET AL., *supra* note 168, at 61, 62–63.
207. *See* Mikhail, *supra* note 205, at 776.
208. *See id.*
209. *Id.*
210. *Id.*
211. *See id.* at 779–82.
212. *See id.* at 777.
213. *See* DOBBS ET AL., *supra* note 168, at 187.
214. *See* Alan Calnan, *The Fault(s) in Negligence Law,* 25 QUINNIPIAC L. REV. 695, 704 (2007) [hereinafter Calnan, *Fault(s)*] (explaining this presumption and its rebuttal by showing unreasonableness).

unreasonable. That authority could come from any powerful or credible source. In negligence law, it comes from community consensus.

Based on values of reciprocity, fairness, and group loyalty, negligence uses a general standard of reasonable care to access its social conventions.[215] This standard is torts' manual mode of decision-making. When that standard is filtered through a judge or jury acting as social proxy, it coordinates conflicting perspectives to illuminate the ties that bind. In this sense, the reasonableness standard works just like the social module of the brain—promoting system harmony and strengthening system solidarity in the pursuit of social homeostasis.

Strict liability is more flexible and eclectic. It does not openly declare its *reason* for imposing liability, like intentional torts and negligence. Rather, it merely states its *goal* of making liability stricter than normal.[216] As a result, strict liability's normative dimensions can extend across and even transcend torts' other liability schemes.[217] For example, some forms of strict liability impose prohibitive rules for presumptive wrongs, like knowingly possessing wild or vicious animals.[218] By comparison, the theory of strict liability for abnormally dangerous activities employs a multifactor standard that elicits community norms and values to judge socially aberrant conduct.[219]

But much of strict liability is grounded in policy and principle regardless of wrongdoing. Respondeat superior holds employers liable for injuries caused by their workers to prevent the principal's unjust enrichment.[220] Nondelegable duties attach to persons who enlist others to perform dangerous jobs that threaten the public interest.[221] Most prominently, strict products liability was created to alleviate consumers' evidentiary burdens, equalize bargaining imbalances between consumers and sellers, protect consumer reliance on seller marketing, encourage the development of safer goods, and more fairly spread the costs of product-related accidents.[222]

With such plucky resourcefulness and high-minded rationality, strict liability serves as torts' left-brain interpreter. It takes cases that fall through the law's cracks and subjects them to independent review. When their normative contours match existing liability theories, it replicates the scheme that fits. For misfit cases, strict liability interweaves the law's automatic and manual modes to improvise new types of situational problem solving. Yet it also strengthens torts' core values, summoning principle and policy to test the law's substantive boundaries, even as it searches for systemic coherence.

By recognizing these three liability bases, tort theory appears to accurately reflect human nature. The problem is, torts' theorizing does not stop there. Instead, it transforms this trilogy into a rigid classification scheme. In doing so, the prevailing paradigm offers an alluring half-truth—one that is both fundamentally false *and* essentially unnatural. The fact is,

215. *See* Solomon, *supra* note 186, at 1376–87.
216. *See* Calnan, *Anomalies*, *supra* note 204, at 241.
217. *See id.* at 238–42, 239-41 nn.125–26 (describing strict liability's flexibility and capaciousness).
218. *See* DOBBS ET AL., *supra* note 168, at 779–84.
219. *See* RESTATEMENT (SECOND) OF TORTS § 520(a)–(f) (AM. LAW INST. 1977).
220. *See* DOBBS ET AL., *supra* note 168, at 753–56.
221. *See id.* at 766–70.
222. *See* DAVID G. OWEN, PRODUCTS LIABILITY LAW 249–51, 277–86 (3d ed. 2015).

torts' liability concepts are unmistakably systemic. This means they are integrated and dynamic, not separate and stable. In fact, no tort theory holds a monopoly on any particular normative domain. Prohibitive rules, social standards, and foundational principles/policies populate *all* tort theories, forging transtheoretical synergies that defy easy classification. What's more, these normative concatenations know no bounds. Indeed, as we shall see next, new fusions constantly erupt and change all across the tort landscape to keep the law's substantive boundaries continually in flux.

VI. TORT DYNAMICS

Because torts is a system of systems, its boundaries do not—indeed, cannot—completely define it. Instead, the law's liability theories are merely the working parts of a functional mechanism. The purpose of this mechanism is not corrective justice, or distributive justice, or economic efficiency, or civil recourse. It is coordination. Specifically, it is the coordination of interpersonal, political, social, moral, rational, and, ultimately, legal conflicts. Because coordination is an active and ongoing process, its operation is necessarily dynamic. Thus, the true nature of the tort system is, and always has been, coordination dynamics.

As a scientific hypothesis, this claim requires evidence of cause *and* effect.[223] My prior work and the preceding portions of this article have addressed the causation plank, revealing how complexity causes coordination dynamics, and how such dynamics govern human and other natural systems, including systems leading to law.[224] Although these relationships are well documented, there currently are no scientific studies investigating the causal link between that phenomenon and human lawmaking. So definitive proof of causality must await future research.

As for effects, I have argued elsewhere that law in general displays unmistakable complexity in its most distinctive features, including its history, structure, substance, process, and jurisprudence.[225] In this Part, we shall see how tort law shows similar systemic and coordinative effects. Although coordination dynamics pervades the tort system, this defining force is especially striking in three key areas: the law's historical transitions, its theoretical and doctrinal integrations, and its intersystem synergies. Together, these findings reveal that the "law" at torts' seemingly placid surface is not an accurate depiction of reality, but rather is a façade for the turbulent vortex of conflict and change that lies beneath.

A. TRANSITIONS

Complex systems have temporal dimensions.[226] They not only interconnect to form unending system chains that extend from the quantum world to the farthest reaches of the cosmos; they also interact, adapt, and change over time. These transitions create varying patterns of activity.

223. *See generally* JUDEA PEARL & DANA MACKENZIE, THE BOOK OF WHY: THE NEW SCIENCE OF CAUSE AND EFFECT (2018) (discussing the new causal revolution in science).

224. *See supra* note 22 and authorities cited therein.

225. *See* Calnan, *Beyond, supra* note 22, at 56–77.

226. *See* Christian Fuchs & Wolfgang Hofkirchner, *The Dialectic of Bottom-up and Top-down Emergence in Social Systems*, 3 TRIPLEC 28, 28–30 (2005).

Indeed, a system may exhibit stability one moment and instability the next. Even these short-term patterns can give rise to long-term historical tendencies or movements—much like global warming trends or shifts in free market economies.[227] Not surprisingly, the same patterns are evident in the development of legal systems, and are particularly noticeable in torts.

1. Historical

Since Anglo-American tort law is the product of the Western common law tradition, torts' historical trajectory begins in medieval times. Rather than detail that intricate history, which I have done in an earlier book,[228] the goal here is simply to capture the law's overarching developmental patterns.

Stepping back from the timeline, Western law appears to have progressed very much like humanity itself. As historian Harold Berman reports, "[e]ver since the early formation of discrete modern Western legal systems in the twelfth century, it had been taken for granted that a legal system has an ongoing character, a capacity for growth over generations and centuries."[229] Though unknown at the time, that growth displayed what is now recognized as a unique evolutionary pattern, with lawmakers regularly adapting past solutions to critical social problems to suit present circumstances.[230]

This trajectory mirrors the developmental cycles so familiar to human genetics, neuroscience, psychology, and sociology. In each, selfish survival impulses lead to and mix with cooperative social instincts, which propagate additional urges for ratio-moral reconciliation.

To illustrate, England's royal courts initially implemented quick, harsh, and primitive punishments against selfish rule-breakers, often resulting in a trial by battle or ritualized ordeal.[231] As this nascent justice system expanded and stabilized, it began using customs, juries, and the common law to strengthen community bonds.[232] Eventually, jurists sought to coordinate the law by writing legal treatises that harmonized precedents and extracted their normative principles.[233] The result, according to Professor Berman, was "the balancing of morality and politics in the light of history" or "the balancing of justice and order in the light of experience."[234]

The tort system developed in identical fashion. In previous work, I described the history of English tort law as a maturation process that progressed gradually in three phases, much like the expanding rings of a tree.[235] In the early medieval phase, tort punished aggressive and willful

227. *See id.* at 29.
228. *See generally* ALAN CALNAN, A REVISIONIST HISTORY OF TORT LAW: FROM HOLMESIAN REALISM TO NEOCLASSICAL RATIONALISM (2005) [hereinafter CALNAN, REVISIONIST HISTORY] (describing the historical development of the common law, and specifically the law of torts).
229. Harold J. Berman, *The Origins of Historical Jurisprudence: Coke, Selden, Hale*, 103 YALE L.J. 1651, 1654 (1994).
230. *See id.* at 1695, 1697, 1698, 1702, 1712–13.
231. *See* CALNAN, CIVIL DEFENSE, *supra* note 184, at 20–21, 23–24, 26–28.
232. *See id.* at 163–72, 174–77.
233. *See id.* at 167–71 (discussing early treatise projects).
234. Berman, *supra* note 229, at 1731.
235. *See* CALNAN, REVISIONIST HISTORY, *supra* note 228, at 278.

conduct that demonstrated disobedience for royal authority and inflicted physical damage on people and property.[236] By the late medieval period, the law began enforcing strict social responsibilities like securing fires, repairing infrastructure, and maintaining sanitation.[237]

With the onset of the Industrial Revolution, the law improvised a general standard of reasonable care to address the increasingly complex conflicts of modern life.[238] Indeed, for every wrong there now would be a flexible, rational framework for finding a suitable remedy. Torts had finally entered the modern era as a full-grown legal regime adapted to the challenges of its evolving social environment.

2. Systemic

In retrospect, torts' developmental process was far more anthropological than botanical. It also was undeniably systemic. A product of the human mind, torts expanded like man's triune brain, first dwelling on impulsive behavior, then establishing social solidarity, and ultimately generating the capacity for rational decision-making. Or, to use Kohlberg's developmental psychology, torts went through selfish, social, and rational life phases, adding new coping mechanisms as it fumbled toward adulthood.[239]

Even more strikingly, the law adapted to these changes just like human cultural systems. As noted earlier, cultures often begin as hunter-gatherer confederations, transition into communal chiefdoms, and develop into republics or democracies.[240] During this process, strict punishments pervade the first phase, social customs and conventions dominate the second, and rights and principles govern the third.[241]

Torts evolved accordingly. In tort's primitive phase, courts developed inchoate actions of intentional trespass to punish people who deliberately disrespected others.[242] As society showed more self-control, torts gradually moved into its complementation phase, instilling a sense of reciprocity and community by strictly upholding many important social customs.[243] Once these ties were forged, torts entered its final generative stage, using abstract moral principles to create personal rights and responsibilities that could be privately enforced in a catchall action for negligence.[244]

This history continues to shape torts' primary bases of liability, albeit in a slightly altered pattern. Intentional torts still punish and deter harmful egocentric behavior that poses the greatest threat to survival.[245] Meanwhile, the theory of strict liability has diverged along several lines, as previously discussed. While this action continues to regulate abnormally risky activities that violate our most important social usages, it also plugs gaps in torts'

236. *Id.*
237. *See id.* at 233–35, 256–61.
238. *See id.* at 241–42, 274–76, 279–80, 281–82.
239. *See* Calnan, *Beyond, supra* note 22, at 45–46 (describing Kohlberg's developmental theory).
240. *See supra* notes 164–74 and accompanying text.
241. *See* Calnan, *Beyond, supra* note 22, at 58.
242. *See* CALNAN, REVISIONIST HISTORY, *supra* note 228, at 197–99.
243. *See id.* at 206–08.
244. *See id.* at 278–80.
245. *See* Calnan, *Anomalies*, *supra* note 204, at 233–34.

normative framework, often by invoking rational policies and fundamental principles.[246]

Negligence law has shifted as well, only in the opposite direction. After developing a general principle of reasonableness, negligence added more specific rules and customs to address recurring social problems.[247] Yet these theoretical transitions do not make torts incoherent. Instead, they affirm its status as a system of dynamic coordination, comingling our instincts, conventions, and reason to reconcile our homeostatic values.[248]

B. INTEGRATIONS

Admittedly, torts' liability scheme *is* incoherent in one significant sense. Its theoretical labels often do not match the concepts they are supposed to explain and justify. There are three main reasons for this disconnect. First, the theories of intentional torts, negligence, and strict liability are not differentiated by their normative content but actually are highly integrated. Second, these liability schemes are not determined solely by substantive doctrine, but also depend on the dynamic interplay of procedures and defenses. Finally, and most importantly, torts' theories are not immutable ideals. Instead, they are complex systems that undergo perpetual change and consistently produce unplanned and unpredictable results. This volatility not only compromises the current conception of torts' theoretical triad; it identifies coordination dynamics as the systems' only true catalyst.

1. Intentional Torts

Such dynamics play a conspicuous role in intentional torts. Situated at the farthest end of the fault spectrum, these torts are supposed to cover clearly wrongful acts intended to cause dignitary harms.[249] These are the sorts of wrongs that challenge the rule of law and threaten the peace and tranquility of society. So viewed, intentional torts are supposedly different from and worse than negligent acts. Though faulty, negligence is wrongful only if it violates the social standard of reasonableness.[250] Moving to the other end of the liability continuum, intentional torts are presumably the polar opposites of strict liability, which purport to impose liability without fault. [251]

Yet theory is not reality. In practice, intentional torts are not uniform at all. Rather, they are a hodge-podge of quite different problems coordinated by an array of liability norms.

246. *See* Kenneth W. Simons, *The Restatement (Third) of Torts and Traditional Strict Liability: Robust Rationales, Slender Doctrines,* 44 WAKE FOREST L. REV. 1355, 1361–68, 1372–73 (2009) (noting the reciprocity and community fairness norms underlying strict liability); Alan Calnan, *Strict Liability and the Liberal-Justice Theory of Torts,* 38 N.M. L. REV. 95, 122–30 (2008) (describing strict liability's diversity and adaptability).

247. *See infra* notes 286–309 and accompanying text.

248. *See generally* Gregory C. Keating, *Reasonableness and Rationality in Negligence Theory*, 48 STAN. L. REV. 311 (1996) (arguing that negligence law is best understood under social contract theory as the reconciliation of abstract rights to freedom and security).

249. *See* Calnan, *Anomalies*, *supra* note 204, at 191, 193 fig. 1.

250. *See id.* at 191, 193 fig. 1, 195–96.

251. *Id.* at 191, 193 fig. 1.

One recurring problem concerns the intent element itself. According to the *Restatement (Second) of Torts*, intent is the desire or knowledge to a substantial certainty that one's act will bring about some forbidden consequence.[252] On its face, this definition appears clear enough. But in hard cases, its certainty gives way to ambiguity. Though an alleged tortfeasor may desire to act, she may not realize either who will be injured or what harm will follow. Under the transferred intent doctrine, the act will be considered intentional even though the actor meant no harm to the actual victim.[253] Going a step farther, the single intent and mistake rules impute intentionality to actors whose mental states are merely careless or even innocent.[254]

In both cases, the law switches from automatic to manual mode, coordinating its prohibitive rule with rational policies and principles like deterrence and fairness. The net result is something far different from our classic notion of an intentional tort. Indeed, by imposing near absolute responsibility upon actors who lack traditional tortious intent, the law appears to approach strict liability.[255]

Even without these exceptions, intentional torts and strict liability seem more alike than different. Besides its no-fault dimension, strict liability imposes substantive and procedural mechanisms that facilitate the plaintiff's recovery and/or inhibit the defendant's defense.[256] Yet these same characteristics appear to define intentional torts as well. Like strict liability, intentional torts are both categorical and activity-based, presumptively condemning various classes of intentional conduct regardless of any mitigating circumstances.[257] Intentional torts also create expansive duties that cover completely unforeseeable harms.[258] While plaintiffs must prove intent, they do not necessarily have to show fault, since even knowing or purposeful harms may be committed in good faith.[259] In fact, the intentional tort plaintiff receives the procedural benefit of a fault presumption, which shifts to the defendant the burden of justifying her conduct.[260]

In isolation, the elements of intentional torts seem to fit the theory's description. But working as a coordinative system, this liability theory is really something else. It not only transcends the sum of its parts; it melds with its conceptual counterpart, strict liability, to impose an onerous responsibility that belies its substantive aspirations.[261]

Ironically, or perhaps predictably in the systems world, intentional torts also bear the distinctive stamp of reasonableness—the supposed hallmark of negligence.[262] As noted above, many forms of intentional behavior are viewed as presumptively unreasonable. If this presumption were conclusive,

252. *See* RESTATEMENT (SECOND) OF TORTS § 8A (AM. LAW INST. 1965).
253. *See* Calnan, *Anomalies*, *supra* note 204, at 207–15.
254. *Id.* at 215–18. Single intent, which typically applies in battery actions, holds that an actor has tortious intent if she desires or knows to a substantial certainty that her conduct will cause contact to another person, even if she does not know that the contact will be harmful or offensive. *See* RESTATEMENT (THIRD) OF TORTS: INTENT'L TORTS TO PERSONS § 102 cmt. b (Tent. Draft No. 1, 2018).
255. *See* Calnan, *Anomalies*, *supra* note 204, at 214–15.
256. *Id.* at 241.
257. *Id.* at 242–44.
258. *Id.* at 244–46.
259. *Id.* at 246–48.
260. *Id.* at 251–56.
261. *Id.* at 239.
262. *Id.* at 229–33.

the bright-line rule would hold and the reasonableness of the defendant's conduct would not receive further scrutiny. But such is not the case. The plaintiff's presumption may be rebutted by a litany of defenses.[263] Though the defendant must raise such a rebuttal, this often is not difficult to do. The defendant may argue any number of legally recognized justifications, including consent, self-defense, defense of others, defense or recovery of property, necessity, and so on.[264]

When this happens, as it routinely does, the liability system shifts from a simple application of a prohibitive rule to a complex analysis of reasonableness.[265] Indeed, with the exception of consent, all of these defenses privilege people to intentionally harm others so long as their conduct is reasonable. The resolution of *that* question depends *not* on embedded behavioral assumptions, but rather on community norms and the prevailing circumstances. However, because the litigation includes both the alleged theory *and* its defense, the factfinder faces a complex complementarity of strict rule and right reason. That conflict is not reconciled by any intentional tort concept. Instead, it requires the coordination of concepts that run the gamut of the tort spectrum.

Even without reasonableness defenses, intentional torts framed as prohibitive rules may ultimately depend on flexible standards or abstract principles.[266] Take the tort of outrage or intentional infliction of emotional distress. Under this theory, liability extends to any person who, through extreme and outrageous conduct, intentionally or recklessly causes another person severe emotional distress.[267] Because the notion of outrageousness is vague, it must be amplified by a standard of community decency.[268] But given the standard's own indeterminacy, this social medium may not resolve the theory's interpretive problem. Indeed, where the outrageous conduct is anachronistic, novel, or complex, courts may need to consult a mix of normative factors to fill the interpretive void.[269]

Even this may not be enough. Sometimes the law must resort to its highest principles. For instance, when the outrageous behavior involves a speech-act that raises a matter of social concern, the tort rule butts up against the principle of free expression.[270] Here, courts cannot decide the matter by relying solely on the theory's traditional elements of proof. Instead, they must reconcile the law's core values to reestablish its doctrinal boundaries.

263. *Id.* at 233–38.
264. *Id.* at 235–38.
265. *Id.*
266. *Id.* at 242, 243.
267. *See* RESTATEMENT (SECOND) OF TORTS § 46 (AM. LAW INST. 1965).
268. *See id.* cmt. d (defining outrageous conduct as behavior that "go[es] beyond all possible bounds of decency," is "utterly intolerable in a civilized community" and would cause an ordinary person to exclaim, "Outrageous!").
269. *See id.* cmts. e & f (highlighting the defendant's abuse of authority and knowledge of the plaintiff's susceptibility to emotional distress); Brandon v. County of Richardson, 624 N.W.2d 604, 621–24 (Neb. 2001) (identifying several factors for determining outrageousness).
270. *See, e.g.*, Snyder v. Phelps, 562 U.S. 443, 458 (2011) (holding that where the defendant's outrageous expression raises a matter of public concern, it is protected by the First Amendment).

2. Negligence

Such coordinative patterns animate negligence law as well. In fact, negligence's coordination dynamics are both internal and external. A major part of the law's internal integration comes from its elements of proof. To establish negligence, a plaintiff must prove that: (1) the defendant owed her a duty of care; (2) the defendant breached that duty; and (3) the defendant's breach caused her to suffer (4) legally recognized damage.[271] Although these elements are presented as separate requirements, they actually are interrelated. The defendant's breach of duty represents her autonomy and lack of care, while the plaintiff's damage signifies her oppression and harm. Together, these experiences form a single wrong unified by the concept of causation. This linkage not only aligns the parties' interests against each other, it facilitates their comparison, mediation, and reconciliation.

In fact, this is precisely how juries address these elements. According to recent research, jurors approach liability issues as a "complex and contradictory" system in dynamic tension,[272] "containing conflicting impulses and intuitions that can be differently activated depending on the situation."[273] Because of this orientation, they see the parties as "linked in a complementary relationship" of good guys and bad actors, in which findings of goodness or badness on one side produce an equal and opposite evaluation of the other.[274] Consequently, their main objective is to do "total justice" in their decisions,[275] employing a "multidimensional" process[276] to "restore proper order" to the relationship[277] by settling all scores and squaring or balancing all accounts between the litigants.[278]

Juries fulfill this function by coordinating the law with their own sense of humanity. Though negligence is broken down into discrete elements, jurors routinely ignore instructions to keep them apart.[279] Instead, they merge them into global responsibility judgments.[280] Specifically, juries commingle the elements of fault and causation, allowing a conviction about one element to negate doubts about the other.[281] They also conflate the issues of liability and damages by using the severity of the plaintiff's injury to assess the defendant's culpability.[282]

These tradeoffs are symptomatic of an even deeper coordinative instinct. Earlier, we saw how the ritual of litigation *conceptually* blends a trial's emotional narrative with the law's formal reason.[283] Yet as a *practical* matter, jurors handle tort cases the same way. Because jurors view disputes as melodramas,[284] they seek to resolve them in emotionally satisfying ways,

271. *See* DOBBS ET AL., *supra* note 168, at 197–98.
272. NEAL FEIGENSON, LEGAL BLAME: HOW JURORS THINK AND TALK ABOUT ACCIDENTS 14 (2001).
273. *Id.* at 15.
274. *Id.* at 104.
275. *Id.* at 5, 16, 104.
276. *Id.* at 5.
277. *Id.* at 104.
278. *See id.* at 13, 16, 104.
279. *See id.* at 106.
280. *See id.*
281. *See id.*
282. *See id.* at 17, 106.
283. *See supra* notes 181–83 and accompanying text.
284. *See* FEIGENSON, *supra* note 272, at 13–14, 87.

blending their passions and cognitions into holistic judgments that "feel right" even if they do not follow the strict letter of the law.[285]

Apart from the elements of proof, negligence achieves internal integration through its duality of theory and defense. Intentional tort defenses promote coordination by introducing the social standard of reasonableness. In negligence, however, both plaintiff and defendant must abide that standard to avoid liability. Just as the plaintiff may assert the defendant's negligence, most jurisdictions now permit the defendant to allege the plaintiff's comparative fault.[286] This comparative fault system presents an even more complex problem. Besides judging the plaintiff and the defendant individually, the fact finder must determine each party's contributions to the accident as a whole.

Amazingly, however, this problem begets its own coordinative solution. By framing the parties' conduct as parts of a systemic conflict, the law exposes the yin-and-yang complementarity of a negligence case. Granted, one party may share more blame than the other, but together their fault allocations must fully account for the accident. This framework closely mimics jurors' own decision-making process, as noted above. It reinforces the view that the parties' wrongs are interrelated and inversely proportional. This comparative mindset also establishes the jury's normative metastability, permitting it to simultaneously consider and weigh the parties' opposed contentions. In reconciling these arguments, jurors do not evaluate each party separately. Rather, they intermix injury severity, causal responsibility, and party blameworthiness to apportion fault and award damages.[287]

Negligence does not just coordinate the components of its own liability system; it also integrates concepts from torts' other liability theories. Because negligence's reasonableness standard is torts' broadest and most flexible normative faculty, it experiments with new ideas and practices, just like the concept of strict liability. Yet reasonableness also shifts out of manual mode to avoid perpetually reanalyzing every problem. Having learned from human experience, it often borrows the automated wisdom of strict liability and intentional torts to help reinforce torts' core values.[288]

Examples of such transtheoretical migrations are too extensive to enumerate, so I will merely offer some highlights. Like torts' other theories, negligence imposes an assortment of strict rules that create presumptions of unreasonableness. Some of these rules apply to especially dangerous actors. For example, it is presumptively wrongful for children to engage in adult or inherently dangerous activities.[289] Adults with mental incapacities also bear strict responsibilities for injuries caused by their often unwitting actions.[290]

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285. *Id.* at 16–17, 106–07.

286. *See* William E. Westerbeke, *In Praise of Arbitrariness: The Proposed 83.7% Rule of Modified Comparative Fault*, 59 U. KAN. L. REV. 991, 991 (2011) (noting that "by the end of the [twentieth] century[,] forty-six states, Guam, Puerto Rico, and the Virgin Islands had all adopted some system of comparative fault").

287. *See* FEIGENSON, *supra* note 272, at 79–80, 83.

288. *See* Calnan, *Fault(s)*, *supra* note 214 (exploring the similarities between negligence, intentional torts, and strict liability).

289. *See* DOBBS ET AL., *supra* note 168, at 236 (courts in these situations apply an adult standard of care which most children presumably cannot satisfy).

290. *See* Calnan, *Fault(s)*, *supra* note 214, at 723–26.

Other negligence rules encompass hazardous or simply antisocial activities evocative of strict liability. Thus, violating a safety statute often creates a rebuttable presumption of negligence.[291] Even without a statutory prohibition, some activities are simply regarded as categorically suspect. Under the *Restatement (Third) of Torts: Liability for Physical and Emotional Harm*, *any* activity may be actionable so long as "the actor's very decision to engage in [it] create[s] an unreasonable risk of harm."[292] This could include people who drive cars with a known visual impairment or a need to take medications that induce grogginess.[293]

Negligence further embraces strict liability by making substantive and procedural adjustments that favor plaintiffs and disfavor defendants. One of the most common tactics is to coordinate reasonableness with values of harm and oppression, typically by raising the standard of care. Thus, the law routinely expects extraordinary care from people engaged in hazardous activities, like carrying a loaded weapon, handling gasoline, maintaining high voltage equipment, and keeping natural gas.[294] Other coordination patterns are inspired by our ethics of loyalty and authority. These patterns raise standards for professionals, innkeepers, common carriers, and others who must exercise extreme care not to exploit their positions of power and control.[295]

Even when negligence's substance remains stable, its procedures are continually adapting. For instance, if a plaintiff is incapable of establishing negligence, the doctrine of *res ipsa loquitur* may shift to the defendant the burden of proving her innocence.[296] The doctrines of alternative and market share liability do likewise, forcing defendants to explain causal conundrums that they themselves helped to create.[297] In medical malpractice cases, the lost chance of survival doctrine lowers proof thresholds or redefines damages to help gravely ill patients redress the wrongs of their doctors.[298] Finally, where preexisting duties do not exist, courts routinely make *ad hoc* judgments of responsibility after extensive, rational analysis. This process is facilitated by multilateral duty tests that blend first principles and core policies in an all-encompassing search for coherence.[299]

Since little permanency or consistency can be found in these doctrines and practices, some theorists have looked still deeper to find the *grundnorm* of it all.[300] While moralists ground accident law in liberty, social theorists look instead to equality, and economists cite efficiency as torts' normative

291. *See* DOBBS ET AL., *supra* note 168, at 243 (explaining the doctrine of negligence per se).
292. RESTATEMENT (THIRD) OF TORTS: PHYSICAL & EMOTIONAL HARM § 3 cmt. j (AM. LAW INST. 2010).
293. *Id.*
294. *See* Calnan, *Fault(s)*, *supra* note 214, at 740.
295. *See id.* at 739–40.
296. *See id.* at 744.
297. *See id.* at 746–47.
298. *See id.*
299. *See* CALNAN, DUTY AND INTEGRITY, *supra* note 187, at 83, 83 nn. 30, 31 (discussing and collecting such multifactor duty analyses).
300. "*Grundnorm*" is German for "fundamental form" but is used in jurisprudence to identify a core legal principle.

essence.[301] Recently, Professor Mark Geistfeld has added to this list, contending that torts is governed by the notion of reciprocity.[302]

In reality, torts juggles *all* of our inbred intuitions, and these instincts are inherently contradictory. Indeed, such juggling is *especially* emblematic of negligence law. Returning to Professor Haidt's universal moral foundations, we saw that the harm and liberty values form an autonomy ethic; the fairness, equality, reciprocity, loyalty, and authority values support a contrary community ethic; and the integrity and sanctity values constitute a more holistic and integrative ethic.[303] In Anglo-American culture, autonomy values tend to dominate. This explains why people owe no duty to aid strangers and landowners need only refrain from willfully harming trespassers.[304]

Yet no single norm completely monopolizes negligence law. Instead, like other emergent phenomena, the many founts of our genetic wisdom spring forth when necessary to address mankind's changing survival problems. For instance, the loyalty ethic finds expression in the concept of duty, which enforces fiduciary obligations of doctors, lawyers, and therapists.[305] Elsewhere in duty, the law embraces the authority norm by upholding the protective responsibilities of parties in nonreciprocal "special" relationships, like parents and children, guardians and charges, and prisons and prisoners.[306] The integrity instinct contributed to the development of strict products liability by placing extra burdens on sellers of adulterated food and drugs.[307] Lastly, the sanctity or degradation value has deep roots in emotional distress claims involving the mishandling of dead bodies.[308]

When these embedded norms conflict, torts turns to its trichotomy of cognitions to work things out. Like the human brain, the law's substantive boundaries are ingeniously if haphazardly structured for coordination, creating moral, conventional, and rational reverberations that mix and mesh until they finally achieve resonance. At each and every turn, negligence law does not stand pat but subtly transforms its identity. Though we may tout negligence as an exclusive liability *theory*, it actually is an adaptive liability *system* that keeps the law diverse, dynamic, and vibrant.

3. Strict Liability

Of course, such theoretical transmutation also works the other way around. Since strict liability is a goal rather than a normative justification, it has assumed many different forms. These range from intentional tort-like

301. *See generally* John C.P. Goldberg, *Twentieth-Century Tort Theory*, 91 GEO. L.J. 513 (2003) (surveying theories).

302. *See* Mark Geistfeld, *Hidden in Plain Sight: The Normative Source of Modern Tort Law*, 91 N.Y.U. L. REV. 1517 (2016) (arguing that reciprocity is torts' foundational norm).

303. *See* HAIDT, *supra* note 133 and accompanying text.

304. *See* Calnan, *Fault(s)*, *supra* note 214, at 710–23 (discussing the no-duty-to-aid rule); DOBBS ET AL., *supra* note 159, at 460 (discussing the limited duties owed to trespassers).

305. *See* DOBBS ET AL., *supra* note 168, at 454–57.

306. *Id.* at 620–21.

307. *See* OWEN, *supra* note 222, at 248–49.

308. *See* DOBBS ET AL., *supra* note 168, at 703–04.

prohibitive rules, to negligence-inspired social standards, to doctrines grounded in principle and public policy.[309]

Even within this eclectic system, there has been considerable cross-fertilization, especially in the area of vicarious liability and respondeat superior. Though these theories impose nondelegable duties and strict rules for inherently dangerous activities, they also employ open-ended multifactor analyses to decide issues of control and scope of employment.[310] When conflicts arise, the law does not sit still. Instead, it uses social conventions and core values to coordinate a workable solution.

These theoretical connections have enormous implications. They show that torts is more than a stagnant set of a rules and doctrines. It is an interactive collection of elastic boundary conditions for a dynamic coordination system. Yet torts' coordinative nature is not limited to its theories, defenses, and procedures. The tort system is itself an active catalyst for coordinating a dispute resolution system, a lawmaking system, and a system of sociocultural values. As we shall see next, that coordinative process is evident not only in the assembly of the law's structures, but also in the evolution of some of its most prominent concepts.

C. SYNERGIES

Conventional wisdom says torts is created from the top down, with courts developing and dispensing doctrine to control the civil justice system. But this is only true in part. Although courts stand at the law's helm, they do not act as free agents. Instead, they are restricted by torts' defining subsystems, which not only make law, but also resolve social conflicts and harmonize social values.

Because this trilateral network is interdependent, judges cannot address one system without significantly impacting the others. In fact, developments within these systems often set off jurisprudential chain reactions that move the law in unanticipated and unlikely directions. These bottom-up forces keep the judiciary in a coordinative posture—participating in all three systems yet serving as a kind of interpreter module for our jural network. The judge's job is not to design these systems in a vacuum, but to reconcile their competing impulses.[311] If values and circumstances change, courts must make the necessary calibrations, changing torts' forms to suit its ever-adapting functions.

While torts' coordinative spirit is pervasive, it is particularly conspicuous in doctrinal areas with some social volatility and longevity. The fields of pure emotional distress, premises liability, and strict products liability certainly fit this bill. They display the shifting patterns of stability and instability characteristic of feedback cycles within extended system chains. Thus, we shall use these examples to illustrate torts' overarching system of intersystem synergy.

309. *See* Calnan, *Anomalies*, *supra* note 204, at 242–56.

310. *See* DOBBS ET AL., *supra* note 168, at 756–57, 765–69 and accompanying text.

311. In describing the decision-making process of a judge, Cardozo opined that "[h]e must balance all his ingredients, his philosophy, his logic, his analogies, his history, his customs, his sense of right, and all the rest, and adding a little here and taking out a little there, must determine, as wisely as he can, which weight shall tip the scales." CARDOZO, *supra* note 185, at 162.

1. Emotional Distress

Emotional distress claims present a classic case study in multisystem coordination. In the nineteenth century, victims of fright-based injuries could not recover for their emotional distress unless it was accompanied by a contemporaneous physical impact to their bodies.[312] This conservative rule arose from a perfect storm of systemic forces.

Within torts' dispute resolution system, courts raised serious concerns about both the claimants and their claims. Such plaintiffs were viewed as hypersensitive and abnormal whiners or opportunistic malingerers who did not deserve the law's protection.[313] Even if some claims were legitimate, courts believed the litigation system was ill-equipped to handle them. The root of the problem was that purely psychic injuries could not be verified. Thus, judges feared that if such harms became actionable, the judicial system would be inundated with speculative and possibly fraudulent claims that it was ill-equipped to adjudicate or authenticate.[314]

Torts' other systems supported these views. The social systems in England and America normalized negative perceptions of fright victims. Britain's strict Victorian morality favored honesty, modesty, and emotional repression, values presumably at odds with public demands of compensation for intimate emotional injuries.[315] Meanwhile, the American ethic of rugged individualism and self-reliance fomented resentment against claims of victimization or requests for government assistance.[316] In both countries, longstanding gender biases severely limited both the social status and the political rights of women, who brought most of the early distress actions.[317] As courts and jurors heard these cases, such social values gradually infiltrated the judicial system, heightening its skepticism and reinforcing its conservatism toward nonphysical injuries.

That attitude carried through to torts' lawmaking system. Nineteenth-century judges generally subscribed to a formalist jurisprudential philosophy.[318] They held that law was a set of enduring rules that could be logically applied to solve any legal problem.[319] Because law's truths are fixed and self-contained, courts were expected to abstain from outside sources that could alter or corrupt core doctrine.[320]

This explains how judges treated torts' harm requirement. For generations, Anglo-American jurists had made physical encroachment a necessary prerequisite for most tort actions.[321] That feature was not just an historical artifact; it was one of torts' defining characteristics. A physical

312. *See* Martha Chamallas & Linda K. Kerber, *Women, Mothers, and the Law of Fright: A History,* 88 MICH. L. REV. 814, 814 (1990).
313. *Id.* at 824–25, 832–33.
314. *Id.* at 827, 832–33.
315. *Id.* at 826–27, 863.
316. *Id.* at 828–30.
317. *Id.* at 815.
318. *See* NEIL DUXBURY, PATTERNS OF AMERICAN JURISPRUDENCE 9–10 (1995).
319. *See* STEPHEN M. FELDMAN, AMERICAN LEGAL THOUGHT FROM PREMODERNISM TO POSTMODERNISM: AN INTELLECTUAL VOYAGE 93–97 (2000).
320. *See id.* at 98.
321. *See* DOBBS ET AL., *supra* note 168, at 5–6 (noting that "courts often demonstrate great caution about imposing liability for intangible harm unless the defendant has physically interfered with the plaintiff's person or property").

threat or harm cemented the moral relationship between the parties, activating the plaintiff's unique right to enforce the defendant's duty of care.[322] Thus, formalist judges had no inclination to expand the notion of physicality to include pure emotional distress. In fact, doing so could only disrupt the law's inner logic.

Eventually, this pattern of relative stability succumbed to a wave of instability. Indeed, dramatic shifts in all three tort systems led to a corresponding shift in the law. Social upheaval sowed the initial seeds of change. The brain sciences revealed the interconnection of mind and body, confirming that emotional turmoil could have demonstrable physical repercussions.[323] America's rapid obsession with psychology helped to normalize concerns about emotional wellbeing.[324] Progressivism grew from a grass-roots movement into an upstart political agenda that emboldened lawmakers to actively promote the social good.[325] This progressive attitude ultimately bolstered the women's suffrage movement, which succeeded in expanding the notion of equal rights.[326]

These social currents saturated the judicial lawmaking system as well. Beginning with Oliver Wendell Holmes' book, *The Common Law*,[327] judges began looking at law as an engine of social policy. Judicial realists rejected formalism's cloistered view in favor of what Roscoe Pound called sociological jurisprudence.[328] Under this approach, courts were permitted and even expected to consult the social sciences to better understand and resolve complex social issues.[329] Yet realism did more than change the process of judicial lawmaking. It emphasized different values. Withdrawing from the austere ethic of the nineteenth century, realism embraced the suite of community values that sanctified social solidarity.[330]

So realist judges surveyed the social landscape looking for social injustice. They saw that emotional distress injuries could be both serious and debilitating. Just as important, such claims also could be legally substantiated. If doctors could confirm broken bones, mental health experts could verify broken hearts and minds. Courts now had a ready antidote for the dispute resolution system, which supposedly lacked a tolerance for these actions. With the help of science, judges could open the door to legitimate victims without opening the floodgates of litigation.

And so they did. Jurisdictions gradually replaced the physical impact rule with any one of a number of broader tests. Most states permitted recovery if the plaintiff was physically endangered by the defendant's conduct, even though she suffered no actual physical harm.[331] Granted, many of these courts also required proof that the plaintiff experienced some

322. *See* CALNAN, DUTY AND INTEGRITY, *supra* note 187, at 70–73.
323. *See* Chamallas & Kerber, *supra* note 312, at 824–25.
324. *See Psychology in Society*, IRESEARCHNET: PSYCH., http://psychology.iresearchnet.com/history-of-psychology/early-twentieth-century/psychology-in-society/ (last visited Oct. 14, 2018).
325. *Overview of the Progressive Era,* DIGITAL HIST., http://www.digitalhistory.uh.edu/era.cfm?eraid=11 (last visited Oct. 14, 2018).
326. *See id.*
327. O.W. HOLMES, JR., THE COMMON LAW (1881).
328. *See* Roscoe Pound, *The Scope and Purpose of Sociological Jurisprudence*, 25 HARV. L. REV. 489 (1912).
329. *See* FELDMAN, *supra* note 319, at 108–14.
330. *See id.* at 108, 114.
331. *See* DOBBS ET AL., *supra* note 168, at 722–24.

physical manifestation of her emotional distress, like a heart attack, a seizure, or a miscarriage.[332] But this requirement was loosely construed. In any event, it was far from uniform. Other jurisdictions permitted recovery so long as the distress was reasonable under the circumstances.[333]

The movement toward general notions of reasonableness was guided by a subtle shift in jurisprudential perspective. Though the civil bench largely retained realist leanings, mid-twentieth century judges had begun to gravitate toward what would later be labeled legal process theory.[334] Followers of this view believed that the validity of a judicial decision depended not just on the resources used to inform it, but also and more importantly on the reasons used to justify it.[335] Such a process of reasoned elaboration might include legal rules, standards, and policies.[336] However, the most persuasive rationale relied on the law's highest principles.[337] As proto-process theorist Lon Fuller explained, such principles offer "external criteria, found in the conditions required for successful group living, that furnish some standard against which the rightness of decisions should be measured."[338]

This approach soon ushered in a new phase of emotional distress law. That phase gained prominence in 1968 with the landmark decision of *Dillon v. Legg*.[339] Authored by Justice Mathew Tobriner of the California Supreme Court, *Dillon* abandoned the physical-zone-of-danger test and adopted the general standard of reasonable foreseeability.[340] Justice Tobriner was an unapologetic judicial activist who sought to keep the law abreast of important social changes.[341] But he also was an ardent advocate of process and principles. Rejecting the "artificial abstractions"[342] and "indefensible orthodoxy"[343] of past approaches, Tobriner opted to ground recovery on the longstanding "judicial process for ascertaining liability,"[344] "general principles of tort,"[345] and the "natural justice"[346] of each claim. So long as the defendant's negligence exposed the plaintiff to a foreseeable risk of emotional harm, courts should heed the foundational precept of all conflict resolution: for every substantial wrong there should be a remedy.[347]

Of course, *Dillon* did not have the final word on the subject, even in its own state. Prompted by negative feedback, California later reverted back to

332. *See id.* at 722–23.

333. *See, e.g.,* Perodeau v. City of Hartford, 792 A.2d 752 (Conn. 2002) (allowing recovery if emotional distress would be suffered by a reasonable person); Rodrigues v. State, 472 P.2d 509 (Haw. 1970) (same); Shuamber v. Henderson, 579 N.E.2d 452 (Ind. 1991) (same); Paugh v. Hanks, 451 N.E.2d 759 (Ohio 1983) (same); Perrotti v. Gonicberg, 877 A.2d 631 (R.I. 2005) (same).

334. *See* DUXBURY, *supra* note 318, at 205, 208, 210–11.

335. *Id.* at 258–59.

336. *Id.* at 259.

337. *Id.* at 222, 225, 231, 259.

338. Lon L. Fuller, *Reason and Fiat in Case Law*, 59 HARV. L. REV., 376, 379 (1946); *see also* DUXBURY, *supra* note 318, at 223–31 (discussing Fuller's evolution as a process theorist).

339. Dillon v. Legg, 441 P.2d 912 (Cal. 1968) (en banc).

340. *Id.* at 919–21, 924–25.

341. *See* Chamallas & Kerber, *supra* note 312, at 856. Justice Tobriner refused to "chain this state to an outmoded rule of the 19th century which can claim no current credence." *Dillon,* 441 P.2d at 925.

342. *Dillon*, 441 P.2d at 925.

343. *Id.*

344. *Id*.

345. *Id.*

346. *Id.* at 914.

347. *Id.* at 919.

a rule-based approach.[348] But *Dillon* did culminate a familiar systemic cycle. As emotional distress law passed from restrictive rules to social responsibility standards to rational principles, it not only syncretized torts' three interactive systems, it completed a normative passage endemic to the human condition.

2. Premises Liability

This coordinative pattern is not unique to emotional distress cases, but repeats throughout torts' doctrinal domain. Compare premises liability law. Like the psychic injury field, premises liability began as a set of restrictive rules. The entrant classification system categorically limited the duties owed to trespassers and licensees injured on someone else's property.[349] In time, courts relaxed these rules in various circumstances, increasing the social responsibility of landowners to protect children, licensees, and trespassers from active, foreseeable, and easily preventable harm.[350] Such instability inevitably led to a period of rational reflection and coordination, causing some jurisdictions to adopt a general duty principle informed by a host of practical, social, and moral considerations.[351]

What differentiates this progression is its pattern formation process. Premises liability did not share the same intersystem dynamics that shaped emotional distress law. Instead, its system influences coalesced in a new and distinctive way. The law's original rigidity was not based on concerns about the dispute resolution system, as was true of emotional distress claims. Rather, the entrant classification system was a social construct tied to the ancient values of feudalism, which varied people's rights depending on their property status.[352] Because the feudal system predated torts' early English lawmaking system, courts relied heavily on this pervasive social scheme to establish a normative framework for landowner liability.

Things began to change as that lawmaking system matured. Besides developing new and potentially better liability concepts, courts became increasingly frustrated by the intricacies of the entrant classification model. The rules contained ambiguities that produced inconsistent results. Such inconsistencies then spawned confusion among juries, bench, and bar.[353] These flaws slowly robbed the rules of predictability, which made them appear arbitrary and unfair.[354] Facing a loss of integrity, courts felt compelled to revise the law to restore its diminishing lawfulness.

348. *See* Thing v. LaChusa, 771 P.2d 814, 829–30 (Cal. 1989) (turning the foreseeability factors of *Dillon* into required elements of proof).

349. *See* Robert S. Driscoll, Note, *The Law of Premises Liability in America: Its Past, Present, and Some Considerations for Its Future*, 82 NOTRE DAME L. REV. 881, 883–85 (2006).

350. *See* DOBBS ET AL., *supra* note 168, at 460–62, 475–78.

351. *See, e.g.*, Rowland v. Christian, 443 P.2d 561, 564 (Cal. 1968) (stating that "[a] departure from [the entrant classification system] involves the balancing of a number of considerations; the major ones are the foreseeability of harm to the plaintiff, the degree of certainty that the plaintiff suffered injury, the closeness of the connection between the defendant's conduct and the injury suffered, the moral blame attached to the defendant's conduct, the policy of preventing future harm, the extent of the burden to the defendant and consequences to the community of imposing a duty to exercise care with resulting liability for breach, and the availability, cost, and prevalence of insurance for the risk involved."). *See generally* DOBBS ET AL., *supra* note 168, at 478 n.169 (describing this movement).

352. *See* Driscoll, *supra* note 349, at 887–88.

353. *See Rowland*, 443 P.2d at 566 (noting this confusion).

354. *See id.* at 567 (denouncing the entrant system's arbitrary results).

At first, change came in the piecemeal fashion noted above, with duties being added or expanded to suit the equities of particular cases. But torts' dispute resolution system demanded more. Fortuitously, relief once again came from the sunshine state. In the watershed opinion of *Rowland v. Christian*, the California Supreme Court determined that the best way to make the law right was to right every personal wrong.[355]

To do so, the court had to go back to the basics. It began by recognizing the "fundamental principle" that "everyone is responsible for an injury caused to another by his want of ordinary care or skill in the management of his property."[356] When that responsibility is placed at issue, the law cannot be selective in its enforcement. Instead, it must remain even-handed, treating each victim with equal care and respect. As the court explained, "[a] man's life or limb does not become less worthy of protection by the law nor a loss less worthy of compensation under the law because he has come upon the land of another without permission or with permission but without a business purpose."[357]

The entrant classification system violated these tenets. By tipping the scales of justice for certain people and not others, it not only weakened torts' credibility as a neutral problem-solver, it flouted "our modern social mores and humanitarian values."[358] As in *Dillon*, the court sought to reestablish torts' moral and coordinative authority by restoring its stability. Thus, it abolished the rigid status categories and revived "ordinary principles of negligence" that could flexibly reconcile competing policy concerns according to constantly changing circumstances.[359]

This system pattern, like the one for emotional distress, was guided by judicial design, albeit with substantial assistance from a number of systemic sources. But sometimes even the best-laid plans produce unintended consequences. Indeed, system dynamics can override intentions and take on a life of their own. When this occurs, unexpected and even unwanted coordination patterns seem to erupt out of nowhere.

3. Strict Products Liability Design Cases

This is what happened to design cases in strict products liability. The law's prehistory was ordinary enough. In fact, it closely tracked the rule-standard-principle pattern mentioned above. In the nineteenth century, a product manufacturer's duty of care was narrowly limited by the privity doctrine, which protected only parties with whom the seller shared a contractual relationship.[360] Over the years, that doctrine was eroded by a number of exceptions that gradually increased the manufacturer's social responsibility to remote consumers.[361] These perfunctory approaches were finally overturned in *MacPherson v. Buick Motor Co.*,[362] where Justice

355. *Id.* at 561.
356. *Id.* at 568.
357. *Id.*
358. *Id.*
359. *Id.*
360. *See* OWEN, *supra* note 222, at 16, 18, 20–21.
361. *See id.* at 16–19, 21 (describing the exceptions, especially the duty for inherently or imminently dangerous products).
362. 111 N.E. 1050 (N.Y. 1916).

Cardozo adopted a general principle of reasonable care.[363] This duty was not restricted to only certain types of products or product makers. Instead, it encompassed "whatever the needs of life in a developing civilization" might require.[364]

Having reached a point of relative stability, products liability law began destabilizing once again, this time moving from general reasonableness back to strict rules. Except now the rules favored consumers. In negligence, courts flirted with the idea of imposing liability with little or no proof of the seller's fault.[365] Meanwhile, warranty law slowly eliminated or eviscerated the seller's privity, notice, and disclaimer defenses.[366] By 1963, the tide of protection had shifted so heavily toward consumers that the California Supreme Court officially adopted a rule of strict liability in tort.[367] This strict rule quickly became the law of the land after the *Restatement (Second) of Torts* § 402A publicly endorsed it.[368]

Ironically, the *Restatement*'s highly formalized liability scheme created utter chaos for years to come, especially in design defect cases. The *Restatement*'s intention was to ease the plaintiff's burden of proof by eliminating the messy cost-benefit analysis required by negligence. It hoped to achieve that goal by adopting a consumer expectation standard.[369] Under this test, a plaintiff could establish a design defect if the product's risks simply exceeded the expectations of ordinary consumers, thus subjecting them to unfair surprise.[370]

But the test, while consumer-focused, proved problematic to apply. Because consumer expectations often were unrealistic, hazy, or nonexistent, that standard offered juries little normative guidance.[371] What's more, such expectations tended to be clearest when the product contained a patent danger, and thus fell within the consumer's expectations.[372] So consumers regularly lost these cases. This raised a bitter irony. Rather than protecting consumers from poorly designed products, the consumer expectation standard actually helped to exculpate manufacturers who made some of the most obviously dangerous goods on the market.

The *Restatement*'s lawmaking gaffe was only exacerbated by judicial attempts to fix it. In the ensuing years, most jurisdictions replaced the consumer expectation test with some form of risk-utility analysis.[373] This analysis generally required the fact finder to compare the product's chosen design characteristics to those of a proposed alternative.[374] The actual design

363. *See* OWEN, *supra* note 222, at 22, 246–47.
364. *MacPherson,* 111 N.E. at 1053.
365. *See generally* Escola v. Coca Cola Bottling Co., 150 P.2d 436 (Cal. 1944) (allowing recovery under the res ipsa loquitur doctrine despite evidence undermining the doctrine's applicability).
366. *See* OWEN, *supra* note 222, at 252–55.
367. *See* Greenman v. Yuba Power Prods., Inc., 377 P.2d 897, 900 (Cal. 1963) ("A manufacturer is strictly liable in tort when an article he places on the market, knowing that it is to be used without inspection for defects, proves to have a defect that causes injury to a human being.").
368. RESTATEMENT (SECOND) OF TORTS § 402A (AM. LAW INST. 1965).
369. *See id.* cmts. g & i; *see also* OWEN, *supra* note 222, at 291–92 (explaining the consumer-oriented basis for the test).
370. RESTATEMENT (SECOND) OF TORTS § 402A cmts. g & i. (AM. LAW INST. 1965).
371. *See* OWEN, *supra* note 222, at 295–97.
372. *Id.* at 294.
373. *See id.* at 299.
374. *See id.* at 300–04.

was defective if the alternative could reduce the product's risks while still retaining its benefits.

Because the risk-utility analysis resembled the balancing test of negligence, judges were careful to distinguish the two. Negligence, they advised, examines the reasonableness of manufacturer's conduct, while strict liability focuses solely on the condition of the product itself.[375] This distinction was supposed to make a big difference. By explicitly removing the manufacturer's behavior from the equation, courts believed they had significantly improved consumers' chances of success.

But systems science proved them wrong. When risk-utility analysis entered the dispute resolution system, its effects were both unanticipated and counterintuitive. Juries approached the test not as lawmakers, but as spokespersons for the larger social value system. Consequently, they saw strict products liability as normatively hollow, not rigorous. In fact, according to one empirical study, mock jurors hearing a design case under the risk-utility test treated plaintiffs *less* favorably than their counterparts who heard the same case presented in the parlance of ordinary negligence.[376] Besides finding negligent defendants liable more often, these test subjects also returned higher damage awards for the victims of such wrongful conduct.[377]

There are a number of potential explanations for these results. As the researchers suggest, one account is that "jurors prefer the 'hot' language of the more intuitive negligence approach over the 'cold' and technical language of strict liability."[378] Another conclusion is that negligence's fault paradigm comes closer to capturing society's innate sense of fairness.[379] Or, maybe strict liability's esoteric terminology is simply more foreign and confusing than the common language of reasonableness.

But there is a final possibility. Because products liability, like torts in general, is a complex system, this is just how complex systems work. When the lawmaking system pulled one way, the dispute resolution and social value systems pulled back in a different direction. The final coordination pattern was not determined exclusively by the law's formal elements. Instead, it was a systemic mélange of legal, social, and ratio-moral influences. Though that dynamic arose within a strict liability framework, it escaped and even suppressed the law's limits, reverting back to the contradictory scheme of negligence.

This instability forced courts to choose a response. They could go with the flow or stem the tide. Sensing the irresistibility of this force, many jurisdictions and the *Restatement (Third) of Torts* eventually relented, eliminating strict liability in design cases and completing the cycle of fault.[380] Yet even this "law" was not a timeless truth or a sheer act of will. Instead, it

375. *See* Barker v. Lull Eng'g Co., 573 P.2d 443, 457 (1978) (stating that "in a strict liability case, as contrasted with a negligent design action, the jury's focus is properly directed to the condition of the product itself, and not to the reasonableness of the manufacturer's conduct").

376. *See* Richard L. Cupp Jr. & Danielle Polage, *The Rhetoric of Strict Products Liability Versus Negligence: An Empirical Analysis*, 77 N.Y.U. L. REV. 874, 936–37 (2002).

377. *See id.*

378. *Id.* at 937.

379. *See id.* at 939–40.

380. *See* OWEN, *supra* note 222, at 325–33.

was and is a flexible shell containing a volatile process that constantly reconciles antagonistic impulses, achieving moments of clarity and stability until new patterns emerge to take their place.

VII. ALL SYSTEMS GO

With our survey now at an end, we finally can see the full scope of the proposed hypothesis. The conception of torts as systems is, admittedly, a Grand Unified Theory. I acknowledge this truth belatedly and reluctantly because such theories typically are met with skepticism.[381] Given the multiplicity of monist accounts, that skepticism has not diminished. If anything, it appears to be spreading and deepening. Some tort scholars have even given up hope. As Professor Scott Hershovitz recently declared, the search for a Grand Unified Theory of Torts is not just plagued by the breadth of its ambition. It is essentially misguided.[382]

Yet the theory here suggests otherwise. In fact, it is the only Grand Theory that directly dissolves the grounds for incredulity. Skeptics rely on dualism for plausible deniability. They argue that the world consists of two incompatible things: natural kinds susceptible to the timeless laws of nature, and human kinds, like law, that vary with the people who create them. According to Professor Hershovitz, "The laws of physics are what they are independent of us;" "[b]ut our institutions are ours"—"[w]e can make of them what we will," "[a]nd we can will them to be better than they are."[383] Thus, "we ought not expect simple explanations for complicated and contingent institutions, like tort."[384]

But torts is not just complicated. It is complex, and its complexity connects it to everything in nature. Complex systems extend from star systems, to solar systems, to ecosystems, to biological systems, to social systems, and even to cultural systems like law. These systems share the same basic properties and dynamics. They constantly coordinate contradictory but complementary forces to facilitate system function and promote survival and flourishing. The tort system is simply part of this universal process. It is human *and* natural, complicated *and* coherent, contingent *and* permanent, all at the same time. In short, torts is a unifying subsystem within the Grand Unified System of Life.

Once this fact is recognized, *everything else* appears misguided. Systems theory leaves no room for dualism, pluralism, or skepticism. It undermines explanations that are *exclusively* economic, moral, political, *or* social, like torts' leading theories. Because systems are phenomenal, we cannot turn back to analytic philosophy and conceptual analysis to answer torts' difficult empirical questions. Instead, we must study these systems more thoroughly, using all of the diverse knowledge domains currently at our disposal. With

381. *See* Christopher J. Robinette, *Can There Be a Unified Theory of Torts? A Pluralist Suggestion From History and Doctrine*, 43 BRANDEIS L.J. 369, 371 (2005) (surveying unified theories of torts and finding them implausible and "unlikely to succeed").

382. Scott Hershovitz, *The Search For a Grand Unified Theory of Tort Law*, 130 HARV. L. REV. 942, 943 (2017).

383. *Id.* at 969.

384. *Id.* at 943.

these insights, torts stands ready for renewal. All systems, quite literally, are go.

But exactly *where* do we go from here? Obviously, the possibilities are nearly endless, so I will merely highlight a few intriguing paths for future exploration. One issue concerns the concept of reasonableness. Despite it prevalence in torts, judges and jurists cannot seem to agree on its essence. Some believe it is a rational economic formula, while others see it more as an intuitive medium of fairness, equality, justice, or respect.[385] Though both camps view reasonableness as a critical decision-making tool, neither captures the *dual process* mechanics of the human mind or the *coordination dynamics* of its normative judgments. Should tort law adapt to this more scientific rendition of reasonableness? If so, what changes should be made to its conceptualization and how should they be explained to "amateur" dispute resolvers like jurors?

This question naturally leads to others. Science shows that people possess a number of moral intuitions grounded in an array of core values. As we learned earlier, these values are embedded throughout the theories and doctrines of tort law. Should torts identify its systemic values and encourage their continual coordination? When these norms are violated, we instinctively respond with moral revulsion and condemnation. By contrast, people do not react strongly to conventional wrongs, which merely breach social rules promulgated by recognized authorities. Should torts candidly entertain the distinction between moral and conventional wrongdoing? If so, how should we describe, frame, and apply these disparate normative impulses?

Our moral instinct is especially powerful when an affront results from a direct personal encounter, as noted by Professor Mikhail's behavioral theory of battery.[386] However, if a rule violation is impersonal and indirect, it elicits little to no emotional response.[387] Here, the infraction stimulates the brain's ratiocinative system, triggering a deliberative analysis of the act's costs and benefits.[388] In a social world dominated by impersonal corporate activity, should the tort system adjust its judgment modalities to track our cognitive sensibilities or is it best to allow our fact finders to follow their natural inclinations?

These queries raise perhaps the biggest conundrum of all. The current trilogy of tort theories does a relatively good job tracking mankind's innate conception of selfish, social, and irrational wrongdoing. However, by structuring these normative parameters as immutable categories, tort *law* does a poor job capturing the incredible dynamism of the tort *system*.

Should torts abandon this static approach in favor of something more patently systemic? What about a system of presumptive and circumstantial

385. *See generally* Kenneth W. Simons, *The Hand Formula in the Draft Restatement (Third) of Torts: Encompassing Fairness as Well as Efficiency Values,* 54 VAND. L. REV. 901 (2001) (recognizing the differing interpretations and recommending a medial approach).

386. *See supra* notes 205–214 and accompanying text; *see also* GREENE, *supra* note 123, at 121–28 (noting how people confronted by the famous Trolley Problem experience an emotional reaction to directly pushing a man off a footbridge, but do not have an emotional aversion to "impersonally" flipping a switch to divert a trolley toward a man standing on the tracks).

387. *See id.*

388. *See id.*

wrongs? Though the presumptive class could include the rigid rules currently found in intentional torts, strict liability and negligence, should we openly facilitate their perpetual revision in light of our autonomy, community, and integrity norms and the competing demands of torts' three interlocking subsystems? Might these same concerns be used to coordinate *ad hoc* analyses of circumstantial torts, forming a flexible multifactor balancing test that supplements the ones already in vogue? As system coordinators, should judges and/or juries be required to explain in detail how all these interests are reconciled?

The answers to these and other questions will not come quickly or easily. For now, however, one thing is certain. No matter how hard we might try to improve the tort system, it will not operate entirely from top-down design. Instead, like all complex systems, torts will continually remake itself from the bottom up, integrating the decisions of litigants, jurors, lawyers, judges, and legal theorists to quell our persistent human conflicts. Though we cannot completely control this process, we surely can help to guide its path. At the very least, we should be careful not to muck it up with the chimeras of the past.