

FIRE AND ICE: REFRAMING EMOTION AND COGNITION IN THE LAW

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Recent advances in neuroscience have shown that cognition and emotion often work interdependently, operating as if emerging from a single faucet. This means that the stereotypes of a divided “ice cold cognition” and “hot fire emotion” are overly simplistic and inaccurate. The outdated but influential Langdellian¹ approach to law, lawyering, and legal education still places cognitive legal reasoning as the centerpiece. Instead, the existing conceptualization should be revised so that positive emotion is expressly accepted, used, and managed within legal systems.² Students and lawyers should be taught how to successfully feel and act like lawyers, as well as to think like them.

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* Professor of Law and Senior Scholar, Elon University School of Law. The author wishes to thank Lisa Watson, law librarian, for her highly valuable and consistent contributions to the research of this Article.

1. Christopher Columbus Langdell’s *CASES ON CONTRACTS* was “the first teaching casebook in law or any other field.” Bruce A. Kimball, *Langdell on Contracts and Legal Reasoning: Correcting the Holmesian Caricature*, 25 *LAW & HIST. REV.* 345, 348 (2007).

2. The revision should recognize and accommodate the disruptions to law, lawyering, and legal education.

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I. INTRODUCTION

This Article reimagines the longstanding separation of cognition and emotion in the law. In doing so, the Article suggests replacing the profession’s traditional conceptualization with a modern understanding derived from recent advances in neuroscience—that cognition and emotion often operate interdependently, as if from a single faucet.

Cognitive legal reasoning has been the center of gravity of law, lawyering, and the legal profession for more than a century. Throughout these years, the law has been framed as a cognitive enterprise dominated by a cold, hard rationality. Whether it featured objective analysis, advocacy, or judicial opinions, the legal domain remained entirely within the sphere of cognition. Emotion was considered hot, unpredictable, and weak,³ especially in comparison with the cool consistency and precision of reason. In fact, emotion was viewed as an intruder into legal analysis when it did intersect with law. One goal was to cordon off emotive thought so it would not contaminate “thinking like a lawyer.”⁴ Common legal vocabulary supported this separation. In contracts law, for example, an agreement was characterized as a “meeting of the minds,” not assent through emotion.⁵

This dichotomous view of reasoning and affect led to systemic efforts to uncouple cognition and emotion in the legal domain. In law school, courses were bounded by reason. Legal analysis was considered to be a special type of *logos*, or logic, that did not incorporate emotion.⁶ Lawyers were supposed to argue with a detached and objective filter about matters such as parental rights, the death penalty, and bankruptcy, and law students were “cold-called” to do the same.

3. See, e.g., Roger C. Cramton, *The Ordinary Religion of the Law School Classroom*, 29 J. LEGAL EDUC. 247, 250–51 (1978) (discussing the intellectual framework of the law and legal profession in the United States).

4. When Christopher Columbus Langdell compiled the first casebook on contracts law in 1871, it became easy to create a grand university tradition where students learned to “think like a lawyer”—a phrase that remains firmly embedded in the dominant lexicon even today. See, e.g., Kurt M. Saunders & Linda Levine, *Learning to Think Like a Lawyer*, 29 U.S.F. L. REV. 121, 121 (1994) (discussing what it means to “think like a lawyer”).

5. Nicholas C. Dranias, *Consideration as Contract: A Secular Natural Law of Contracts*, 12 TEX. REV. L. & POL. 267, 281–82 (2008).

6. See, e.g., Cramton, *supra* note 3, at 250–51 (“Emotion, imagination, sentiments of affection and trust . . . are off limits for law students and lawyers.”).

Yet, the organization of legal education and lawyering around Langdellian “cold cognition” yielded deleterious side effects. A lack of attention to emotion and affect marginalized the considerable stresses and pressures of the realm,⁷ ignored “soft” but important lawyering skills such as client communication, and diminished the use of empathic imagination to understand and persuade others.⁸ Further, considerable emotive problems, such as depression and alienation, arose during the law school-to-practice pipeline.⁹

However, recent advances in brain and learning science have disputed the disjunctive view of the two mental processes.¹⁰ These advances show that emotion and cognition are combinatory, an amalgam of multiple parts,¹¹ in itself a “multitude.”¹² The stereotypes of “cold cognition” and “hot emotion” are overly simplistic and inaccurate.

In light of the neuroscience revelations about “cognitive emotion,” this Article suggests that outdated understandings in the legal domain ought to be abandoned. In essence, the legal education pipeline should prepare people to feel and act like lawyers as well as to think like them. Specifically, legal education and lawyering ought to positively and explicitly use emotion—instead of ignoring it or using mostly fear—to cultivate balance, motivation, empathy, paying attention, long-term learning, and lawyering effectiveness. It is no wonder that so many of the twenty-six lawyering effectiveness factors advanced by law professor Marjorie M. Schultz and organizational

7. Grant H. Morris, *Teaching with Emotion: Enriching the Educational Experience of First-Year Law Students*, 47 SAN DIEGO L. REV. 465, 468 (2010).

8. Given the dominance of cognition and legal analysis, other skills were woven into legal education at the periphery, often as electives in the second or third year of school.

9. Law students became depressed during law school in significant numbers, and lawyers often dealt with their excess pressures and unhappiness with drugs, alcohol, and suicide. See, e.g., G. Andrew H. Benjamin et al., *The Role of Legal Education in Producing Psychological Distress Among Law Students and Lawyers*, 11 AM. B. FOUND. RES. J. 225, 225 (1986) (assessing empirically whether the process of legal education impairs the maintenance of emotional well-being in law students); see also Andrea M. Flynn et al., *Law School Stress: Moving from Narratives to Measurement*, 56 WASHBURN L.J. 259, 259 (2017); Patrick R. Krill et al., *The Prevalence of Substance Use and Other Mental Health Concerns Among American Attorneys*, 10 J. ADDICTION MED. 46, 46 (2016).

10. The new amalgam of pedagogy, psychology, cognitive science, and neuroscience—called educational neuroscience—reflects the different perspectives used to study the brain and advances that can no longer be ignored. Many of the advances have occurred in just the last several decades and have great instructional value for the field of law—particularly since many of the findings are counterintuitive.

11. DAVID EAGLEMAN, *INCognito: THE SECRET LIVES OF THE BRAIN* 109, 109–10 (2011) (“I propose that the brain is best understood as a team of rivals In reality, brains are made of competing subsystems.”).

12. *Id.*

psychologist Sheldon Zedeck¹³ in their seminal study are skills¹⁴ rooted in emotion and affect.¹⁵

The Article is divided into four Parts. After this Introduction, Part II initially explores the traditional uncoupling of cognition and emotion by legal domain orthodoxy, and then examines the contrary brain science supporting coupling in many circumstances. Part III shows how emotion already has been coupled with cognition in the traditional legal domain to some extent, often in disguise. Part IV explores how the disruptive new understandings of cognitive-emotive interdependence can be applied to law, lawyering, and law school to create healthier and more effective lawyers going forward.

II. BACKGROUND

A. *Langdellian Tradition—the Uncoupling of Cognition and Emotion*

“You come in [to law school] with a skull full of mush, and you leave thinking like a lawyer.”

—Professor Kingsfield¹⁶

“Pure reason corresponds to intellect or cognition, practical reason to will, action or conation, and judgment to feeling pleasure or pain, hence affection.”

—Hilgard¹⁷

The fact that the legal domain has aggressively moved to maintain a wall between cognition and emotion is not unexpected.

13. The lawyering effectiveness factors were originally published in a 2008 report by University of California at Berkeley professors Marjorie M. Shultz and Sheldon Zedeck. See Marjorie M. Shultz & Sheldon Zedeck, *Final Report: Identification, Development, and Validation of Predictors for Successful Lawyering* 26–27 (2008), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1353554. The principal investigators and authors studied several thousand graduate students from University of California Berkeley Law School and Hastings College of Law, as well as more than 4,000 lawyers. *Id.*; see also Marjorie M. Shultz & Sheldon Zedeck, *Predicting Lawyer Effectiveness: Broadening the Basis for Law School Admissions Decisions*, 36 LAW & SOC. INQUIRY 620, 620 (2011) [hereinafter *Lawyer Effectiveness*].

14. *Lawyer Effectiveness*, *supra* note 13, at 629. The umbrella areas included a variety of skills: intellectual and cognitive, research, communications, planning and organization, conflict resolution, character, working with others, business, and client relations and entrepreneurship. *Id.* at 632.

15. *Id.* at 630.

16. THE PAPER CHASE (Twentieth Century Fox 1973) (depicting professor and law student interactions during the first year of law school).

17. See, e.g., Ernest R. Hilgard, *The Trilogy of Mind: Cognition, Affection, and Conation*, 16 J. HIST. BEHAV. SCI. 107, 109 (1980) (describing Kant's classificatory scheme).

Law is a regressive system built on precedent and stare decisis.¹⁸ The profession has resisted change for more than a century. Legal education, for example, has maintained its dual university status and position as a trainer of future lawyers largely by clinging to a cognitive-oriented structure.¹⁹

The transition from an apprentice model for training lawyers to the grand tradition of the university affected not only legal education, but law and lawyering as well. The university model was predicated heavily on the notion that the training of lawyers would depend primarily on a program of cognitive thinking.²⁰ In the process, the emotive domain was diminished in both theory and practice.²¹ One well-known law school dean succinctly described this cultural ethos:

[The job of law professors is to] stress cognitive rationality along with “hard” facts and “cold” logic and “concrete” realities. Emotion, imagination, sentiments of affection and trust, a sense of wonder or awe at the inexplicable—these soft and mushy domains of the “tender minded” are off limits for law students²²

Traditional legal education can be traced back at least to the 1870s, when Harvard Law School professor and later dean Christopher Columbus Langdell²³ collected appellate case reports for contracts law in a textbook in 1871.²⁴ The heavily edited appellate case reports were designed specifically for a variety of cognitive uses.²⁵

18. Stare decisis is Latin for “stand by the thing[s] decided.” Amy Coney Barrett, *Stare Decisis and Due Process*, 74 U. COLO. L. REV. 1011, 1016 (2003). It provides for the doctrine of precedent, a core operational provision in law. *Id.*

19. See Ian Holloway & Steven I. Friedland, *The Double Life of Law Schools*, 68 CASE W. RES. L. REV. 397, 398 (2017).

20. This notion is reflected in the quote from the film *THE PAPER CHASE*, *supra* note 16.

21. Terry A. Maroney, *Law and Emotion: A Proposed Taxonomy of an Emerging Field*, 30 LAW & HUM. BEHAV. 119, 120 (2006) (“A core presumption underlying modern legality is that reason and emotion are different beasts entirely: they belong to separate spheres of human existence; the sphere of law admits only of reason; and vigilant policing is required to keep emotion from creeping in where it does not belong.”).

22. Cramton, *supra* note 3, at 250.

23. Langdell was a professor and dean at Harvard Law School who doubled the length of law school from one to two years, instituted the Socratic Method style of teaching instead of lectures, and hired full-time law professors. C. C. LANGDELL, *A SELECTION OF CASES ON THE LAW OF CONTRACTS* v–vii (1871).

24. See, e.g., *id.*; see also WILLIAM SULLIVAN ET AL., *EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW* 55–56 (2007).

25. Because a case report can be outfitted for duty so quickly and in so many contexts, it rests firmly in none of them.

The impact of the new texts, along with full-time professors and lectures, was dramatic. The collection of appellate case reports²⁶ as the primary educational source material facilitated the mass production of learning law in an academic classroom setting.²⁷ The ubiquitous learning model accommodated large numbers of students in diverse locations, all directed to cognitive critical thinking and analysis.²⁸ The appellate case report context was many steps removed from the prior individualized apprenticeship approach that was more holistic but less suited to the university model.²⁹

Langdellian orthodoxy viewed law as a science, essentially a calculus of objective formulae developed through *stare decisis*.³⁰ As Professor Langdell himself noted in the Preface to his contracts book:

Law, considered as a science, consists of certain principles or doctrines. To have such a mastery of these [doctrines] as to be able to apply them with constant facility and certainty to the ever-tangled skein of human affairs . . . [T]he shortest and best, if not the only way of mastering the doctrine effectually is by studying the cases in which it is embodied.³¹

The cognitive “thinking like a lawyer”³² emphasis provided legal education with legitimacy on several levels. It separated law from politics—permitting academic study in a domain distinct from political science—and allowed legal analysis to be distinguished from ordinary “common sense.”

The tool commonly used to teach “thinking like a lawyer” was the Socratic Method,³³ a technique loosely based on Socrates’ dialogical

26. The edited appellate case report is even more sanitized, with issues and analysis being committed to the authors’ discretion. This only obscures the opinion’s connection to reality and creates more of a sound bite than a full commentary. First, students are handed the advocacy positions, especially if there is a concurrence and a dissent. These positions often are a far cry from the trial arguments or the arguments of a particular counsel in the case.

27. See Gerald P. López, *Transform – Don’t Just Tinker With – Legal Education (Part II)*, 24 *CLINICAL L. REV.* 247, 365–66 (2018).

28. A. Benjamin Spencer, *The Law School Critique in Historical Perspective*, 69 *WASH. & LEE L. REV.* 1949, 1977 (2012).

29. *Id.* at 1963.

30. *Stare decisis* is a legal principle that holds that prior similar decisions are authoritative. *Id.* at 1977.

31. LANGDELL, *supra* note 23, at viii.

32. “[T]he deep structure of the pedagogy is that ‘thinking like a lawyer’ is about processes of analytic reasoning and the grasp of legal ‘doctrine’ and principles rather than learning a system of statutory or ‘black letter’ law.” SULLIVAN ET AL., *supra* note 24, at 24. A survey of law schools showed the Socratic dialogue to be the predominant teaching methodology used in law school classes, used in ninety-seven percent of first-year courses and ninety-three percent of upper-class courses. *Id.* at 27; see also Anne-Marie Slaughter, *On Thinking Like a Lawyer*, *HARV. L. TODAY* (May 2002), <https://www.princeton.edu/~slaughttr/Commentary/On%20Thinking%20Like%20a%20Lawyer.pdf>.

33. See, e.g., Morris, *supra* note 7, at 467.

analysis.³⁴ The use of Socratic questioning further promoted the basic skill of cognitive analysis.³⁵ From the very first day of law school, students became acquainted with the habitual and purported logic of appellate cases—but not the interpersonal skills so important to lawyering.³⁶

Instead, training methods that overtly considered affective skills³⁷ were offered in a meaningful way only in the later stages of law school and then usually in an elective form.³⁸ Experiential learning,³⁹ for example, overtly involving both cognitive and emotive skills, was mostly cabined in certain upper-level courses, such as externships, clinics, trial advocacy, and drafting classes.⁴⁰ Further, practical experience was generally optional for students,⁴¹ who could choose to receive all of their training in the practice of law after they graduated from law school.

The abstraction of cognitive analysis disconnected students from the local realities of both learner and lawyer. It distanced many important emotive contexts, such as unconscious bias, professionalism, mistaken eyewitness testimony, lawyering stress, and the central role of values in lawyering.

34. See, e.g., *Christopher Columbus Langdell*, ENCYCLOPEDIA.COM, <https://www.encyclopedia.com/people/social-sciences-and-law/law-biographies/christopher-columbus-langdell> (last visited Oct. 29, 2019).

35. *Id.*

36. These skills include interviewing, counseling, and negotiation, as well as managing and working with other people.

37. Affective skills were often those involving interpersonal relationships, such as client interviewing, counseling, or negotiation.

38. Most core first-year curricula and second-year required courses evolved to include bar exam-tested subjects. The affective topics—such as interviewing and counseling—were not on the bar exam and generally included as upper-level electives.

39. In 1984, Dr. David Kolb posited an experiential learning cycle in four stages: (1) Concrete Experience; (2) Reflective Observation; (3) Abstract Conceptualization; and (4) Active Experimentation. Saul McLeod, *Kolb's Learning Styles and Experiential Learning Cycle*, SIMPLYPSYCHOLOGY (Oct. 25, 2017), <https://www.simplypsychology.org/simplypsychology.org-Kolb-Learning-Styles.pdf>.

40. Existing experiential learning courses include: a contracts or wills drafting class; a tax, immigration or legal aid clinic; a class on interviewing, counseling, and negotiation; and the family of trial advocacy and pretrial practice courses.

41. Elon University School of Law now requires all students to engage in a residency—a trimester during which time the student works in a judicial office, a governmental entity (such as a prosecutor's or public defender's office), a nonprofit, or a private firm to gain experience and insight. See *Curriculum for students entering in 2018 and following*, ELON UNIV. SCH. LAW, <https://www.elon.edu/e/law/academics/curriculum/> (last visited Oct. 29, 2019). Northeastern University School of Law has a Cooperative Legal Education Program that also requires students to work in the real world. See *The Leader in Experiential Education*, NE. UNIV. SCH. LAW, <https://www.northeastern.edu/law/experience/index.html> (last visited Oct. 29, 2019).

Many law students and lawyers paid dearly for the lack of attention given to emotive cognition in law school and practice.⁴² The abstracted, collectivized approach to law school—creating a large learning environment revolving around cognition—hid individualized costs in feelings of doubt, inadequacy, and alienation that were omitted from the external cost-benefit calculus.⁴³ The emotional concomitants of the educational process—from being called on, to a “sink-or-swim” atmosphere, to focusing on critical thinking in a detached way—sometimes could be overwhelming and socially destructive.⁴⁴ Students were forced to learn how to deal with many emotion-infused interpersonal skills, such as collaborating with others, managing people, and acting with integrity, only upon becoming a lawyer, without much advance preparation.⁴⁵ Further, the enriching, complex, and nuanced experiential⁴⁶ contexts students might face upon graduation were mostly omitted.⁴⁷

Yet, not everyone ignored the affective realm of law in decades past. These issues were raised in various movements such as legal realism, critical legal theory, mindfulness, critical race and gender theory, restorative justice, and more.⁴⁸ State bars began to offer

42. Unless lawyers have previously developed the ability to deal with these issues, many can be expected to stumble when confronted by them. The results can be and often are harmful. As one commentator noted, for many students taught in the dominant realm, “learning to ‘think like a lawyer’ means abandoning their ideals, ethical values, and sense of self.” Gerald F. Hess, *Heads and Hearts: The Teaching and Learning Environment in Law School*, 52 J. LEGAL EDUC. 75, 78–79 (2002).

43. Also, the materials used did not promote the affective domain. In most law textbooks, cases usually have been highly edited by the authors to comport with subject matter and page limitations, not to facilitate student advancement of skills related to cognitive emotion.

44. See Morris, *supra* note 7, at 471–72.

45. Worse, students were shown “that tough-minded analysis, hard facts, and cold logic are the tools of a good lawyer, and [that lawyering] has little room for emotion, imagination, and morality.” Hess, *supra* note 42, at 78–79. At a minimum, lawyering poses a multiplicity of daily interpersonal issues—between clients and lawyers, judges and lawyers, and lawyers and lawyers—and lawyers were forced often to develop these skills once in practice.

46. Experiential contexts could be obtained through externships. Most students worked in the legal realm during their summer breaks from law school in part to gain experience within various practice areas of law. The use of appellate cases paralleled the contextual transformation created by television, which developed its own contexts for its shows, and brought the transformation to people who did not have to leave their own living rooms. See GEORGE W. S. TROW, *WITHIN THE CONTEXT OF NO CONTEXT* (1981) for a discussion of his observations in his seminal book.

47. Some law schools are moving to include experience as a salient part of their enterprise. See *supra* note 41. Washington & Lee University School of Law also requires students to do an externship in their third year of law school. *Externship Program*, WASH. & LEE UNIV. SCH. LAW, <https://law.wlu.edu/externships> (last visited Oct. 29, 2019).

48. See, e.g., L. L. Fuller, *American Legal Realism*, 82 U. PENN. L. REV. 429, 429–62 (1934) (discussing the realist movement in American legal thought); *What*

courses and information about ways to deal with lawyering stress and burnout. States began to see the wisdom of creating specialty courts, which now include juvenile, drug, veteran, and mental health courts, among others.⁴⁹ Individual professors also challenged the cognitive core. For example, Professor Roberto Unger offered a “principle of arbitrary desire”⁵⁰ that hypothesized that despite the superficial covering of rationality, most human beings were really motivated deep down by arbitrary desires such as sex, greed, and power.⁵¹

B. *The Brain, Cognition, and Emotion*

In the past several decades, research about cognitive and emotive functioning⁵² yielded increasing insights into how the brain operates.⁵³ The research runs across academic lines and includes educational theory, cognitive science, psychology, and neuroscience.⁵⁴ Educational theory looks at how people learn.⁵⁵ Cognitive science explores the processes of learning and how those work.⁵⁶ Psychology examines the activities of the conscious and unconscious mind.⁵⁷ Neuroscience⁵⁸ dives deeper into the physical components of the brain, such as the brain stem, the amygdala, and the cortex, and

is Critical Race Theory?, UCLA SCH. PUB. AFFAIRS: CRITICAL RACE STUDIES, <https://spacrs.wordpress.com/what-is-critical-race-theory/> (last visited Oct. 29, 2019) (discussing critical analysis of race and racism through a legal lens).

49. See, e.g., Erin R. Collins, *Status Courts*, 105 GEO. L.J. 1481, 1481–1528 (2017) (discussing specialized “problem solving” status court); E. Lea Johnston, *Theorizing Mental Health Courts*, 89 WASH. U. L. REV. 519, 519–79 (2012) (analyzing theoretical basis of mental health courts); *Drug and Veterans Courts*, THE WHITE HOUSE: PRESIDENT BARACK OBAMA: OFFICE OF NAT’L DRUG CONTROL POL’Y, <https://obamawhitehouse.archives.gov/ondcp/drug-and-veterans-courts> (last visited Oct. 29, 2019) (discussing juvenile drug courts and veteran treatment courts).

50. See ROBERTO MANGABEIRA UNGER, *KNOWLEDGE & POLITICS* 42 (1975), <http://www.robertounger.com/en/wp-content/uploads/2017/10/knowledge-and-politics.pdf>.

51. See *id.* at 42–46.

52. TERRY DOYLE & TODD ZAKRAJSEK, *THE NEW SCIENCE OF LEARNING: HOW TO LEARN IN HARMONY WITH YOUR BRAIN* 5–6 (2013).

53. *Id.*

54. John Geake & Paul Cooper, *Cognitive Neuroscience: Implications for Education?*, 26 WESTMINSTER STUD. EDUC. 7, 8 (2003).

55. Alice M. Thomas, *Laying the Foundation for Better Student Learning in the Twenty-First Century: Incorporating an Integrated Theory of Legal Education into Doctrinal Pedagogy*, 6 WIDENER L. SYMP. J. 49, 67–68 (2000).

56. See Michael S.C. Thomas, *Horses for Courses*, HOW THE BRAIN WORKS, http://www.howthebrainworks.science/how_the_brain_works/_for_course/ (last visited Oct. 29, 2019).

57. See *id.* Freud, for example, postulated theories about the id, ego, and superego. See generally SIGMUND FREUD, *THE EGO AND THE ID* (1923) (discussing the dynamic of the human psyche).

58. Neuroscience can be seen as an amalgam of neurology, psychology, and biology. Usha Goswami, *Neuroscience and Education*, in *THE JOSSEY-BASS READER ON THE BRAIN AND LEARNING* 33 (Jossey-Bass eds., 2008).

deciphers how up to 100 billion neurons⁵⁹ and glial cells communicate and function.⁶⁰

1. *The Brain Generally*

Based on beliefs held since ancient times, the brain produces ethos, pathos, and logos—character, emotion, and logic.⁶¹ Neuroscience studies have found that the three mental activities are not produced in isolation, separate from each other.⁶² In fact, the components work together to learn, often turning the brain into a multilayered “pattern seeking device,”⁶³ particularly the patterns of the physical world.⁶⁴

In the current digital age, it is natural to compare the brain to a computer, but that would not be accurate. There are many similarities—both can encode, store, and retrieve information, and learn. Yet, there are many dissimilarities as well. Unlike computers, the brain has several locations for storing memory depending on its type and function, and the brain has both temporary storage in a working memory and a long-term memory.⁶⁵ A computer can have

59. AFFECT AND LEGAL EDUCATION: EMOTION IN LEARNING AND TEACHING THE LAW 51 (Paul Maharg & Caroline Maughan eds., 2011); *see also* DOYLE & ZAKRAJSEK, *supra* note 52, at 6.

60. *See* Michael S.C. Thomas, *The Way the Brain Does Work and Why*, HOW THE BRAIN WORKS, http://www.howthebrainworks.science/how_the_brain_works/the_way_the_brain_does_work_and_why/ (last visited Oct. 29, 2019).

61. Arizona State University’s Communication Assessment and Learning Lab (“CALL”) described the importance of ethos, pathos, and logos as follows:

The component of Ethos provides an understanding for the importance that a speaker’s credibility or character has in establishing persuasion. The second component of Pathos deals with the ability for a speaker to emotionally connect to the audience that he or she is speaking to. Finally, the third component logos establish the argument that is being discussed and presented to the audience.

Persuasive Power: The Importance of Ethos, Pathos and Logos, COMM’N ASSESSMENT & LEARNING LAB (Oct. 8, 2013), <http://comm.lab.asu.edu/persuasive-power-the-importance-of-ethos-pathos-and-logos/#.XMjKyS-ZOSM>.

62. *See* Michael S.C. Thomas, HOW THE BRAIN WORKS, <http://howthebrainworks.science> (last visited Oct. 29, 2019).

63. DOYLE & ZAKRAJSEK, *supra* note 52, at 56 (quoting Harvard psychiatrist John Ratey from his book *A USER’S GUIDE TO THE BRAIN* (2001)).

64. A brain often prefers concrete issues over abstraction.

Its processing occurs within dedicated sensory and motor systems, configured to identify the physical state of the external world and to prepare the right actions. With its sensory and motor towers, the brain is designed to pull out patterns within patterns, and to integrate information across senses to make best guesses about the external world and generate appropriate behaviours.

Michael S.C. Thomas, *The Brain Doesn’t Like to Abstract Unless You Make It*, HOW THE BRAIN WORKS, http://www.howthebrainworks.science/how_the_brain_works/the_brain_doesnt_like_to_abstract_unless_you_make_it/ (last visited Oct. 29, 2019).

65. Sometimes the brain has different parts that work in different ways, because the jobs they have to do are so different.

identified and exclusive folders that store all kinds of information indefinitely—from the names of all acquaintances someone has met, to a history of financial transactions, small and large, to all animals, both feared and liked. A brain cannot store information indefinitely unless it has been moved to long-term memory, and even then, recall is not automatic.⁶⁶ Further, the brain and its memory are affected by stress, anxiety, disappointment, and a lack of sleep, among other stimuli,⁶⁷ while a computer, of course, is not.

In terms of physiology, a brain essentially has three basic levels—the primitive brain stem that controls the body's functions; the subcortical limbic system,⁶⁸ controlling much of a person's emotions; and the cortex, creating most mental processes, including consciousness. The prefrontal cortex is prominent in the rational thinking domain. This has been described as the reflective analytic conscious, meaning where the brain does its “slow thinking.”⁶⁹

The three levels interact so that a brain is three pounds⁷⁰ of multiple, interrelated systems. The systems often participate in a single activity.⁷¹ This means that one experience may require lots of brain components functioning in sync.⁷²

The learning process is a composite of several tasks, involving both emotion and cognition, and is far more advanced than simply creating the equivalent of a yellow sticky note deposited in memory.⁷³

Take memory. We can know facts about the world (the capital of France) and the types of things we encounter in the world (animals, vehicles), so-called semantic memory. And then we can have specific memories of what happened yesterday, or last Wednesday, so-called episodic memory. These two types of memory have very different requirements.

Thomas, *supra* note 56.

66. Lynn Nadel & Oliver Hardt, *Update on Memory Systems and Processes*, 36 NEUROPSYCHOPHARMACOLOGY 251, 251–73 (2011).

67. *Id.*

68. *How the Brain Works: It's All About Layers Part II*, HOW THE BRAIN WORKS (Apr. 1, 2019), <http://www.educationalneuroscience.org.uk/2019/04/01/how-the-brain-works-its-all-about-layers-part-2/>.

69. Neuroscientists are finding that the three layers are an oversimplification; there are many subsystems, often working together. *Id.*

70. Eric H. Chudler, *Brain Facts and Figures*, UNIV. WASH., <https://faculty.washington.edu/chudler/facts.html> (last visited Oct. 29, 2019).

71. Christopher Bergland, *Synchronized Brain Activity and Superfluidity are Symbiotic*, PSYCHOL. TODAY (Feb. 19, 2016), <https://www.psychologytoday.com/us/blog/the-athletes-way/201602/synchronized-brain-activity-and-superfluidity-are-symbiotic>.

72. *Id.*

73. “Cognitive” refers to sophisticated mental processes which, in the past, was considered separate from emotion. Luiz Pessoa, *Cognition and Emotion*, SCHOLARPEDIA, http://www.scholarpedia.org/article/Cognition_and_emotion (last visited Oct. 29, 2019). It includes memory, attention, problem solving, and cortex operation. *Id.*

The brain has multiple learning systems,⁷⁴ and a person can learn when concentrating on something in a focused mode, or letting the mind wander to a bigger picture and learning in what is called a diffuse mode.⁷⁵

For material to end up in long-term memory, “it must [first] reside for some period in working memory—that is, a student must pay attention to it.”⁷⁶ This attention “is shaped by our emotions.”⁷⁷ As noted by one commentator, “What we value focuses what we notice in our world.”⁷⁸

Yet, just because information is stored in long-term memory does not mean it can be readily retrieved like belongings in a self-storage unit or computer folder. In fact, the process of retrieval changes memories every time retrieval occurs.⁷⁹ Recall depends on retrieval practices and contextual factors,⁸⁰ such as the learner’s motivation and emotional attachment to the information.⁸¹

In the learning process, information first must be stored temporarily in working memory.⁸² To become a long-term memory, the new neuronal connections have to be activated frequently to strengthen the connection⁸³ and physically change the neurons.⁸⁴ As

74. These systems include episodic (memorizing events), conceptual (spotting patterns), conditioning (unconscious learning in the limbic system from past behavior), controlling systems, reward-based (using the dopamine neurotransmitter), procedural (for learning frequent activities), observation (modeling others), and instructions. Thomas, *supra* note 56.

75. BARBARA OAKLEY, *A MIND FOR NUMBERS: HOW TO EXCEL AT MATH AND SCIENCE* 12–14 (2014). A person can learn through focused or diffused modes. *Id.* Focus involves high concentration, and is important in problem-solving, which occurs regularly in lawyering. *Id.* Diffuse mode involves the “big-picture” and “is what happens when you relax your attention and just let your mind wander.” *Id.*

76. DANIEL T. WILLINGHAM, *WHY DON’T STUDENTS LIKE SCHOOL?: A COGNITIVE SCIENTIST ANSWERS QUESTIONS ABOUT HOW THE MIND WORKS AND WHAT IT MEANS FOR THE CLASSROOM* 63 (2009).

77. CATHY N. DAVIDSON, *NOW YOU SEE IT: HOW THE BRAIN SCIENCE OF ATTENTION WILL TRANSFORM THE WAY WE LIVE, WORK, AND LEARN* 25 (2011).

78. *Id.*

79. *See* AFFECT AND LEGAL EDUCATION: EMOTION IN LEARNING AND TEACHING THE LAW 54 (Paul Maharg & Caroline Maughan eds., 2011) [hereinafter AFFECT AND LEGAL EDUCATION].

80. In addition, whether information is chunked in a cognitive schema or part of a memorable narrative also matter given that working memory intakes a very limited number of events or items at a time. *See, e.g.*, DOYLE & ZAKRAJSEK, *supra* note 52, at 59 (citing George A. Miller, *The Magical Number Seven, Plus or Minus Two: Some Limits on our Capacity for Processing Information*, 63 PSYCHOL. REV. 81 (1956)).

81. AFFECT AND LEGAL EDUCATION, *supra* note 79, at 24.

82. DOYLE & ZAKRAJSEK, *supra* note 52, at 6–7.

83. *Id.*

84. “For the brain to learn, it needs to change the way neurons get activated by situations in the future. Mostly this is done by changing the strength of the connections between neurons; a bit by changing how ready particular neurons are to fire (their ‘resting’ activity levels).” Michael S.C. Thomas, *Learning*,

one commentator noted, “The important message for all learners is that new learning requires a considerable amount of practice and a meaningful connection to other information in order to become a more permanent part of memory.”⁸⁵ The exercise in conscious thought is very different than instinctual action: “The specialized, optimized circuitry of instinct confers all the benefits of speed and energy efficiency, but at the cost of being further away from the reach of conscious access.”⁸⁶

Significantly, while the brain is confronted by millions of bits of information each second, it can only process a limited amount of information at a time.⁸⁷ Some neuroscientists assert that only “seven, plus or minus two,” bits of information can be processed simultaneously.⁸⁸ Given this limited amount, the more the brain “chunks” information together—such as letters into a word or a concept into an acronym⁸⁹—the more it can remember.⁹⁰

The prefrontal cortex, located near a person’s temples, is particularly important to conscious thought.⁹¹ This part of the brain contains a sheet of neurons that processes information and regulates cognitive and executive functions.⁹² The functions include judgment, advocacy, prioritization, problem solving, and risk evaluation.⁹³

2. Cognition

Cognition describes a person’s sophisticated mental processes.⁹⁴ The processes include conscious thought and “thinking about

Remembering, Forgetting, HOW THE BRAIN WORKS, http://howthebrainworks.science/how_the_brain_works_/learning_remembering_forgetting/ (last visited Oct. 29, 2019).

85. DOYLE & ZAKRAJSEK, *supra* note 52, at 7.

86. EAGLEMAN, *supra* note 11, at 88.

87. DOYLE & ZAKRAJSEK, *supra* note 52, at 5–6.

88. *Id.* at 59 (citing Miller, *supra* note 80).

89. One acronym for the elements of Adverse Possession in property law, for example, is “OCEAAN for 20,” which means that a claim for adverse possession might lie if there is Open, Continuous, Exclusive, Adverse, Actual, and Notorious possession by the claimant for twenty years at common law. *Advanced Commercial Real Estate Law: Adverse Possession and Prescriptive Easements in Ohio and Kentucky*, FINNEY LAW FIRM (Aug. 11, 2015), <https://finneylawfirm.com/2015/08/11/advanced-commercial-real-estate-adverse-possession-and-prescriptive-easements/>.

90. OAKLEY, *supra* note 75, at 51–82.

91. *At the Front of the Brain: The Prefrontal Cortex (PFC)*, CTR. FOR EDUC. NEUROSCIENCE, <http://www.educationalneuroscience.org.uk/resources/the-adolescent-brain/changes-in-the-prefrontal-cortex/> (last visited Oct. 29, 2019).

92. *Id.*

93. *Id.*

94. *See* Pessoa, *supra* note 73.

thinking.”⁹⁵ Psychology would describe such thought as an activity of the conscious mind.⁹⁶

There are two cognitive realms—external and internal.⁹⁷ Externally, cognition depicts consciousness over an object or event.⁹⁸ Internally, cognition depicts the structures in the acquisition and use of knowledge through perception, learning, memory, language, thinking, and reasoning.⁹⁹ Further, there are internal hierarchical motor and sensory systems with multiple layers.¹⁰⁰

The conscious mental process of acquiring long-term knowledge has been described by one cognitive scientist as having three properties—slow, uncertain, and effortful.¹⁰¹ The reflection and deliberation required to consciously gather, store, organize, and retrieve information is no easy task.

According to economist Daniel Kahneman, there are essentially two systems within human brains, system one and system two.¹⁰² System one comprises multiple operations of the body that are fast and sometimes automatic or semiautomatic.¹⁰³ These include fast responses to threats and external stimuli, and the bulk of the body’s internal operations.¹⁰⁴ Conscious thought is a part of system two, the conscious mind.¹⁰⁵ System two components include encoding, chunking, storing, and retrieval of information.¹⁰⁶

Only a small subset of the working memory is transferred and stored in long-term memory.¹⁰⁷ These long-term memories have different forms—episodic, which involves a recollection of personal events, and semantic, consisting of knowledge of facts concerning the

95. Patricia S. Daniels, *Your Brain: A User’s Guide*, NAT’L GEOGRAPHIC, Jan. 5, 2018, at 73. “Humans are the only known animals capable of thinking about thinking and when they do, they focus much of their attention on how the brain perceives the world and processes information to reach the state of awareness we call cognition.” *Id.*

96. Conscious thought includes the “voice” in one’s head, described by psychologists as a phonological loop. See Saul McLeod, *Working Memory*, SIMPLY PSYCHOLOGY (last visited Oct. 29, 2019), <https://www.simplypsychology.org/working%20memory.html>.

97. See Sefa Dünder & Ülkü Ayvaz, *From Cognitive to Educational Neuroscience*, 9 INT’L EDUC. STUD. 50, 50 (2016).

98. *Id.*

99. *Id.*

100. Rick A. Adams et al., *Predictions Not Commands: Active Interference in the Motor System*, 218 BRAIN STRUCTURE & FUNCTION 611, 611 (2012).

101. WILLINGHAM, *supra* note 76, at 4.

102. DANIEL KAHNEMAN, THINKING, FAST AND SLOW 20 (2011).

103. *Id.* at 21.

104. *Id.*

105. *Id.*

106. See generally THE OXFORD HANDBOOK OF MEMORY (Endel Tulving & Fergus I.M. Craik eds., 2000) (discussing the information processing framework); *Memory Processes*, THE HUMAN MEMORY, <http://www.human-memory.net/processes.html> (last visited Oct. 29, 2019) (discussing three main processes involved in human memory).

107. See AFFECT AND LEGAL EDUCATION, *supra* note 79, at 53–64.

world around us.¹⁰⁸ According to Ebbinghaus,¹⁰⁹ the storage of information in the brain is taxed by a forgetting curve¹¹⁰—people rapidly forget what they learn. Within an hour, people forget on average fifty percent of what they learned,¹¹¹ and seventy percent in less than one day.¹¹² The retention of information under this curve depends on many factors.¹¹³

For cognition to stick, paying attention to information cannot be overemphasized.¹¹⁴ Repetitive attention breeds not only familiarity, like driving home on a daily basis, but also promotes long-term memory.¹¹⁵

But repetitive cognition alone will not ensure that information is stored long-term.¹¹⁶ Emotion, described more fully in the next Subpart, comes into play in the long-term learning process in multiple ways. For example, emotion can be incorporated in such processes as motivation, narrative, unconscious bias, and nonverbal cues.¹¹⁷ Whether the information ends up in long-term memory is situational and depends not only on the item itself but how the person thinks about the item.¹¹⁸ For example, if a person is looking at a car simply as a heavy object, the person is less likely to remember the car if the question is about modes of transportation or the types of tires a car has.¹¹⁹

108. *Id.* at 53.

109. Over a century ago, Hermann Ebbinghaus stated:

Left to itself every mental content gradually loses its capacity for being revived, or at least suffers loss in this regard under the influence of time. Facts crammed at examination time soon vanish, if they were not sufficiently grounded by other study and later subjected to a sufficient review. But even a thing so early and deeply founded as one's mother tongue is noticeably impaired if not used for several years.

HERMANN EBBINGHAUS, *MEMORY: A CONTRIBUTION TO EXPERIMENTAL PSYCHOLOGY* 4 (Henry A. Ruger & Clara E. Bussenius trans., 1913) (1885), <https://archive.org/details/memorycontri00ebbiuoft/page/n6>.

110. Art Kohn, *Brain Science: The Forgetting Curve – the Dirty Secret of Corporate Training*, *LEARNING SOLUTIONS* (Mar. 13, 2014), <https://www.learningsolutionsmag.com/articles/1379/brain-science-the-forgetting-curve-the-dirty-secret-of-corporate-training>.

111. *Id.*

112. *Id.*

113. *See id.*; *see also* Christine Blech & Robert Gaschler, *Assessing Students' Knowledge About Learning and Forgetting Curves with a Free Production Technique: Measures and Implications for the Development of Learning Aids*, 17 *PSYCHOL. LEARNING AND TEACHING* 308, 309 (2018).

114. DOYLE & ZAKRAJSEK, *supra* note 52, at 6–7.

115. WILLINGHAM, *supra* note 76, at 6.

116. *Id.* at 44–45. *See* PETER C. BROWN, HENRY L. ROEDIGER III, & MARK A. MCDANIEL, *MAKE IT STICK: THE SCIENCE OF SUCCESSFUL LEARNING* 73 (2014).

117. *See* WILLINGHAM, *supra* note 76, at 44–45 (discussing the effect of emotion on memory).

118. *Id.* at 49 (“Further, how the student thinks of the experience completely determines what will end up in long-term memory.”).

119. *Id.* at 48.

Cognition can be seen not only in brain mechanics but in other mental activities as well. For example, solving problems, driving a car, cooking, and gardening all incorporate cognition.¹²⁰

3. *Emotion*

Emotion is a mental activity often considered to be separate from cognition. Emotion generally resides in the subcortical component of the brain called the limbic system,¹²¹ which lies mostly in the second layer under the outer cortex.¹²² This system includes the hippocampus,¹²³ the amygdala,¹²⁴ the insula, the septum, and the hypothalamus.¹²⁵ Emotion can be seen as a strategic tool for the survival of the organism: “Emotions are the way that evolution has built long-term goals into the structure of the brain to give an organism the best chance of surviving and reproducing.”¹²⁶ Emotions also help create memories,¹²⁷ both temporarily and long-term.¹²⁸

Definitions of emotion differ and actually lack widespread agreement.¹²⁹ Many commentators utilize six basic emotions: happiness, sadness, disgust, fear, surprise, and anger. Others suggest that emotion cannot be delineated in such a precise

120. *See generally* PAUL HOWARD-JONES, *THE EVOLUTION OF THE LEARNING BRAIN: OR HOW YOU GOT TO BE SO SMART* (2017) (discussing the role of cognition in daily activities).

121. Michael S.C. Thomas, *Deeper Layers*, *HOW THE BRAIN WORKS*, http://howthebrainworks.science/what_the_brain_does_and_its_equipment_to_do_it/deeper_layers/ (last visited Oct. 29, 2019).

122. *Id.*

123. The hippocampus is important in the formation of new memories. It gets its name (a combination of “hippos,” horse, and “kaimpos,” sea monster) because it is shaped like a seahorse. *See, e.g.,* Michael A. Yassa, *Hippocampus*, *ENCYCLOPEDIA BRITANNICA*, <https://www.britannica.com/science/hippocampus> (last visited Oct. 29, 2019).

124. The amygdala plays an important role in the processing of emotion. *See* ROBERT M. SAPOLSKY, *BEHAVE: THE BIOLOGY OF HUMANS AS OUR BEST AND WORST* 40 (2017). The almond-shaped set of neurons is associated with both pleasure and pain. *See Amygdala*, *SCIENCE DAILY*, <https://www.sciencedaily.com/terms/amygdala.htm> (last visited Oct. 29, 2019).

125. The insula, septum, and hypothalamus are other interconnected structures in the part of the brain mostly associated with “feeling and reacting.” *See* Rand S. Swenson, *Chapter 9 – Limbic System*, *REV. CLINICAL & FUNCTIONAL NEUROSCIENCE*, https://www.dartmouth.edu/~rswenson/NeuroSci/chapter_9.html (last visited Oct. 29, 2019). They serve important functions for self and species preservation. *Id.*

126. *How the Brain Works: It’s All About Layers Part II*, *supra* note 68.

127. “[W]e remember things that bring about some emotional reaction.” WILLINGHAM, *supra* note 76, at 44.

128. Daniels, *supra* note 95, at 21–41, 96 (mapping emotion). Emotion is often traced to the right hemisphere of the brain. *Id.* at 96.

129. As some commentators note, “Affect is difficult to measure.” *AFFECT AND LEGAL EDUCATION*, *supra* note 79, at 19.

manner.¹³⁰ One of the reasons for the patent ambiguity is the wide range of activities involving emotion. Emotive activities include “fight or flight” responses, appraisals, judgments, motivations, and morals. According to some researchers, emotion is simply a higher form of cognition, not a separate form of mental activity at all.¹³¹ Further, some emotion can be traced to the cortex and not just to the limbic system.¹³² As several researchers note, “We argue that affect is not independent from cognition . . . nor is affect automatically elicited.”¹³³

Emotion impacts multiple brain activities such as conscious and unconscious cognition, perception, reasoning, and memory.¹³⁴ Emotion not only organizes but also coordinates brain activity.¹³⁵

Emotion can improve memory and learning by increasing activity in the part of the brain that creates memories.¹³⁶ For example, the “chunking” of knowledge combined with any moderate level of emotional response at the time of an event will yield better retention¹³⁷ and recall of memories.¹³⁸ Also, those people motivated to pay attention to facts, objects, or events will have stronger storage and retrieval strength of those facts, objects, or events.¹³⁹ Perceived threats can combine with emotion (“fight or flight”) for long-term storage and quick recall.¹⁴⁰ Forming a narrative around an item—such as how songs may prompt a high school memory—also promotes

130. Julie Beck, *Hard Feelings: Science’s Struggle to Define Emotions*, ATLANTIC (Feb. 24, 2015), <https://www.theatlantic.com/health/archive/2015/02/hard-feelings-sciences-struggle-to-define-emotions/385711/>.

131. See SAPOLSKY, *supra* note 124, at 54. Emotions are just a higher form of a cognitive state, also emerging from the cortex. See *Emotions are Cognitive, Not Innate, Researchers Conclude*, N.Y. UNIV. (Feb. 15, 2017), <https://www.nyu.edu/about/news-publications/news/2017/february/emotions-are-cognitive--not-innate--researchers-conclude.html>.

132. SAPOLSKY, *supra* note 124, at 61.

133. Justin Storbeck & Gerald L. Clore, *On the Interdependence of Cognition and Emotion*, 21 COGNITION & EMOTION 1212, 1212 (2007).

134. So do sleep, stress, and mood. See, e.g., Daniels, *supra* note 95, at 73.

135. *Id.* at 79, 96.

136. DOYLE & ZAKRAJSEK, *supra* note 52, at 78–79. Connecting learning to emotion makes it easier to form memories. *Id.*

137. *Id.* at 59, 78–79.

138. *Id.* at 59. “This [response] shows that the brain does better remembering emotional content than neutral content.” *Id.* at 78.

139. Randy Astazia, *Why Thinking About Paying Attention to Something Helps You Remember It*, BUS. INSIDER (Sept. 27, 2012, 1:57 PM), <https://www.businessinsider.com/paying-attention-improves-memory-2012-9> (referring to a 2012 study published in the Proceedings of the National Academy of Sciences titled, “Nucleus Basalis-Enabled Stimulus-Specific Plasticity in the Visual Vortex is Mediated by Astrocytes.” Naiyan Chen et al., *Nucleus Basalis-enabled Stimulus-specific Plasticity in the Visual Cortex is Mediated by Astrocytes*, 109 PROC. NAT’L ACAD. SCI. U.S. 16427 (2012)).

140. AFFECT AND LEGAL EDUCATION, *supra* note 79, at 62–63.

learning that lasts.¹⁴¹ Not all chunks are equal—emotionally laden chunking is more easily retained and recalled than memories without the emotion.¹⁴²

One apt illustration of the strategic nature of emotion involves what happens to a person when that person chooses a correct answer on a quiz or test. The brain actually utilizes a dopamine¹⁴³ reward system. If a correct answer is given, the brain increases the dopamine neurotransmitter it releases. If an incorrect answer is given, no dopamine increase occurs.¹⁴⁴

On the other hand, emotion does not always promote learning and memory. Instead, emotion can harm both. To illustrate, emotion is a source of bias in the reasoning process.¹⁴⁵ High stress negatively impacts cognition¹⁴⁶ and memory.¹⁴⁷ People involved in a very emotional event may have diminished or no memory of the event, and, if they do, it is likely to be less accurate than if they were detached observers.¹⁴⁸

Emotion does not help the brain remember how to perform multiple tasks at the same time, such as when a person is multitasking.¹⁴⁹ As some neuroscientists have noted, “Multitasking violates everything scientists know about memory formation.”¹⁵⁰

Emotion also can cause students sometimes to go “blank” or “freeze,” especially on examinations, despite a high level of preparation.¹⁵¹ The “freeze” is due to the stress caused by emotional reaction.¹⁵²

141. A rich context, elaborate processing, and focusing on the meaning of material all help in memory formation. *Id.* at 63.

142. DOYLE & ZAKRAJSEK, *supra* note 52, at 59.

143. The chemical neurotransmitter dopamine increases a person’s satisfaction or pleasure. *Dopamine*, PSYCHOL. TODAY, <https://www.psychologytoday.com/us/basics/dopamine> (last visited Oct. 29, 2019). As noted in Psychology Today, “Dopamine helps regulate movement, attention, learning, and emotional responses. It also enables us not only to see rewards, but to take action to move toward them. Since dopamine contributes to feelings of pleasures and satisfaction as part of the reward system, the neurotransmitter also plays a part in addiction.” *Id.*

144. See Michael S.C. Thomas, *Why Aren’t Neurons Properly Connected?*, HOW THE BRAIN WORKS, http://howthebrainworks.science/how_the_brain_works_/why_arent_neurons_properly_connected/ (last visited Oct. 29, 2019).

145. AFFECT AND LEGAL EDUCATION, *supra* note 79, at 19.

146. Usha Goswami, *Neuroscience and Education*, 74 BRITISH J. EDUC. PSYCHOL. 1, 10 (2004).

147. DOYLE & ZAKRAJSEK, *supra* note 52, at 81–82.

148. See, e.g., Sarah F. Velsor, *The Roles of Emotion Regulation and Working Memory in the Relationship Between Depressive Symptoms and False Memory for Negative Information* (May 2016) (unpublished M.A. thesis, Southern Illinois University).

149. DOYLE & ZAKRAJSEK, *supra* note 52, at 79.

150. See, e.g., *id.* (citing Foerde et al., *Modulation of Competing Memory Systems by Distraction*, 103 PNAS 11778, 11778–83 (2006)).

151. *Id.* at 81–82.

152. *Id.*

The emotional triggers occur from unconscious as well as conscious use of emotion. In one experiment, for example, people who were shown happy faces had better recall than people who were shown sad faces.¹⁵³ As one commentator noted, “[M]any people assume that their decisions are made as part of a conscious and logical process, when in fact they stem from instant deep-brain responses.”¹⁵⁴ That is because the conscious thought process is much slower than the unconscious mind.¹⁵⁵

4. “Interdependence Day”: “Emotive Cognition”

While the primary brain locations of cognition and emotion may differ, the two mental processes often intertwine in brain operations.¹⁵⁶ This means that both processes are relevant and important to a single experience.¹⁵⁷ Emotion and context help the mind weave narratives about reality to better remember cognitive knowledge. Also, context matters to learning generally—including the tools of motivation, poise, empathic imagination, and even sleep.¹⁵⁸

The following questions help to better explain how the interdependence of cognition and emotion works in general. The questions are derived from material presented by the University of London’s Centre for Educational Neuroscience.¹⁵⁹ As the questions

153. See DAVID A. SOUSA ET AL., MIND, BRAIN, & EDUCATION: NEUROSCIENCE IMPLICATIONS FOR THE CLASSROOM 53 (2010) (discussing the experiment by Pawlak et al., *Tissue Plasminogen Activator in the Amygdala is Critical for Stress-Induced Anxiety-like Behavior*, 6 NATURE NEUROSCIENCE 168, 168–74 (2003)).

154. Daniels, *supra* note 95, at 108.

155. For example, “Experiments show that the brain recognizes the social status of a person in a photo in less than 40 milliseconds (well under the threshold of conscious perception). We register race in less than 100 milliseconds and gender within 150 milliseconds.” *Id.*

156. Michael S.C. Thomas, *The Basic Design of the Brain and What Bits Do*, HOW THE BRAIN WORKS, http://howthebrainworks.science/what_the_brain_does_and_its_equipment_to_do_it/the_basic_design_of_the_brain_and_what_bits_do/ (last visited Oct. 29, 2019).

157. “Because of the very complexity of human perception, emotion is needed to assist in sorting through information and exercising judgment about life situations, legal and other. Reason and emotion are melded in human cognition; our reasoning strategies are bound up with our feelings, for better or worse.” See, e.g., Lila A. Coleburn & Julia C. Spring, *Socrates Unbound: Developmental Perspectives on the Law School Experience*, 24 LAW & PSYCHOL. REV. 5, 23 (2000).

158. As some commentators note, “It’s believed that sleep allows the brain to consolidate memories and enhance learning.” Daniels, *supra* note 95, at 84. See also Guang Yang et. al, *Sleep Promotes Branch-Specific Formation of Dendritic Spines After Learning*, 344 SCI. 1173, 1173 (2014).

159. Thomas, *supra* note 62.

will show, the conflation of the two mental processes often are counterintuitive.¹⁶⁰

a. Question #1: Sweet Dessert¹⁶¹

If people tell themselves not to eat the sweet dessert in front of them, why do they often eat it anyway?¹⁶² It is because the voice in their heads is not the ultimate decision maker. That voice, what experts call the phonological loop,¹⁶³ derives from a source near the ear and is actually just a “commentator.” The real decision maker is the prefrontal cortex, located at the front of the brain.¹⁶⁴ This illustrates that reason alone can be modified by emotion.

b. Question #2: Snakes

Snakes occupy a fair share of horror films and shudder-inducing narratives. The reason often emanates from the dangers snakes can pose to humans. So, the answer to the next question might seem obvious, but it still has an interesting narrative. Why do we forget the capital of Kentucky (Frankfort) but remember that we hate snakes, often for our entire lives?¹⁶⁵ According to the Centre for Educational Neuroscience, when people observe a snake their cognition first recognizes the object visually.¹⁶⁶ Then, their emotion tells them to start worrying, getting the heart racing to prepare for a “fight-or-flight” response.¹⁶⁷ The limbic system also communicates with the prefrontal cortex about what was seen to make sure it was real, and not just a branch that resembled a snake.¹⁶⁸

c. Question #3: Driving Home

Why do we recall how to drive home but not how to get to another location we have gone to many times as a passenger?¹⁶⁹ The answer

160. To illustrate, “these lighting reactions fuel an instinct common to many animals: the need to divide groups into ‘us vs. them.’” Daniels, *supra* note 95, at 108. It does not even matter if the groups are assigned arbitrarily. *Id.*

161. This is a variation of a question posed in an introduction to brain mechanics by the Centre for Educational Neuroscience of the University of London, England. Michael S.C. Thomas, *Puzzling*, HOW THE BRAIN WORKS, http://howthebrainworks.science/01_introduction/puzzling/ (last visited Oct. 29, 2019).

162. *Id.*

163. The phonological or articulatory loop was researched by Alan Baddeley and Graham Hitch in their study of working memory in 1974. McLeod, *supra* note 96. Baddeley and Hitch showed that working memory was not a unitary or single system but rather composed of multiple parts. *Id.*

164. Thomas, *supra* note 156.

165. *Id.*

166. *Id.*

167. *See id.*

168. *See How the Brain Works: It's All About Layers Part II*, *supra* note 68.

169. Daniel Kahneman uses the following example to show how the unconscious mind often takes incorrect short-cuts in thinking. If a person wants

is that while driving, we have to pay attention to where we are going (assuming we are not simply following a navigation system).¹⁷⁰ To what we pay attention is based on a confluence of emotion and cognition.¹⁷¹ The multiplicity of times we have paid attention to driving home has created such strong neuronal connections and long-term memories that we almost can be on “autopilot” driving home.¹⁷² This ability to engage an “autopilot” does not apply to passengers, who usually do not focus on navigation. The more we repeat an activity, the stronger the neuronal connections that develop. In fact, the example of driving home supports an old neuroscience saying, “Neurons that fire together, wire together.”¹⁷³ This essentially means that there will be stronger storage and retrieval strength for information subject to repetitive attention.¹⁷⁴

III. THE INTERDEPENDENCE OF EMOTION AND COGNITION IN LAW, LAWYERING, AND LEGAL EDUCATION

Despite the focus on cognition, emotion has infiltrated the American legal system for centuries, albeit often in disguise.¹⁷⁵ This Part looks at some of the ways emotion became a part of the American legal system.

to buy a pen and a pencil for a total of \$1.10, and the pen costs \$1 more than the pencil, how much does the pen cost? The subconscious brain takes short cuts by using patterns. KAHNEMAN, *supra* note 102, at 44.

170. In today’s digital age there are common exceptions—a person might be relying solely on a navigational system or equivalent support.

171. DOYLE & ZAKRAJSEK, *supra* note 52, at 6–7.

172. WILLINGHAM, *supra* note 76, at 47 (2009). Says Willingham, even when performing a complex task, such as driving a car home, “using memory doesn’t require much of your attention, so you are free to daydream . . .” *Id.*

173. Dave Radparvar, *Neurons that Fire Together, Wire Together*, HOLSTEE, <https://www.holstee.com/blogs/reflections/neurons-that-fire-together-wire-together> (last visited Oct. 29, 2019) (“Neurologist Donald Hebb first used this phrase in 1949 to describe how pathways in the brain are formed and reinforced through repetition.”).

174. To be more effective, the repetition should be spaced in what is called “distributed practice.” *Id.*

175. Most of the inclusion of emotion is negative. Some, as shown by Manslaughter, furthers stereotypes and unconscious bias. *See, e.g., Manslaughter*, CORNELL LAW SCH. LEGAL INFO. INST., <https://www.law.cornell.edu/wex/manslaughter> (last visited Oct. 29, 2019).

A. *Law*1. *The Reasonable Person Test*

In several doctrinal areas, such as negligence¹⁷⁶ in tort law, affirmative defenses¹⁷⁷ in criminal law, and nuisance in property law, the “reasonable person” standard is used as an important cognitive bulwark. This hypothetical—even mythical—person appears to marginalize subjectivity and emotion in legal decision-making and create a bright-line test.

Yet, using the “reasonable person” still leaves the door wide open to incorporating emotion, particularly when specific circumstances are incorporated into the test. A reasonable person jury instruction in criminal cases in California provides an apt illustration. The jury instruction reads: “A person with a physical disability is required to (know what/use the amount of care that) a reasonably careful person with the same physical disability would (know/use) in the same situation.”¹⁷⁸

This instruction remains incomplete because it still allows the jurors to use their unconscious emotive functioning to define what “reasonably careful” means within the disability context.¹⁷⁹

176. Negligence is a private cause of action for recovery from harm caused by another. See *Negligence*, CORNELL LAW SCH. LEGAL INFO. INST., <https://www.law.cornell.edu/wex/negligence> (last visited Oct. 29, 2019).

177. Affirmative defenses are those defenses based on justification or excuse that essentially admit the accused caused the act with the necessary mental state but is not morally blameworthy because of the defense. See *Affirmative Defense*, CORNELL LAW SCH. LEGAL INFO. INST., https://www.law.cornell.edu/wex/affirmative_defense (last visited Oct. 29, 2019). Affirmative defenses include self-defense, defense of others, defense of habitation, insanity, necessity, duress, and entrapment. *Id.*

178. The section added bench notes on the Instructional Duty for judges:

The court should give this instruction on request if the defendant has a physical disability and the crimes charged or lesser offenses include a reasonable person standard. This includes cases where the prosecution must prove that the defendant “reasonably should have known” a fact, and cases involving negligence.

For example, in *People v. Mathews*,, the defendant, who was blind, hearing impaired, and confined to a wheelchair, was charged with brandishing a firearm at police officers when the officers entered the defendant’s home. The issue at trial was whether the defendant “reasonably should have known” that these were officers entering his home. The court held that the trial court erred by failing to give the defense’s requested instruction that the defendant must be held to the standard of a reasonable person with the same physical disabilities, not to the standard of a reasonable person without disabilities. (internal citations omitted)

JUDICIAL COUNCIL OF CAL. CRIMINAL JURY INSTRUCTIONS § 3429 REASONABLE PERSON STANDARD FOR PHYSICALLY DISABLED PERSON.

179. *Id.*

2. *Legal Doctrines*

Some legal doctrines are embedded with emotion. Certain standards surreptitiously accommodate emotion and reason in the same rules. Other standards simply structure the displays of emotion that will be lawful. Several illustrations follow.

a. Criminal Law Doctrine

Criminal law doctrine is replete with embedded emotion. It is especially apparent when passions play a visible role. In prosecutions of well-known people, such as Lori Loughlin,¹⁸⁰ Harvey Weinstein,¹⁸¹ and Bill Cosby,¹⁸² it is clear that crimes are associated with real people whose actions are complex and cannot be explained solely by reason—just like our brains.

Even the general objectives of criminal law can be seen as lined with emotion—detering and punishing morally blameworthy behavior.¹⁸³ The concept of moral blameworthiness partly can be understood as utilitarian,¹⁸⁴ based on reason. Criminal consequences promote a safe and orderly society with notice of acceptable minimum behavior. Yet, the moral blameworthiness standard also aims to punish proportionately, publicly and consistently—notions founded on emotive fairness. The requirement of a mental state, often subjective, allows for the calibration of crimes based on culpability or wrongfulness.¹⁸⁵

Entire criminal law areas must negotiate emotional action. Perhaps the most obvious doctrinal category is provocation

180. Ms. Loughlin, an actress, was charged with several felonies in an academic fraud scandal where she allegedly paid others to assist her children's acceptance to college. Jessica Sager, *Lori Loughlin, Mossimo Giannulli Convinced They'll be Acquitted in College Scam Case: Report*, FOX NEWS (May 29, 2019), <https://www.foxnews.com/entertainment/lori-loughlin-mossimo-giannulli-college-scam-case-trial>.

181. Mr. Weinstein is a famous film producer who has been charged with sexual assault. Maria Puente, *Harvey Weinstein's Sex-Crimes Trial Delayed to January; He Pleads Not Guilty at New Arraignment*, USA TODAY (Aug. 26, 2019), <https://www.usatoday.com/story/entertainment/celebrities/2019/08/26/harvey-weinstein-arraigned-annabella-sciorra-sex-crimes-case-new-york/2087081001/>.

182. Mr. Cosby was convicted of sexually assaulting Andrea Constand. Eric Levenson & Aaron Cooper, *Bill Cosby Sentenced to 3 to 10 Years in Prison for Sexual Assault*, CNN, <https://www.cnn.com/2018/09/25/us/bill-cosby-sentence-assault/index.html> (last updated Sept. 26, 2018). Multiple other women also testified at his trial that he sexually assaulted them as well using the same modus operandi—drugging them first and then taking advantage of them. *Id.*

183. JOSHUA DRESSLER, UNDERSTANDING CRIMINAL LAW 1 (8th ed. 2018). This is a common law category that has been adopted by most jurisdictions. *Id.* It reduces an intentional killing from murder to voluntary manslaughter. *Id.*

184. The utilitarian approach to criminal law weighs the costs and benefits and also seeks to deter the offender through specific deterrence and the public as well through general deterrence.

185. DRESSLER, *supra* note 183, at 113–15 (Mens Rea).

manslaughter.¹⁸⁶ This crime, also referred to as “heat of passion” manslaughter,¹⁸⁷ reduces what otherwise likely would be intentional murder to intentional manslaughter due to mitigating circumstances. Such circumstances involve understandable—but not entirely excusable—passionate conduct,¹⁸⁸ such as a reaction to discovering a spouse having sexual relations with another person. This rule effectively contemplates emotional responses under certain circumstances.

Another significant doctrine where emotion plays a salient role in the legal calculus is self-defense. This doctrine requires multiple elements. The defendant must not be the aggressor, must react with proportional force, have an actual and reasonable belief of imminent bodily harm, and, in a minority of jurisdictions, retreat when it can be done safely.¹⁸⁹ Significantly, this entire area can be framed in the fundamental emotional paradigm of “fight or flight.” This is especially relevant when the victim did not have a weapon, and the defendant claimed to reasonably perceive one was present and about to be used.

b. Evidence Law

Evidence law seeks to ensure rational, accurate, and efficient outcomes, but still incorporates considerable emotion in its underlying geography. Emotion can be found in rules about unfair prejudice,¹⁹⁰ character evidence,¹⁹¹ and the impeachment of witnesses.¹⁹² All involve some level of subjectivity and hence emotionality. The unfair prejudice rule, for example, asks a judge to determine whether the probative value of evidence is substantially outweighed by its unfairly prejudicial impact.¹⁹³ This balancing act calls into play fairness and the judge’s view of how evidence will impact jurors.

The rule concerning the admissibility of expert testimony also intertwines cognition and emotion. Both major tests of admissibility—*Frye v. United States*¹⁹⁴ and *Daubert v. Merrell Dow*

186. *Id.* at 476–79 (Criminal Homicide). This is a common law category that has been adopted by most jurisdictions. It reduces an intentional killing from murder to voluntary manslaughter.

187. *Id.* at 501, 516. The crime is known by several terms. “Heat of passion” provides the most descriptive moniker.

188. Because the reasonable person standard is used to limit subjectively excessive responses, such as a killing in response to name-calling, it really allows the “reasonable unreasonable person” to claim occupancy of this partial defense.

189. DRESSLER, *supra* note 183, at 211–12.

190. *See* FED. R. EVID. 403.

191. *See* FED. R. EVID. 404–05.

192. *See* FED. R. EVID. 607–15.

193. *See* FED. R. EVID. 403.

194. 293 F. 1013, 1014 (D.C. Cir. 1923).

*Pharmaceuticals*¹⁹⁵—ask judges to make a decision about reliability predicated on what others believe.

c. Other Doctrinal Areas

Many other areas of law incorporate emotion systemically, particularly when framed in terms of equity.¹⁹⁶ This fairness concept stimulates the unconscious brain, where some of human emotion is generated.¹⁹⁷ Civil procedure jurisdictional issues often are framed by fairness (due process minimum contacts) as well as efficiency.¹⁹⁸ Constitutional law requires considerable interpretive analysis by judges, particularly with clauses and words that invite emotive cognition such as “equal protection of the laws”¹⁹⁹ and “due process of law.”²⁰⁰

B. *Lawyering*

1. *The Narrative of Law*

“Law is part of a distinctive manner of imagining the real.”
—Cultural anthropologist Clifford Geertz²⁰¹

As a general matter, law is built on the narrative form²⁰² of communication, a special way of telling stories that have considerable emotive resonance. The narrative serves multiple purposes, from creating and communicating the complex legal structures of a society,

195. 509 U.S. 579, 586–87 (1993).

196. Fairness indicates there is a modicum of subjectivity and emotion involved in the analysis. Fairness issues can be seen in all areas of law. Even an area as arcane and formalistic as real property law is embedded with emotion. Property law essentially navigates orderly and smooth disputes over the legal occupancy of property, which often revolves around a single word, “mine!,” when property rights are disputed by multiple claimants. While property disputes are often rooted in economics, they are just as likely to involve emotion—particularly fairness issues. Property doctrines that involve fairness include the creation of implied easements by prescription, prior use or necessity, adverse possession, which some have labeled “legalized thievery,” and the implied warranty of habitability in a landlord-tenant context.

197. See, e.g., Daniels, *supra* note 95, at 73–88.

198. According to cultural anthropologist Clifford Geertz, most knowledge is local. See *infra* note 201. This approach is in accord with the concept of jurisdiction, where cases ought to be tried by local courts where the action took place or where the parties reside. Having distant courts in faraway places try cases smacks of unfairness, a term laden with emotion as well as reason.

199. U.S. CONST. amend. XIV, § 1.

200. U.S. CONST. amends. V, XIV, § 1.

201. CLIFFORD GEERTZ, LOCAL KNOWLEDGE: FURTHER ESSAYS IN INTERPRETIVE ANTHROPOLOGY 14 (1983). The same can be said about law school, a proxy for lawyering and mental competency training.

202. A narrative is a form of storytelling that not only is used to persuade, but also adheres in long-term memory through its combination of cognition and emotion. See, e.g., WILLINGHAM, *supra* note 76, at 132.

to promoting the legitimacy of the structures. Significantly, the narrative combination of emotion and reason facilitates better long-term retention and ready recall of the narrative content.²⁰³

Narratives of law can advance legal doctrines²⁰⁴ and synthesize individual cases into a broader story. For example, the Incorporation Doctrine of the Fourteenth Amendment Due Process Clause was accorded two different primary narratives,²⁰⁵ that of an intent by the Framers to incorporate all of the Bill of Rights against the states and that of an intent by the Framers to incorporate only those provisions in the Bill of Rights that are fundamental to an Anglo-American scheme of ordered liberty.²⁰⁶ The latter narrative received sustaining support over time to become the accepted approach.

The levels of cognition and emotion in a narrative depend on the nature of the story. For example, *Rashomon*,²⁰⁷ a film by the Japanese director Akira Kurosawa, told a story of rape and murder from the varying perspectives of the main characters. The differences in the stories, and how they are presented, provide insight into law, eyewitness observation, trauma, and cognition.²⁰⁸ The stories are socially constructed to create a logical rendition of facts while meeting the different realities of each person.

Narratives designed to persuade others show up in many places in the legal domain. Two important areas include legal opinions and trials.

203. *Id.* at 100–02, 132.

204. A legal narrative is highly stylized, with words that have special significance in law. Words that defame another person, harming their reputation, for example, may create a cause of action in torts. Defamation also has special significance to hearsay and proof of character in evidence law and creates First Amendment issues as well. Nuisance is an action in torts, but also concerns the ways in which lawful occupants of land may be prohibited in using their own lands.

205. A third narrative existed as well, that of no incorporation of the Bill of Rights against the states. *See, e.g.,* *Duncan v. Louisiana*, 391 U.S. 145, 165–66 (1968) (Black, J., concurring).

206. *See, e.g., id.* at 148–50; *Palko v. Connecticut*, 302 U.S. 319, 322 (1937). While the Supreme Court adopted the “selective incorporation” approach, almost all of the criminal provisions of the Bill of Rights have been incorporated, and thus the “total incorporation” approach has prevailed. *See generally* *Civil Liberties and the Bill of Rights*, LUMEN, <https://courses.lumenlearning.com/boundless-politicalscience/chapter/civil-liberties-and-the-bill-of-rights/> (last visited Oct. 29, 2019) (discussing the “total incorporation” approach). In 2019, the Supreme Court found that the excessive fines clause of the Eighth Amendment was also incorporated against the states. *See* *Timbs v. Indiana*, 139 S.Ct. 682, 689 (2019).

207. *RASHOMON* (Daiei Film 1950).

208. *Id.*

a. Legal Opinions

Written legal opinions are a tradition in law,²⁰⁹ where judges provide not only their resolution of a legal dispute but the rationale for their conclusions as well. While some appellate courts do not resolve legal disputes with opinions, instead stating, “Per Curiam Affirmed” (“PCA”), that perfunctory approach is not the norm.²¹⁰ Opinions serve several purposes—they communicate to counsel, clients, and the public the outcomes of disputes and the rationales for the outcomes, they contribute to a body of law, and they have precedential value, unlike a PCA decision.²¹¹ Legal reasoning and cognition operate within the written narrative woven by the judge. Because a legal narrative is aimed at other people—it is not written in a vacuum—its success depends on the way it is read and interpreted by the reader.

b. Trials

Trials further illustrate the ubiquity of narrative in lawyering. In a sense, a trial asks the trier of fact to select a narrative, that of plaintiff or defendant (or prosecution or accused) to represent the unrevealed truth about what happened at a prior time, with the narrative leading to possible liability or criminality. Trials also underscore the importance of empathic imagination²¹²—understanding the motive and intent of others. Lawyers use empathy as a tool to recreate reality from others’ perspectives.²¹³ The trials of Bill Cosby (who sexually assaulted Andrea Constand) and George Zimmerman (who shot Trayvon Martin), to name just two well-known defendants, involved vastly different stories by prosecution and defense.

One well-known example of conflicting narratives involved a criminal who sexually assaulted an intoxicated woman at a California party on January 18, 2015.²¹⁴ The assailant took the unconscious and non-consenting victim outside the party behind a dumpster, only to

209. See, e.g., Arthur J. Jacobson, *Publishing Dissent*, 62 WASH. & LEE L. REV. 1607, 1619–20 (2005).

210. H. Michael Muniz, *Oh No: Not a Per Curiam Affirmed Decision on My Appeal*, 93 FLA. B.J. 26, 27 (2019).

211. Compare a written opinion with a PCA, which is “not even precedent in the district court that rendered the decision.” *Id.* at 30. A PCA “does not stand for any general pronouncement of principles of law that might have been urged by the parties.” *Id.*

212. Kimberlianne Podlas, *The Tales Television Tells: Understanding The Nomos Through Television*, 13 TEX. WESLEYAN L. REV. 31, 35 (2006) (“Legal discourse involves storytelling, and its courtroom, the crucible in which it is argued and decided, is a theater of narrative construction.”).

213. See, e.g., RASHOMON, *supra* note 207.

214. *Student Who Helped Stop Stanford Sexual Assault Describes What He Saw*, CBS NEWS (June 7, 2016, 6:59 AM), <https://www.cbsnews.com/news/stanford-university-sexual-assault-former-swimmer-brock-turner-witnesses/>.

be captured by people passing by.²¹⁵ The initial emphasis in the case—before it went viral—was a narrative surrounding the assailant and not the victim. The assailant, Brock Turner, was a star swimmer at Stanford—and the narrative became about the athlete from Stanford University.²¹⁶ After the defendant was convicted of three felony counts of sexual assault, the narrative still did not shift to the victim or look at the harm caused by the now-convicted felon.²¹⁷ Instead, when sentencing the perpetrator to only six months in jail for what he did, the judge observed that “[a] prison sentence would have a severe impact on him.”²¹⁸ The narrative presented in a letter by Turner’s father maintained the attention on his son. Turner’s father wrote: “His life will never be the one that he dreamed about and worked so hard to achieve That is a steep price to pay for 20 minutes of action out of his 20 plus years of life.”²¹⁹

The victim’s statement, read at sentencing, went viral. The victim described what had happened to her and explained how Turner “took away [her] worth.”²²⁰ The public narrative began to shift, showing how harmfully Turner had acted.²²¹

c. Legal Education

Traditional legal education utilizes emotion, but mostly as an unimportant by-product of the pursuit of cognitive legal analysis.²²² Many students experience significant emotion in the fear of speaking before others,²²³ the pressures of learning to deal with competition,²²⁴ and the pervasive ambiguity of law and its application to the exam

215. *Id.*

216. *Id.*

217. Claire Cohen, *Judge Who Gave Stanford Sex Attacker Brock Turner 6 Month Jail Sentence is Recalled from the Bench*, TELEGRAPH (June 6, 2018, 1:46 PM), <https://www.telegraph.co.uk/women/life/judge-gave-stanford-sex-attacker-brock-turner-6-month-jail-sentence/>.

218. *Id.*

219. *Id.*

220. Cleve R. Wootson, Jr., *The Judge in the Infamous Brock Turner Case Finally Explains His Decision – A Year Later*, WASH. POST (July 2, 2017), https://www.washingtonpost.com/news/grade-point/wp/2017/07/02/the-judge-in-the-infamous-brock-turner-case-finally-explains-his-decision-a-year-later/?noredirect=on&utm_term=.024a980bb359.

221. The narrative became a vehicle to weave together a view of reality on the one hand and allow ready recall of properly provable proof on the other hand. In the Turner case, it depended on the relationship between lawyer and judge and lawyer and trier of fact.

222. The focus of legal education on cognitive analysis does not mean that emotion does not occur at all or does not occur in significant and impactful ways. The brain’s unconscious produces emotion even when people do not consciously trigger it.

223. For many lay people, speaking in public is scarier than just about anything else they could do.

224. Competition often shows up with grades and class ranks.

process.²²⁵ The classroom experience, in particular, can become associated with “fight or flight” responses.²²⁶ The emotionality of legal education overall leads to increased, sometimes extreme,²²⁷ stress and feelings of being overwhelmed.²²⁸ Just being “on the spot” in a class can lead very bright and prepared individuals to “freeze” and not be able to effectively respond.

The higher levels of depression²²⁹ found in law students is not surprising in light of the stresses and is likely exacerbated by those faculty members holding the view that law school is intended to be a “trial by fire”²³⁰—a “boot camp” analogue where only the tough survive.²³¹

For many of those who survived law school, even when not so harshly conceived, the results still were emotionally harmful. According to several studies, a much higher percentage of law students who completed law school were depressed upon their exits than upon their entrances.²³² Those percentages speak volumes about the way emotion, particularly in the form of stress and pressure, presents itself in legal education orthodoxy.

IV. DISRUPTING LANGDELL – APPLYING NEUROSCIENCE ADVANCES TO CREATE A HEALTHIER AND MORE EFFECTIVE LEGAL PROFESSION

A “single faucet” intersection of cognition and emotion raises the potential for a wide variety of changes²³³ that could positively affect

225. See Morris, *supra* note 7, at 476–78.

226. The fear of being embarrassed or humiliated—or discovered as not smart—leads some people to avoid speaking unless asked to do so.

227. Benjamin et al., *supra* note 9, at 244.

228. *Id.* at 247.

229. *Id.* at 227–28; see also Matthew M. Dammeyer & Narina Nunez, *Anxiety and Depression Among Law Students: Current Knowledge and Future Directions*, 23 LAW & HUM. BEHAV. 55, 63–64 (1999) (discussing anxiety and depression among law students).

230. The sink-or-swim, boot camp mentality associated with traditional law school was seen as a positive aspect of the program by some people.

231. It was widely thought that during the twentieth Century, law school deans would greet new students by telling them, “look to the left of you, look to the right of you; one of the three of you will not be here at the end of the year.” See, e.g., THE PAPER CHASE, *supra* note 16.

232. Benjamin et al., *supra* note 9, at 246; see also Morris, *supra* note 7, at 470 (“In 1986, [the Benjamin study] reported that seventeen to forty percent of the 320 students and alumni studied ‘suffered significant levels of depression’ and that twenty to forty percent ‘reported other significantly elevated symptoms, including obsessive-compulsive, interpersonal sensitivity, anxiety, hostility, paranoid ideation, and psychoticism (social alienation and isolation).’ Andrew Benjamin and his colleagues found that before entering law school, these individuals tested within the normal range for such symptoms, but that within a few months after law school began, first-year law students were experiencing severe psychological disturbances—they scored two standard deviations above normal expectation.”).

233. Among the more significant modifications could be: expressly accepting, using, and managing stress, pressure, and emotion in law; using emotion to

law, lawyering and legal education.²³⁴ To this end, law students and lawyers should be taught how to feel and act as a lawyer, as well as to think like one.

A. *Law*

1. *Intentionally Manage Emotive Cognition*

Some doctrines could be changed for the better by overtly managing the interjection of emotion in cognition-based rules and regulations. Two examples will illustrate how doctrinal areas could benefit from expressly considering emotion.²³⁵

a. Modify “Heat of Passion” (Provocation) Manslaughter

Why should “heat of passion” manslaughter exist as a legitimate crime alternative and justify a reduced conviction because a person became emotionally distraught?²³⁶ On the one hand, this doctrine recognizes that a person is not acting reasonably and thus is not subject to exoneration. On the other hand, it still conflates cognition and emotion in a perplexing fashion—as if there could be “reasonably unreasonable” behavior. If managing cognitive emotion is to be expected of adults in American society—particularly their “fight or flight” response—then the minimally accepted standards of behavior should be placed along “adult” emotional lines when determining which response is appropriate. This means that the classification of provocation manslaughter should be modified. No longer should a person be excused for losing all emotional control when seeing a spouse in bed with another or escalating a battery into a situation where deadly force is entertained.²³⁷ The emotional excess ought to

promote long-term learning that lasts; and emphasizing the importance of emotive-based skills, such as empathic imagination in lawyering. More specifically, law schools and bar associations could explicitly instruct on how to manage stress and emotion, teach about the interpersonal and emotive skills, describe the role of narrative, and show how emotion plays an important role in professionalism and legal advocacy.

234. If the assumptions associated with Langdellian orthodoxy relied on an outdated uncoupling of cognition and emotion, then legal domain structures ought to be modernized in accord with brain science advances. The changes can lead to a healthier and more effective legal domain.

235. For example, model rules have been proposed by the American Law Institute and other groups in many areas. *See, e.g.*, MODEL PENAL CODE (AM. LAW INST. 1985); RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM (AM. LAW INST. 2018); RESTATEMENT (SECOND) OF CONTRACTS (AM. LAW INST. 2018).

236. Several commentators suggest that this category is gendered, emerging from antiquated property notions from a marriage, where a husband might protect against a cheating wife. *See* DRESSLER, *supra* note 183, at 508–10.

237. The issue raises questions of gender bias as well. Donna Coker, *Heat of Passion and Wife Killing: Men Who Batter/Men Who Kill*, 2 S. CAL. REV. L. & WOMEN'S STUD. 71, 97 n.116 (1992) (quoting Laura Crites, *A Judicial Guide to Understanding Wife Abuse*, 25 JUDGES' J. 5, 5, 7 (Summer 1985)).

be evaluated as beyond the realm of acceptability, not a situation where a conviction is reduced.²³⁸

b. Minimize Unconscious Bias and Emotive Excess in Self-Defense

Another area that seems to accommodate a cognitive-emotive response of “fight or flight” is located in self-defense law. In particular, the duty to retreat²³⁹ is an important safeguard against implicit biases and helps to manage people in stressful and emotional situations.

This claim can be seen in several Florida cases involving the trending approach to self-defense known as “stand your ground” laws.²⁴⁰ This self-defense configuration, now adopted in more than half of the states, allows a person to fight back instead of retreat when in one’s home, office, boat, auto, and in some cases, anywhere where a person had a legal right to be.²⁴¹ The Florida cases were notorious because unarmed victims were killed, raising the question of when emotion-laden conduct would be supported by the law.²⁴²

In perhaps the most well-known case, George Zimmerman, shot and killed an unarmed black teenager, Trayvon Martin, in February of 2012.²⁴³ Martin was lawfully visiting the neighborhood when he was killed.²⁴⁴ In 2014, Curtis Reeves shot and killed an unarmed man, Chad Oulson, in a movie theater after a dispute.²⁴⁵ Reeves had

238. The law should perhaps allow some flexibility on sentencing but not a different classification for what originally emerged as a special category allowing emotionally excessive responses.

239. This duty to retreat now exists in a minority of jurisdictions and applies when a person can retreat in complete safety.

240. Kirby Wilson, *Five Times Florida’s ‘Stand Your Ground’ Law Sparked Controversy*, TAMPA BAY TIMES (July 23, 2018), https://www.tampabay.com/news/publicsafety/crime/Five-times-Florida-s-stand-your-ground-law-sparked-controversy_170229587.

241. Ben Montgomery, *‘Stand Your Ground’ Laws Protect Those Who Go Far Beyond That Point*, TAMPA BAY TIMES (June 17, 2012), <https://www.tampabay.com/news/publicsafety/stand-your-ground-law-protects-those-who-go-far-beyond-that-point/1222930/> (discussing how one can abuse this law); see also *States That Have Stand Your Ground Laws*, FINDLAW, <https://criminal.findlaw.com/criminal-law-basics/states-that-have-stand-your-ground-laws.html> (last visited Oct. 29, 2019) (listing over twenty-five states that have adopted a version of “stand your ground” laws).

242. Wilson, *supra* note 240.

243. Karen Grigsby Bates, *A Look Back at Trayvon Martin’s Death, and the Movement It Inspired*, NPR (July 31, 2018, 7:34 AM), <https://www.npr.org/sections/codeswitch/2018/07/31/631897758/a-look-back-at-trayvon-martins-death-and-the-movement-it-inspired>.

244. See *id.*

245. Eric Glasser, *Trial of Curtis Reeves Postponed Due to Confusion About ‘Stand Your Ground’ Law*, WTSP NEWS (Aug. 24, 2018, 5:37 PM), <https://www.wtsp.com/article/news/local/pascocounty/trial-of-curtis-reeves-postponed-due-to-confusion-about-stand-your-ground-law/67-587350524>.

asked Oulson to stop texting before the film started.²⁴⁶ Words followed and Oulson threw popcorn at Reeves, who responded by taking out his gun and shooting Oulson.²⁴⁷ In 2018, Michael Drejka shot and killed Marquis McGlockton, who was unarmed.²⁴⁸ The shooting occurred after McGlockton had pushed Drejka to the ground for berating McGlockton's girlfriend.²⁴⁹ McGlockton appeared to be turning and walking away from Drejka at the time he was shot.²⁵⁰ These cases all raise a similar question: when and how should a person involved in an altercation be expected to properly manage emotions, particularly when it raises contexts of race, ethnicity, religion, or simply others who appear dissimilar?

While the movement to adopt "stand your ground"²⁵¹ self-defense laws has grown, the theory for such a trend has been rooted in cognition—that people will reasonably determine whether their lives are in danger and respond accordingly. Instead, studies show that the unconscious mind acts much more rapidly than when it engages in conscious thought. Unconscious actions often are biased against any group not part of the thinker's ("us versus them"), including very real implicit biases based on race and gender—by people who have no express understanding or recognition of those biases.²⁵²

Expecting rational behavior in an irrational, emotion-laden situation is where the law makes its first mistake. The second mistake is to exonerate a person who had a safe path for retreat but did not take it, and instead used deadly force. This sends a message that life is not to be preserved by all possible means. Instead, the emotionally-based "fight or flight" response becomes more valuable than a human life. Yet, the dueling era of Alexander Hamilton²⁵³ and

246. *Id.*

247. *Id.*

248. J.J. Burton, *New Information Released in the Michael Drejka Case*, ABC ACTION NEWS WFTS TAMPA BAY (Apr. 10, 2019, 2:48 AM), <https://www.abcactionnews.com/news/region-pinellas/new-information-released-in-the-michael-drejka-case>.

249. *Id.*

250. *Id.*; Erik Ortiz, *Man Killed in Florida 'Stand Your Ground' Shooting was Turning Away, Autopsy Indicates*, NBC NEWS (Sept. 26, 2018, 10:27 AM), <https://www.nbcnews.com/news/us-news/man-killed-florida-stand-your-ground-shooting-was-turning-away-n913241>.

251. At least half of the states now have "stand your ground" laws, which essentially overturn the duty to retreat requirement. Some states go further and require the prosecutor to rebut a presumption that a person claiming self-defense acted in fear. *See, e.g., States That Have Stand Your Ground Laws*, *supra* note 241.

252. Daniels, *supra* note 95, at 108 (discussing how quickly individuals register social status, race, and gender and the impact this has on dividing groups into "us vs. them").

253. As made current again by the play, *Hamilton*, Vice President Aaron Burr shot and killed his political rival, Alexander Hamilton, in a duel in Weehawken, NJ, in 1804. *See Burr Slays Hamilton in Duel*, HISTORY, <https://www.history.com/this-day-in-history/burr-slays-hamilton-in-duel> (last

the frontier days of the Wild West²⁵⁴ provide road maps of how not to handle emotion and dispute resolution.

B. Lawyering

Using and managing emotion as a lawyer is important to a healthy and effective profession. Some of the core revisions in lawyering practices that could lead to a more positive profession follow.²⁵⁵

1. Putting Meaning Into Lawyering as a Healing Profession

Lawyering can be reframed as a healing profession.²⁵⁶ Healing clients can occur through dispute prevention, such as advice given by business lawyers, and through dispute resolution, such as the work done by litigators and criminal attorneys. Healing for lawyers, however, has a more ambiguous path. Considerable stress and tension can result from particular cases or simply from the pace of a lawyer's day.²⁵⁷ As a recent article explained how pressures can build for lawyers, "Onerous deadlines are now being blamed for a host of problems including a spike in anxiety and depression in the legal profession."²⁵⁸ What this shows is that lawyers need better tools to more effectively deal with pace and stress. Ironically, attorneys can resolve the harmful disputes of others while simultaneously allowing the residual stress and pressure to seriously harm the lawyers themselves.

To better deal with stress, a variety of training techniques need to be offered to lawyers year-round.²⁵⁹ Techniques such as

updated June 14, 2019). Dueling was an accepted method of settling disputes in that era. *Id.*

254. *See, e.g., The Wild West*, AMERICAN HISTORAMA, <http://www.american-historama.org/1881-1913-maturation-era/wild-west.htm> (last visited Oct. 29, 2019) ("The period of the Wild West was from 1865 - 1895, a period of thirty years. The 'Old West' was famous for cowboys, native Indians, the lawmen, gunslingers, the pioneers, the prospectors, the gamblers, the scouts, the outlaws, the gangs and the gunfighters.").

255. There are many other changes that could be implemented, such as relying more expressly and centrally on the narrative form of persuasion. Law is essentially a structured way of weaving and synthesizing stories and narratives.

256. *See* Susan Daicoff, *Law as a Healing Profession: The "Comprehensive Law Movement"*, 6 PEPP. DISP. RESOL. L.J. 1, 4 (2006).

257. *See, e.g.,* Susan DeSantis, *Frenetic Pace of a Lawyer's Job Raises Concerns*, LAW.COM (Apr. 29, 2019, 10:35 AM), <https://www.law.com/2019/04/29/lawyers-experts-fear-dire-consequences-as-the-pace-of-legal-work-accelerates-292-44795/>. The article states: "More malpractice claims caused by human error. Constant stress. Fractured relationships. These are just some of the consequences that experts and lawyers fear will only get worse as the pace of legal work accelerates." *Id.*

258. *Id.*

259. For example, see *May is Health and Wellness Month for Florida Lawyers*, FLA. BAR, <https://www.floridabar.org/news/blog/may-is-health-and-wellness-month-for-florida-lawyers/> (last visited Oct. 29, 2019). This kind of issue should

mindfulness, meditation, and exercise can be added to the regular toolkit to manage the ills of the profession, especially as a preventive measure.²⁶⁰ Further, programs such as self-management classes and mentoring workshops can be used to shore up the resiliency of lawyers, especially when they are vulnerable to mental health issues or substance abuse.²⁶¹ These tools can be provided by bar associations, inns of court, individual lawyers, and even the law schools through classes, podcasts, webinars, pamphlets, and other means.

2. *Promote Lawyering Effectiveness*

Lawyer well-being and effectiveness overlap. Professors Shultz and Zedeck created a helpful schema by listing twenty-six factors of lawyering effectiveness as alternative considerations for admission to law school.²⁶² Many of the factors involve so-called “soft skills” that depend on the intertwining of emotion and cognition—communication, planning and organization, conflict resolution, and working with others, to name a few.²⁶³ Even factors listed under the subheading of “intellectual and cognitive”—including reasoning and analysis, creativity and innovation, problem solving, and practical judgment—largely incorporate emotion in their operations.²⁶⁴

The effectiveness factors rely heavily on “emotional intelligence”—using emotion coupled with cognition to achieve a better outcome.²⁶⁵ The combinatory factors include communication, client relations, collaboration, character, conflict resolution, and creativity.²⁶⁶ These factors show that deep knowledge of substantive law might be a prerequisite to lawyering success, but it is generally not sufficient.

be considered year-round, and not just featured one-twelfth of the time. It is no wonder that the lead article in the Florida Bar’s news section stated “41 percent of respondents say they have considered a different line of work.” Jim Ash, *YLD Study Tracks the Concerns of Florida’s Young Lawyers*, FLA. BAR (Apr. 30, 2019), <https://www.floridabar.org/the-florida-bar-news/yld-study-tracks-the-concerns-of-floridas-young-lawyers/>.

260. “Mindfulness is the basic human ability to be fully present, aware of where we are and what we’re doing, and not overly reactive or overwhelmed by what’s going on around us.” See *Getting Started with Mindfulness*, MINDFUL, <https://www.mindful.org/meditation/mindfulness-getting-started/> (last visited Oct. 29, 2019).

261. A leadership academy has been instituted in North Carolina by the state bar association. *NCBA Leadership Academy: Apply Now*, N.C. BAR ASS’N, <https://www.ncbar.org/news/2018-leadership-academy-apply-now/#> (last visited Oct. 29, 2019). The North Carolina program is limited to sixteen young lawyers and promotes leadership, vision, and influence. *Id.*

262. *Lawyer Effectiveness*, *supra* note 13, at 630.

263. *Id.* at 632 n.5.

264. *See id.* at 628.

265. *Id.*

266. *Id.* at 632 n.5.

Instead of letting such factors float like penumbras on the perimeter of continuing education, these factors ought to be expressly considered and featured systemically. Bar associations, for example, could have regular seminars, webinars, and even podcasts on these factors—preparing lawyers for the future of a profession that uses emotion positively. It is also helpful to utilize metacognition to expressly describe how these factors lead to effectiveness.²⁶⁷

Many of the emotive factors involve lawyering relationships—with clients, judges, legal assistants, investigators, other counsel, and the public. Relationships elicit another important skill—collaborative competency. Further, since people live within different cultures, intercultural competencies are increasingly important for lawyers, if not essential.

Bar associations and other lawyering groups have begun recognizing the significance of these effectiveness factors, creating leadership academies and other programs²⁶⁸ to directly deal with the emotional impacts of lawyering. Even so, more work needs to be done. The acceptance of trauma and emotive degradation from lawyering is still in a nascent stage and needs greater attention and structures in place for substantial advances to occur. Most continuing legal education remains focused on cognitive substantive issues and ethical constraints within the profession. There are few required “check-ups,” like people do yearly with their physicians and cars.²⁶⁹ Lawyers need to start healing and confront the emotive wear-and-tear that impacts them.

3. *Provide Tools for Prosecutorial Discretion*

“Smart People know themselves. Good people know others; wise people know themselves, others, and all that is around them.”

—*Anonymous*

Prosecutorial discretion is an important component of criminal law, playing an outsized role in prosecutorial effectiveness today. Prosecutorial discretion includes determining who to prosecute, what to charge, what plea bargain to offer, whether to accept a plea, whether to ask for lesser-included charges at trial, and what sentence to seek. While a prosecutor must first determine whether there is sufficient evidence to create a prima facie case for a jury, there is considerable ambiguity in how prosecutors ought to proceed in cases they handle.

An extremely important tool to help navigate these murky waters is empathic imagination, also known as empathy. Empathy is the

267. Other lawyering tools, such as advocacy and interviewing, counseling, and negotiation, also will benefit from the confluence of cognition and emotion.

268. See, e.g., N.C. BAR ASS'N, *supra* note 261. This program is for a small number of lawyers each year.

269. To ride effectively, a car must be in working order.

ability to first observe and then understand others' emotions and mental processes: to be able to walk in another's shoes.²⁷⁰ With empathy, a prosecutor can use discretion to better determine how to balance societal interests in retribution and deterrence, the victim's interest, and the interest of society in reconciliation and rehabilitation. With empathy, there is a better chance of yielding justice.

a. Dealing With Cases Involving Deadly Force

Empathic imagination is especially needed by prosecutors who evaluate police-resident confrontations in which deadly force was used and deadly resident-resident confrontations when there is a claim of self-defense, particularly in states that have adopted "stand your ground" laws. Obtaining consistency and transparency in the charging process when a person or persons lie dead from the hand of another creates much needed confidence in the criminal system.

b. General Strategic Tool

Lawyers in all working areas can use empathic imagination as a strategic tool. How a jury, judge, or client will react to an argument or position is significant and even essential to the strategies employed by lawyers in a wide variety of situations, such as offering preventive or post litigation advice. This is embodied in moot court or other litigation simulations.

C. *Legal Education*

*"Learning to learn is the key skill for tomorrow."*²⁷¹

The recalibration of cognition and emotion can significantly alter the legal education landscape. A "single faucet" approach means it is important that law students be taught from day one how to feel²⁷² and act as a lawyer, not only how to think like one. Expressly recognizing emotion's positive role in the educational process will encourage the creation of alternative learning environments.²⁷³ If, as the neuroscience shows, the brain is socially oriented and spends

270. *Empathy*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/empathy> (last visited Oct. 29, 2019).

271. DOYLE & ZAKRAJSEK, *supra* note 52 (appearing on the back cover).

272. "[F]eeling like lawyers requires that they consider the emotional and social consequences of decisions." See Susan Daicoff, *Lawyer, Know Thyself: A Review of Empirical Research on Attorney Attributes Bearing on Professionalism*, 46 AM. U. L. REV. 1337, 1381 (1997); see also Grant H. Morris, *Preparing Law Students for Disappointing Exam Results: Lessons from "Casey at the Bat"* 8 (June 2008), <http://docplayer.net/125485085-Preparing-law-students-for-disappointing-exam-results-lessons-from-casey-at-the-bat.html>.

273. Learning environments are all teachers can create, in effect—teachers cannot force students to learn but only can promote, encourage, and abet learning of students.

considerable time concerned about other people,²⁷⁴ greater use of collaborative methods and learning communities should be beneficial.²⁷⁵ Teachers will have the incentive to focus more on holistic responses to legal problems, recognizing the natural integration of substantive law analysis, role playing, clinical education, and writing courses.

1. *Teaching Students to Feel, Act, and Think Like a Lawyer*

a. *Creating Curricula Using Shultz and Zedeck's Twenty-Six Factors for Effective Lawyering*²⁷⁶

The effectiveness factors advanced by Shultz and Zedeck²⁷⁷ can be introduced expressly in core law school courses, and then addressed in an advanced way in the later stages of school, closer to graduation. While current curricula allow students to pursue the factors through experiential learning, simulations, and externships, those types of courses are generally optional and not central to systemic law school objectives. Instead, centralizing these factors in the core curriculum will restructure and help sequence the law school process.

A reorganization can be created efficiently. In an introductory torts class, for example, there can be a communications exercise. In a criminal law class, students can be given an exercise where they receive evidence and jury instructions, and then are asked to deliberate as jurors.²⁷⁸ In a contracts course, students can be asked to interview a "client" and then draft a contract in light of the information they were given.²⁷⁹ In an evidence course, students can

274. See Michael S.C. Thomas, *How the Brain Works: See People Are a Priority*, HOW THE BRAIN WORKS, http://howthebrainworks.science/what_the_brain_does_and_its_equipment_to_do_it/people_are_a_priority/ (last visited Oct. 29, 2019).

275. It is not unexpected, consequently, that high impact educational practices often involve relationships—between the teachers and students, students and students, and students and their own motivation.

276. *Lawyer Effectiveness*, *supra* note 13, at 630.

277. *Id.*

278. Professor Ronald Wright of Wake Forest University School of Law led such an exercise in October 2018 for the entire first year class, with professors providing written news clippings of an actual case and simulating closing arguments and jury instructions before sending students off to deliberate in small groups.

279. In essence, this exercise uses design thinking, a five-step process that allows for a critical assessment of a problem. As used by the Institute of Design at Stanford University, design thinking stages include: (1) empathy, (2) defining issues and terms, (3) ideating or brainstorming, (4) prototyping, and finally, (5) testing. See *Get Started with Design Thinking*, INST. DESIGN STAN. U., https://static1.squarespace.com/static/57c6b79629687fde090a0fdd/t/58ac891ae4fcb50f1fb2f1ab/1487702304601/Facilitator%27s+Guide_Design+Thinking.pdf (last visited Oct. 29, 2019). The contracts illustration uses empathy in the client interview and then uses that information to ideate—come up with ideas for the

be asked to participate in a mock trial where the focus is on evidentiary objections.²⁸⁰ In a family law course, students can represent a client and have a hearing before a real judge.

b. Managing Stress and Pressure

The issues of stress and pressure, along with mental health, are just beginning to gain footholds and acceptance as mainstream topics in law school. Studies show how important these topics are given their pervasiveness in society,²⁸¹ but even more so in law school.²⁸²

Since stress often diminishes successful learning,²⁸³ students ought to be shown coping techniques,²⁸⁴ from mindfulness, to meditation, to yoga, to reaching out to others, and more. Schools can offer these techniques throughout each term in law school, not just in orientation or a single session. Dealing with stress can become part of a new culture to promote healthy lawyering lifestyles, including physical and mental well-being. Well-being issues can be long-standing or situational—students who are first-generation law students, for example, and who have no role models to emulate or who might provide guidance, can have built-in uphill climbs just by attending law school. Adaptation issues can show up for anyone, but likely can impact students who feel like outsiders in one way or another—from being part of a marginalized group, to those who are new an area of the country, or to a program that has daily pressures in highly competitive environments.

contract—and prototype—draw up a contract—and then test it with the supervising attorney.

280. The author has used this technique over multiple years. Students appreciate the different perspective the trial provides, the opportunity to collaborate with classmates, and the substantive review opportunity as well.

281. The 2019 Global Emotions Report found that the United States had the fourth highest stress levels in the world, where more than half of Americans reported feeling stress often each day in 2018. Josh Hafner, *The Misery is Real: A Third of the World is Stressed, Worried and in Pain, Gallup Report Finds*, USA TODAY (Apr. 25, 2019, 3:05 PM), <https://www.usatoday.com/story/news/world/2019/04/25/gallup-emotions-report-2019-top-happiest-saddest-countries-rankings/3568251002/>. Americans were even more stressed than residents of Chad, who the study found to be the “the world’s saddest and most pain-stricken population.” *Id.*

282. For a study on depression in law school, see *Lawyers & Depression*, DAVE NEE FOUNDATION, <http://www.daveneefoundation.org/scholarship/lawyers-and-depression/> (last visited Oct. 29, 2019); see also Benjamin et al., *supra* note 9.

283. See SOUSA, *supra* note 153, at 53.

284. There are other techniques that can be advanced to manage stress. The military use a technique called EMDR—an eye movement technique that tries to manage emotional reactions, which gives greater clarity and reduces anxiety, worrying about events that have not happened, depression, and worrying about the past. See *What is EMDR?*, EMDR INST., INC., <https://www.emdr.com/what-is-emdr/> (last visited Oct. 29, 2019).

c. Maintaining Balance in Hierarchies

Another perspective on the issue of brain contextualization involves the replication of hierarchies within the legal profession. Several decades ago, law professor Duncan Kennedy wrote a book on how legal education produces hierarchies.²⁸⁵ While many things have changed since Kennedy first proposed this concept in the 1970s, from cell phones to the Internet, the pernicious reproduction of hierarchies in law school still exists. School “rank,” class rank, membership in certain organizations, or summer jobs all hold considerable power—especially in how people identify themselves at school.

Significantly, recent studies have shown that people who compare down—and not up—are happier.²⁸⁶ This notion applies to bronze over silver medalists²⁸⁷ and should be broadly used by law students as well. While the concept of balance can be cultural and normative, it still offers a better way to manage negative emotions about a person’s perceived performance in school.

d. Minimizing “Blanking”

Stress and pressure are regularly caused by various aspects of legal education, from classroom performance to quizzes and exams. While students have taken numerous tests throughout their lives, the high stakes of law school exams in particular often present an entirely different situation—one in which students are ill-equipped to step in and perform capably under the time pressure. Consequently, it is no wonder that students can easily freeze or misuse time from pressure. Students can be shown expressly how to deal with this kind of stress through mock exams, reviews that include organization and troubleshooting situations that might arise, spotting and prioritizing issues, and explicit methods for dealing with time pressure. These methods parallel those used with student drivers, who receive considerable feedback and assistance before driving on their own.

2. *Using Positive Emotion to Promote Self-directed, Long-term Learning*

How can teachers use emotion positively to assist the learning process? There are many options.

285. DUNCAN KENNEDY, *LEGAL EDUCATION AND THE REPRODUCTION OF HIERARCHY: A POLEMIC AGAINST THE SYSTEM* (2004).

286. See, e.g., Ana Swanson, *Why Bronze Medalists Are Happier than Silver Medalists, and Other Things the Olympics Teaches About Human Emotions*, WASH. POST (Aug. 12, 2016), https://www.washingtonpost.com/news/wonk/wp/2016/08/12/why-bronze-medalists-are-happier-than-silver-medalists-and-other-things-the-olympics-teaches-us-about-human-emotion/?noredirect=on&utm_term=.6cb351d1b0be; see also NANCY LEVITT & DOUGLAS O. LINDER, *THE HAPPY LAWYER: MAKING A GOOD LIFE IN THE LAW* 87 (2010).

287. See, e.g., Swanson, *supra* note 286.

a. Model Expert Learners

Studies of chess experts²⁸⁸ have shown that expert self-directed learners spot patterns, have deep, chunked long-term knowledge,²⁸⁹ regularly self-assess, and have a ready recall of information.²⁹⁰ Students could be instructed on these four salient qualities of expert learners to encourage the creation of better self-directed learning.

b. Promoting Good Practices

Brain science shows that not all practices are effective or preferred if the goal is learning that lasts. Distributed practice (spacing repetition over time in small chunks rather than massing practice in one sitting), quizzing (self-assessing), and interleaving (including more than one issue at a time when preparing) are three of the better preparation practices. Teachers can utilize these retrieval methods to assist students for long-term recall.²⁹¹ Specifically, teachers can include distributed practice by referring back and connecting up earlier parts of a course to bridge to the subject matter at hand. The act of bridging creates deeper learning.²⁹² Further, a teacher can provide students with interleaved problems tying together several areas of the course that have been covered to date.²⁹³

Some of what works is surprising. Researchers Robert and Elizabeth Bjork showed that grappling with “desirable difficulties,” meaning complex and challenging material, is more beneficial to long-term learning than reviewing easy material.²⁹⁴ This message is an important one for students—it is better to regularly practice by challenging themselves, such as writing out an essay answer under time pressure or doing problems that are advanced, rather than just

288. DOYLE & ZAKRAJSEK, *supra* note 52, at 82, 87–88.

289. *Id.* at 57, 85. Deep chunked knowledge means the information is stored in a set, like fork, knife, and spoon, and recalled as such. Chess masters have deep chunked knowledge about a series of moves, rather than single moves independent of each other.

290. *Id.*

291. *See id.* at 115–16 (discussing DANIEL L. SCHACTER, *THE SEVEN SINS OF MEMORY: HOW THE MIND FORGETS AND REMEMBERS* (2001)).

292. “The human brain is constantly looking for connections. Connections help you to use prior knowledge to build bridges to new material, creating a more meaningful understanding of the new material.” *Id.* at 11.

293. “When you do not practice the information enough over an extended period (distributed practice), your brain has no reason to make long-term memories for the information. There is no substitute for practice.” *Id.* at 116.

294. *See* Elizabeth Ligon Bjork & Robert A. Bjork, *Making Things Hard on Yourself, But in a Good Way: Creating Desirable Difficulties to Enhance Learning*, in *PSYCHOLOGY AND THE REAL WORLD: ESSAYS ILLUSTRATING FUNDAMENTAL CONTRIBUTIONS TO SOCIETY* 55, 58–63 (Morton Ann Gernsbacher & James R. Pomerantz eds., 2d ed. 2014); *see also* *Applying Cognitive Psychology to Enhance Educational Practice*, UCLA: BJORK LEARNING AND FORGETTING LAB, <https://bjorklab.psych.ucla.edu/research/> (last visited Oct. 29, 2019).

reviewing easy material until they “completely understand” a subject area.²⁹⁵ Challenging material might include interleaved subject matter (multiple topics) and variable practice.²⁹⁶ This notion runs counter to the inclination to think fast and less.²⁹⁷

Compare these practices with weaker learning approaches, such as cramming,²⁹⁸ where long-term learning does not occur, highlighting, rereading, and listening to lectures a second time. The result is that it may be necessary for students to reevaluate their unconsciously formed practices.

c. Teaching to Engage—Helping Students Pay Attention

Paying attention is generally the first step in the learning process—and especially important to long-term learning and recall. In a world where people are connected constantly to the Internet and multitasking is the norm, commanding attention can be a challenge. Thus, navigating how, why, and how long people pay attention necessarily includes considerations of context and a person’s emotional state.

Students may not pay attention in class for a number of reasons. First, students are generally topic novices and may not be as interested in the subject matter as the professor. Second, students might have narrow goals for a class, such as simply taking notes for later digestion.²⁹⁹ Third, students face many tempting distractions, from computers, to cell phones, to other students, and to their own daydreams.

What can a professor do to counter short attention spans? One answer is to use student emotion to provide an active learning environment. This means stocking class sessions with opportunities for students to invest in the classes, claiming some emotive “ownership” to discuss, write, and present to others. The teacher can encourage students to participate in exercises revolving around narratives—hypos, stories, or issues that will resonate when recalled

295. Students learn best with challenging material to an appropriate degree. Thus, exceedingly difficult material may be as unhelpful as exceedingly easy material.

296. *Weekly Digest #68: Desirable Difficulties*, LEARNING SCIENTISTS (July 16, 2017), <http://www.learningscientists.org/blog/2017/7/16/weekly-digest-68>.

297. *See id.*

298. “[C]ramming . . . typically does not allow the brain to build the strong connection to the new material necessary to establish more permanent memories. So, cramming does not usually result in real learning.” DOYLE & ZAKRAJSEK, *supra* note 52, at 10.

299. Students often cram in a massed study session for a final exam, a technique used by most students at one time or another. This approach, however, is poor with regard to long-term learning that lasts. Students often lose the information that was crammed into their heads and dumped onto exams. *See, e.g., id.* at 10.

in the long-term.³⁰⁰ The teacher also can use brain science as the next Parts/Subparts show.

d. Using the Social Nature of Learning

Since brain science shows that learning is social, small group work (inside and outside of class) and the development of learning communities all can create high impact learning environments. If students work together, depend on each other, and support each other, outputs ought to increase.

It is not just collectivity that advances social learning. Fostering better teacher-student relationships has been shown to have a high impact as well. Consequently, drawing a wide number of students to a teacher's office hours can have as much of an impact on learning as what occurs directly in the classroom.

e. Deploying the Dopamine Effect—Quiz and Compete

Legal education should put the Dopamine Effect of the brain to positive use. This reward system—where the brain releases more dopamine for correct answers—aligns with A.B.A. standards³⁰¹ that have emphasized outcomes and assessment, as well as the organic movement toward greater diagnostic and formative assessment in legal education.³⁰² While law school is notorious for a lack of positive feedback³⁰³—or any feedback at all³⁰⁴—there are numerous low-stakes³⁰⁵ ways to utilize the Dopamine Effect and increase feedback

300. Given brain science advances, students do not necessarily keep such material in their working memories and certainly have difficulty given the amount of learning that must be undertaken in a law school course moving information into long-term memory where it is readily accessible during an exam or in law practice.

301. See, e.g., A.B.A. Standard 302, Learning Outcomes, which says in pertinent part: "A law school shall establish learning outcomes that shall, at a minimum, include competency in the following: (a) Knowledge and understanding of substantive and procedural law; [and] (b) Legal analysis and reasoning, legal research, problem-solving, and written and oral communications in the legal context . . ." AM. BAR ASS'N, ABA STANDARDS AND RULES OF PROCEDURE FOR LAW SCHOOLS, STANDARD 302 LEARNING OUTCOMES 15 (2018), https://www.americanbar.org/content/dam/aba/publications/misc/legal_education/Standards/2018-2019ABASStandardsforApprovalofLawSchools/2018-2019-aba-standards-chapter3.pdf.

302. See Olympia Duhart, *The 'F' Word: The Top Five Complaints (and Solutions) About Formative Assessment*, 67 J. LEGAL EDUC. 531, 531 (2018).

303. Students are rarely informed about positive performances in class and with the disconnect between the release of grades and the start of a new semester or summer vacation, students do not get the positive feedback from prior professors, either.

304. Students rarely leave class knowing they performed well, and until grades are released often weeks after a class ends, students do not know how they scored on the exam.

305. Low-stakes means it can count in a small measure towards a grade or not at all.

at the same time. Teachers can give low-stakes quizzes, even with a single question that does not count. The goals can be varied—to reaffirm learning, preview a topic, or emphasize the complexity, difficulty, or nuance of an area. The quiz can take place outside of class or last only several minutes in class. A quiz can be processed in class, discussed with students online, or reviewed in a podcast. The form of quiz questions can vary—from objective questions, to short answers, to essay-type questions.³⁰⁶

In addition to triggering the Dopamine Effect, quizzing the students in a class promotes another cognitive-emotive context—competition. Competition often encourages engagement. Simply having students compete with each other—as readily seen in moot court competitions—presents a particular form of social learning. For example, in a Constitutional Law course studying the detention of Japanese Americans in relocation camps during World War II, the following question can be used to deliver important background material and encourage learning that lasts:

Which of the following statements about the relocation of people of Japanese ancestry to United States “relocation centers” based on President Roosevelt’s Executive Order 9066 during WWII is the most accurate?³⁰⁷

- A. 2,000 people were relocated from Peru to the United States
- B. Five relocation centers were on an Indian Reservation.
- C. At least 30,020 children under 10 years of age were relocated.

306. Can neuroscience-based understandings be used to set up better assessments? Researchers say “yes.” Neuroscience can help teachers in what is assessed and when the assessments occur. Chandana Watagodakumbura, *Reflecting on Learner Assessments and Their Validity in the Presence of Emerging Evidence from Neuroscience*, 5 HIGHER EDUC. STUD. 58, 58 (2015).

307. The most accurate, and therefore the best, answer is D. Some evacuees were first confined at the Santa Anita racetrack in Los Angeles, before being moved to a detention facility elsewhere. See Konrad Linke, *Santa Ana (Detention Facility)*, DENSHO ENCYCLOPEDIA (Jan. 16, 2018), [https://encyclopedia.densho.org/Santa_Anita_\(detention_facility\)/](https://encyclopedia.densho.org/Santa_Anita_(detention_facility)/). Answer choice A is incorrect because approximately 2,000 people of Japanese descent were imprisoned in US detention centers from across South America. Natasha Varner, *The US Imprisoned Japanese Peruvians in Texas, then said they Entered ‘Illegally’*, PRI (Oct. 1, 2018), <https://www.pri.org/stories/2018-10-01/us-imprisoned-japanese-peruvians-texas-then-said-they-entered-illegally>. B is incorrect because two facilities were controversially placed on Indian Reservation land. *Japanese Internment Camps*, HISTORY (Oct. 29, 2009), <https://www.history.com/topics/world-war-ii/japanese-american-relocation>. C is incorrect because there were estimated to be 17,000 children under the age of 10 in the detention centers. *Internment Camps*, *supra*.

D. People were first removed to Assembly Centers, including horse stables and livestock pavilions.³⁰⁸

Fostering student engagement can occur through value-oriented questions as well as ones about facts. An illustration in criminal law follows:

Criminal Law Problem: Which conduct is worse, Adultery, Perjury, River Pollution, or the Possession of Cocaine? Rank these actions in descending order of heinousness. Decide on a punishment for each action.

f. Minimizing the Forgetting Curve

Ebbinghaus' Forgetting Curve, showing that the brain does not retain half of the information learned within an hour and up to seventy percent within a day,³⁰⁹ has considerable impact on strategies for negotiating law school effectively. While professors may have review sessions after a course ends, this timing runs counter to avoiding the forgetting of information in the first place. What this curve shows is that it is not the initial learning of material that is critical, but rather long-term retention and retrieval. To assist with the retention of information, professors can hold multiple short review sessions spaced periodically throughout a semester. Also, if students were expressly informed about the Forgetting Curve, it might make a difference as to when and how students make outlines and studied in general.

3. *Promoting Motivation and Resilience*

Neuroscience shows that motivation is part of the emotive world and an integral part of learning.³¹⁰ Motivation can be expressed in different ways. Perseverance and curiosity, for example, constitute significant variants of motivation.

The brain can promote or suppress motivation. The brain interprets performance and assigns a value to it.³¹¹ The value the brain assigns to the performance affects motivation. For example, if someone gets a seventy-eight on a quiz, the brain can view it from

308. While some of the answer choices are somewhat accurate, there is one choice that is more accurate than the others. It is instructive that reviewing the question for why the wrong answers are incorrect—and not simply what the best response is—provides more helpful information. Further, people who have more knowledge about an area often can learn more about it than novices and will be more interested in the topic as well.

309. EBBINGHAUS, *supra* note 109.

310. Even when students are motivated to learn, that motivation alone is often insufficient without accompanying organization, technique, and skill. The brain science teaches that how students learn—such as the techniques and methods they use—can make a big difference in what they ultimately retain and retrieve.

311. See Thomas, *supra* note 274.

different perspectives—good, bad, or indifferent. The brain might undermine motivation by interpreting a score in an overconfident manner³¹²—no more hard work needs to be done—or, the opposite way, where the brain might be indifferent, believing there is nothing that can be done to improve the score.

The brain creates its own set of norms—often in the unconscious mind. If a person received the grade of B on a law school test, for example, the brain creates expectations—as acceptable, unacceptable, making progress, etc. This contextualization melds with motivation and helps to explain why some students either have given up improving or resist changes in study habits.

To counter these brain processes, schools can offer programs to help students understand how to keep and promote motivation. Some teachers may support these measures, but others might not view motivation as a part of the teaching domain. The same context applies to how students prepare for class.³¹³ But that does not have to be the case. Teachers can directly help with motivation. After a class, teachers can send an email to students recognizing their contributions to the discourse. Even a short email can show that teacher has listened, that contributions matter, and that they are welcomed.

Whatever learning techniques are used, it helps student motivation to learn why course techniques are being used. This means that metacognition—what is occurring and why—is as important to a learning enterprise as the techniques themselves.

4. *Use Helpful Schema to Allow Students to Map the Course*

Since the brain organizes information through schema or structures,³¹⁴ emotive structures can be used to promote deeper learning. Instead of using tables of contents or syllabi to organize assignments, special schema can be used to create course domain maps and help show students how course areas connect to each other. Much like the now common navigational systems that provide overviews of trips as well as details, it would be helpful to students to see the entire structure of a course and then how specific areas of a course can be accessed.

Significantly, schema also can be used to think through legal problems. One generic structure, for example, starts with the big picture and moves to greater specificity over several steps. It can be

312. In fact, a major theme in Daniel Kahneman's book, *THINKING FAST AND SLOW*, is that many people instinctively respond to situations in an overconfident manner, even experts. KAHNEMAN, *supra* note 102, at 12.

313. Some professors made sure that students prepared for class through fear—much like the mythical Professor Kingsfield of *THE PAPER CHASE*, *supra* note 16. But this way of learning, while it provided motivation in the here and now, often does not provide sustainable long-term storage and retrieval of information, nor for some a productive emotional experience.

314. See DOYLE & ZAKRAJSEK, *supra* note 52, at 113.

analogized to a funnel: “Course - Area - Rule - Exception.” This schema frames the thinking process for students who are prone to jump to answers and short-circuit the difficult slow thinking required to evaluate law and facts.

a. Schema Example: The Evidence Highway

One evidence course schema utilizes a highway analogue. Objections serve as potholes and detours to the ultimate destination, “in evidence.” This destination includes properly provable proof that can be considered by the trier of fact. There are two parts to this highway—the road taken when impeaching a witness and the road taken in proving an element of a claim, cause of action, or defense. If the evidence is offered to prove an element, there are at least seven significant detours—relevance, character, opinions, hearsay, privilege, witnesses, and writings. These areas also correspond to evidentiary objections. This visualization is not constructed to aid so-called “visual” learners, but rather because it provides a cognitive schema that frames most of the course and helps students with the first step in resolving evidentiary problems—locating the area from which an objection will be made. Even with a helpful schema, evidence law remains a very difficult and challenging subject, if only because there are multiple steps within a single problem.

b. Schema Example: The Big House of Due Process

Another example of a useful cognitive schema that couples cognition with emotion (and creativity) is the big house of due process. This use of a house with many rooms borrows from the Memory Palace. The Memory Palace is a 2,000-year-old technique for promoting long-term storage of information and its ready recall. It works by mentally placing the things to be remembered around one’s house with funny or interesting ways to recall the information. The big house of due process places doctrines in different rooms of the house, allowing students to consider all of the “doctrinal rooms” when asked a due process question.³¹⁵

The house serves several purposes. It provides a structure for the doctrines and also a narrative. The house shows that due process can be a story, and therefore easily recalled. The mind constructs schema to create deep, chunked knowledge, and the house promotes that by opening up each room to bits of linked knowledge, such as for procedural due process, first determining whether there was a government deprivation of life, liberty, or property before exploring what process is due.

315. The due process rooms include substantive due process, procedural due process, void for vagueness, incorporation, and basic.

V. CONCLUSION

Neuroscience advances have led scientists to believe that emotion and cognition operate interdependently, not as separate functions in the brain. This understanding impacts law, lawyering, and legal education in significant ways. The coupling of “emotive cognition” disrupts the traditional Langdellian focus on cognitive legal analysis and its resulting marginalization of emotion. In updating Langdellian orthodoxy, emotion ought to be expressly and positively embedded in the profession. Training, commencing in law school, should show future lawyers how to feel and act as a lawyer, as well as to think like one. This coupling will not simply provide a more accurate picture of how people think and analyze, but also can promote a healthier and more effective profession. There are many ways to apply the new educational neuroscience, from the Dopamine Effect, enhanced value of narrative, revitalized use of schema, and minimizing the re-creation of hierarchies, to name a few. The profession should not wait to begin adopting them.