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THE AFFECTIVE BLINDNESS OF EVIDENCE LAW

TENEILLE R. BROWN[†]

INTRODUCTION

Evidentiary rules and practices reveal a folk psychological view of emotion, placing it at odds with reason. Specifically, many substantive and procedural rules of evidence explicitly require jurors to turn off their emotions in favor of rational, so-called “top-down,” executive thinking. In order to make the point that this dichotomy between emotion and reason is simultaneously reflected in our evidence law and also empirically wrong, I will address how emotion is treated in (a) the use of limiting instructions, (b) the exclusion of prejudicial evidence, (c) credibility assessments, (d) sentencing and damages instructions, (e) instructions related to the “heat of passion” theory of voluntary manslaughter, and (f) the excited utterance hearsay exception. In each case I will demonstrate that while the text of the rules may be benign, the way they are interpreted reflects confusion over the role played by both subtle and intense emotion. Specifically, the rules listed above evince one of five related errors:

- Emotional and rational processes can neatly be divided, and by attending to our emotions, we can—and should—use our cognitive faculties to squash them.
- Emotional evidence and emotional processes always render decisions that are less rational, more prejudicial, and therefore less accurate.
- Emotion testimony distracts us and makes it hard for us to pay attention or remember events.
- Credibility assessments do not require empathy.
- Emotion should not and cannot be involved in moral judgment and reasoning related to sentencing.

Perhaps more strikingly, encouraging jurors to use their reasoning to quiet their emotions espouses a view of the juror as aspiring toward psychopathy. Psychopathy is a clinical personality disorder. It is diagnosed through an individual’s rating on a set of emotional and social

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criteria. As data reveal that not all psychopaths are violent, it appears that the hallmark traits include the ability to feel little remorse or empathy, and possessing very shallow affect. Psychopaths may be uniquely able to divorce their reasons from feelings of sadness, shame or guilt. So they may defy the label of the false dichotomy. Even so, this is surely not the ideal we aspire to for the modern American juror.

While emotions such as anger might prejudice our judgment, the failure to differentiate between various emotional (affective) processes and their impact on decisions reflects a view that is woefully out of step with our current understanding of emotion and the brain. Emotions may distract us in some situations and help us focus in others. This may have to do with the emotion itself and its impact on our perception, attention, memory or reasoning. Or it may have to do with the emotion's duration or the social context in which we find ourselves.

Contrary to the skeptical view espoused by some of our greatest evidence scholars, emotion is not universally corrupting, nor is it always at odds with reason. Emotion is context-specific and non-linear, and it operates at varying levels of consciousness and subtlety.¹ Further, the cognitive sciences demonstrate that affect and reason are anatomically interconnected and functionally interdependent. In this Article, I hope to demonstrate that, at the neuronal and the social level, the false dichotomy between emotion and reason falls apart. It has persisted in part because anatomically incorrect metaphors are deeply embedded in our cultural history—that we think with our brain and feel with our heart.

This blindness to emotion has deep roots in our common law, and traces back to the very beginning of jury trials. While civil juries existed for property disputes and the like, throughout medieval times it was often the clergy who determined whether an accused was guilty or innocent through a subjective process known as “the ordeal.” As one example, the “cold water ordeal” involved the defendant being dumped in a large pool

1. See Ben Seymour & Ray Dolan, *Emotion, Decision Making, and the Amygdala*, 58 NEURON 662, 662 (2008) (“The resulting decision phenotype is typically emotional but arises from underlying processes that are generally rational and whose effects might often only become *apparent* in instances when they cause deviations from rationality.”) (emphasis added); Adam L. Darlow & Steven A. Sloman, *Two Systems of Reasoning: Architecture and Relation to Emotion*, 1 WIREs COGNITIVE SCI. 382, 383 (2010); Ap Dijksterhuis, *Think Different: The Merits of Unconscious Thought in Preference Development and Decision Making*, 87 J. PERSONALITY & SOC. PSYCHOL. 586, 586 (2004) (“[W]hether what we may call ‘unconscious thought’ contributes to good decisions is also not clear.”); see generally Timothy D. Wilson et al., *Introspecting About Reasons Can Reduce Post-Choice Satisfaction*, 19 PERSONALITY & SOC. PSYCH. BULL. 331 (1993) (arguing that a consumer’s introspection about his or her choice will eventually cause dissatisfaction with that choice). Psychological level embraces many processes (not just two) and at the neural level, these processes are multiplied by a factor of 10 to the 16th. See Mark Lubell et al., *Institutional Design Capitalizing on the Intuitive Nature of Decision Making*, in BETTER THAN CONSCIOUS?: DECISION MAKING, THE HUMAN MIND, AND IMPLICATIONS FOR INSTITUTIONS 413, 417 (Christoph Engel & Wolf Singer eds., 2008) (“[I]nstitutional-level approaches that embrace a binary distinction between rational or conscious cognitive processes and the irrational or unconscious cognitive process will necessarily miss the mark in terms of their value to accurate fact-finding.”).

with a rope tied around his hips. If he sank, he was saved as innocent, “for the purity of the water had accepted him,” but if he managed to float, he was condemned as guilty.² The priest overseeing the ordeal was thought to channel the judgment of God, or *judicium Dei*. In 1215 the Fourth Lateran Council of the Christian Church prohibited clergy from presiding over the ordeal, thus delegitimizing the once divine process.³ When the process lost its ecclesiastical imprimatur, “it drew the ground from under that method of trial.”⁴

Courts needed a substitute for the clergy. The lay jury answered this call, with common citizens in some cases rendering final judgments.⁵ To make this radical shift, it was felt that rules must be put in place to temper the power of uneducated lay jurors. This “reining in” of the jury was habitually described in terms of quieting their ignorant emotional passions. Much of the subsequent development in evidence law continued in this vein of accepting that it was jurors’ emotions that needed silencing. This Article hopes to shatter this deep-seated but folk psychological view of emotion as pedestrian or corrupting.

While this Article is not meant to disrupt the preference for reasonable arguments and outcomes over unreasonable and intuitive ones, it argues that emotions are often necessary for reasoning. This may be particularly true in social interactions, where we attend to many stimuli and digest bundles of non-verbal cues. Of course, in other situations, we give emotion too much credit to improve our credibility, where emotions actually obscure our memory or our perception of others. Rather than drawing bright policy lines as to when emotions ought to be relied upon, this Article will take existing rules and practices and unpack the flimsy folk

2. George Fisher, *The Jury’s Rise as Lie Detector*, 107 YALE L.J. 575, 585 (1997). Another type of ordeal involved burning the accused’s hand with hot coals, and then binding the hand with cloth. When the cloth was removed three days later, a priest would examine the burned skin and pray to God before the accused to render his judgment. If the skin had begun to heal, the accused would be acquitted, if it had worsened, the accused was guilty and punished. Thomas P. Gallanis, *Reasonable Doubt and the History of the Criminal Trial*, 76 U. CHI. L. REV. 941, 945 (2009) [hereinafter Gallanis, *Reasonable Doubt*] (citing Thomas P. Gallanis, *Ordeal in English Common Law*, in THE OXFORD INTERNATIONAL ENCYCLOPEDIA OF LEGAL HISTORY (Stanley N. Katz, ed., 2009)).

3. JAMES BRADLEY THAYER, A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW 37 (Boston, Little, Brown & Co. 1898); JOHN HENRY WIGMORE, A TREATISE ON THE SYSTEM OF EVIDENCE IN TRIALS IN COMMON LAW, INCLUDING THE STATUTES AND JUDICIAL DECISIONS OF ALL JURISDICTIONS OF THE UNITED STATES 3073 (Boston, Little, Brown & Co. 1905).

4. Maximus Lesser, *The Historical Development of the Jury System*, 134, 150 (1894) (“Introduced originally as a matter of favor and indulgence, the jury thus gained ground with advancing civilization, gradually superseding the more ancient and barbarous customs of battle, ordeal, and wager of law, until at length it became, both in civil and criminal cases the ordinary mode of determining facts for judicial purposes.”).

5. The reason for the decline of the judicial ordeal and the growth of its substitute, the jury trial, has been the subject of two competing interpretations. One line of interpretation argues that the judicial ordeal was about factual proof. Its decline came as people demanded that facts be found by mortals, not by God. The second line claims that factual proof was never the issue, as the facts of innocence or guilt were generally known prior to an ordeal. Instead, the latter camp posits that what was at stake was the moral responsibility for judgment. *Id.* at 145; Gallanis, *Reasonable Doubt*, *supra* note 2, at 945.

psychological premises on which they rest.⁶ This Article argues for nuance, and challenges the current lack of nuance in our evidence practices related to emotion. I conclude by suggesting ecologically valid research paradigms to determine how best to revise the rules to properly value emotional processes.

I. STEPPING BACK: HOW EVIDENCE LAW MAY BENEFIT FROM THE COGNITIVE SCIENCES

Scholars have been writing on the uneasy marriage between the brain, behavior, and the law for at least a hundred years.⁷ Enthusiasm for the relationship has waxed and waned, with an intellectual explosion in the last few years based on emerging data from cognitive neuroscience.⁸ Despite developing later in time, the cognitive sciences do not replace the importance of psychology. Instead, they build upon psychological theories, offering an “expansion of the tools and concepts now available to psychologists.”⁹

Under the umbrella of “law and the brain,” the doctrinal area that seems most ripe for review is evidence law. Within evidence law, it seems that neuroscience can help us articulate more precise definitions for terms to ensure our normative commitments, once set, track the reality of our physiological constraints. Data from neuroscience can also guide procedural rules, employing various decision-making models that

6. JOHN HENRY WIGMORE, *THE SCIENCE OF JUDICIAL PROOF: AS GIVEN BY LOGIC, PSYCHOLOGY, AND GENERAL EXPERIENCE AND ILLUSTRATED IN JUDICIAL TRIALS* 693, 792 (3d ed. 1937) (stating how crude the psychological presumptions under the rules are); see generally WILLIAM TWINING, *THEORIES OF EVIDENCE: BENTHAM AND WIGMORE* (1985).

7. In the first decade of the twentieth century, Hugo Münsterberg, then a professor of psychology at Harvard, brazenly announced that the new psychological sciences would supplant the intuition and common sense of attorneys, judges and juries, especially as related to the “the mind of the witness.” See HUGO MÜNSTERBERG, *ON THE WITNESS STAND: ESSAYS ON PSYCHOLOGY AND CRIME* 20 (1908). Some of Münsterberg’s theories have been tested in more sophisticated studies, and have been borne out. Others, however, have not stood the test of time. One in particular was Münsterberg’s idea that simple word association tests could be used to detect whether a suspect is lying, based on how much time it takes for the suspect to respond to neutral versus “crime-related” words. *Id.* at 73–110. Even John Wigmore, who openly criticized Münsterberg’s book, hoped for an “energetic alliance of psychology and law, in the noble cause of justice.” See Daniel D. Blinka, *Why Modern Evidence Law Lacks Credibility*, 58 *BUFF. L. REV.* 357, 373 (2010) (citing John H. Wigmore, *Professor Muensterberg [sic] and the Psychology of Testimony: Being a Report of the Case of Cokestone v. Muensterberg*, 3 *U. ILL. L. REV.* 399, 432 (1909)). Wigmore debunked Münsterberg’s theory about the ability of psychologists to consistently detect suspects who were lying using simple word association tests. Roger C. Park & Michael J. Saks, *Evidence Scholarship Reconsidered: Results of the Interdisciplinary Turn*, 47 *B.C. L. REV.* 949, 958 n.30 (2006) (citing Wigmore, *supra*, at 427–31). Interestingly, more complicated versions of these guilty knowledge or memory tests have been resuscitated by neuroscientists, and perhaps once again, though his data were lacking at the time, Münsterberg’s crude theories may be revitalized. See Eben Harrell, *Fighting Crime by Reading Minds*, *TIME* (Aug. 7, 2010), <http://www.time.com/time/health/article/0,8599,2009131,00.html>.

8. To be sure, according to the impressively well-researched work of Michael Saks and Roger Park, this relationship has been “one of bursts of enthusiasm followed by periods of disenchantment.” Park & Saks, *supra* note 7, at 957.

9. Greg J. Norman, John T. Cacioppo, and Gary G. Berntson, *Social Neuroscience*, 1 *WIREs COGNITIVE SCI.* 60, 64 (2010).

might drive our institutional obligations, such as making sure that jurors encode testimony and can recall it later. Thus in this Article we refer to emotional evidence as both testimony of witnesses with emotional content as well as the related emotional processes of jurors when they hear such evidence.

As the law of evidence is the law of managing inferences and eliminating unwanted biases, the cognitive neuroscience of decision-making has been, and will continue to be, very instructive in rethinking why the rules of evidence exist in their present form, and whether they should change.¹⁰ Seventy-five years ago, legal scholar Robert Maynard Hutchins observed that evidence law harbored a confusing internal psychology stemming from human experience and our folk intuitions.¹¹ Hutchins believed that if lawyers did not allow evidence law to be systematically reworked by “objective psychologists,” we lawyers would “abdicate our position as specialists in human behavior” and instead “reaffirm the traditional conservatism of the profession, and permit the rules of evidence to recede still further from reality.”¹² Wigmore, on the other hand, despite being quite well read in contemporary psychology, felt that the resolution of legal principles should not be outsourced to interloping psychologists.¹³ Rather than exposing the law’s principles to a social science chopping block, Wigmore thought that the proper gatekeepers for revising evidence rules “would be the lawyers themselves.”¹⁴ Even Hutchins eventually came to rue his commitment to having psychologists answer evidentiary questions. He offered an apologia later in his career:

We hoped to discover whether an evidence case was “sound” by finding out whether the decision was in harmony with psychological doctrine. What we actually discovered was that psychology had dealt with very few of the points raised by the law of evidence; and that the basic psychological problem of the law of evidence, what will affect juries, and in what way, was one psychology had never touched at all.¹⁵

Given the psychological methods of Hutchins’s day, his skepticism regarding psychology’s ability to inform the law is understandable. But

10. In order to wash us of our subjective bias, some prefer a Bayesian approach, which is a theory of evidence based on mathematical probabilities. However, as Allen & Leiter pointed out, Bayesian analysis still requires subjective valuation for the model to be accurate in predicting outcomes. Ronald J. Allen & Brian Leiter, *Naturalized Epistemology and the Law of Evidence*, 87 VA. L. REV. 1491, 1508–09 (2001).

11. See Blinka, *supra* note 7, at 373–74.

12. The work of Wigmore, Morgan, and Hutchins illuminates this relationship. *Id.* at 374 (quoting HARRY ASHMORE, UNSEASONABLE TRUTHS: THE LIFE OF ROBERT MAYNARD HUTCHINS 47 (1989)). Wigmore disagreed with this proposition.

13. See WIGMORE, *supra* note 6, at 792.

14. Blinka, *supra* note 7, at 373; see also TWINING, *supra* note 6, at 136.

15. Robert Maynard Hutchins, *The Autobiography of an Ex-Law Student*, 1 U. CHI. L. REV. 511, 513 (1934). “Hutchins closed with ‘the hope of some day striking some mutual sparks’ between law and psychology. That day would be far off.” Blinka, *supra* note 7, at 375.

the world has since changed.¹⁶ We now know quite a bit more about how humans make complex social observations and decisions, and we can observe the neural correlates of these mechanisms through various neuroimaging techniques.¹⁷ Studies of individuals with localized brain lesions have also helped us understand how brain structures relate to healthy and abnormal functioning. We can, therefore, take up where others in the law and psychology movement left off, adding another layer of explanatory power, and a framework for linking structures to functions. Studying the function and mechanisms of the brain allows us to manipulate variables and tasks, control others, and thus say more about the neuroscientific causes, connectedness, effects, and interventions than could be said with psychological experimentation alone.¹⁸

Given the relationship of neuroscience to law, it might be time to revisit normative epistemological questions in light of neuroscientific developments.¹⁹ While I expressly adopt an empirical epistemology for evidence law here, there are alternatives depending on the purposes being served in a courtroom.²⁰ Surely discovering the truth is an important function of the jury trial. But so is legitimately resolving disputes, preserving the integrity of the legal profession and law enforcement, pro-

16. Although as early as the 1920s, some psychology and law researchers appreciated the complementary and bivalent nature of emotion and reason: “[T]he mind is both receptive and active, receptive in so far as it receives impressions, and is excited by them to emotion; active in so far as it transforms its impressions and emotions by reasoning and volition.” 2 PAUL VINOGRADOFF, *OUTLINES OF HISTORICAL JURISPRUDENCE* 37 (1920).

17. To be fair, much of this research has not been conducted on mock jurors. But some of the basic principles from social, cognitive, and affective science can definitely be extrapolated to a trial. Even so, much more mock jury work needs to be conducted before the evidence rules are dramatically changed. Park & Saks, *supra* note 7, at 957 (“For obvious reasons, psychology is the most important of the interdisciplinary threads that can be woven into evidence law scholarship. Evidence law is much concerned with the abilities of witnesses to perceive, to remember, and to report what they have observed. It is also concerned with the abilities of jurors to comprehend, evaluate, and draw inferences from the evidence presented to them, including their ability to assess the sincerity of lay witnesses and to understand and not be overwhelmed by expert witnesses. All of these are psychological issues.”).

18. JOSEPH LEDOUX, *THE EMOTIONAL BRAIN: THE MYSTERIOUS UNDERPINNINGS OF EMOTIONAL LIFE* 12–13 (1996).

19. See Joshua Greene & Jonathan Cohen, *For the Law, Neuroscience Changes Nothing and Everything*, 355 *PHIL. TRANSACTIONS ROYAL SOC’Y LONDON B: BIOLOGICAL SCI.* 1775, 1775, 1778, 1784 (2004); Frederick Schauer, *Can Bad Science Be Good Evidence? Neuroscience, Lie Detection, and Beyond*, 95 *CORNELL L. REV.* 1191, 1197–99 (2010).

20. Empiricism should inform our evidence rules because courts are not philosophical thought experiments. Courts exist in the real world, and in the real world, human beings have feelings, imperfect eyes and ears, wavering memory, and opinions. Even using a Bayesian analysis of evidence law and procedure, we still need to generate facts and premises on which our probabilities of accuracy are based. Thankfully, there is no omnipotent observer that sees and memorizes everything we humans do. Thus, at trial there can never be complete objectivity in the assessments of our behavior. And yet, judges still need to resolve the disputes before them. Was there an agreement to burglarize the victims’ house? Did the physician know that he was committing fraud when he submitted the Medicare claims? Did the gunman deliberately take aim and shoot, or was it an accident? These are the kinds of factual legal disputes that result from conflicting versions of events. Of course, the omniscient observer might be able to provide a third-person snapshot of externally-observable behavior. See Craig R. Callen, *Cognitive Science and the Sufficiency of “Sufficiency of the Evidence” Tests*, 65 *TUL. L. REV.* 1113, 1118 (1991).

moting justice, and encouraging civil obedience. Depending on the way these oft-competing goals are prioritized, the rules of evidence may or may not need to comport with empirical data related to cognitive neuroscience. Indeed, in some cases it might be wise to reject empirical findings in order to achieve larger normative goals.²¹

To the legal purists, let me console you by conceding that scientific findings cannot and should not by themselves alter the steady drumbeat of legal rules and traditions; raw data are incapable of answering socially-driven normative questions.²² Specific to legal practice, the disconnect, or lack of cross-pollination between data and legal rules is intensified by the slow speed by which lawyers incorporate knowledge gained from other fields.²³ The normative question of whether science ought to inform the law was the topic of heated debate between many of our country's foundational evidence scholars. To be sure, some of our best philosophers of biology and law still argue that "[e]mpirical questions are the focus of scientific research, [while] conceptual questions address how the relevant concepts are articulated" and whether "the degree to which articulations regarding the brain make sense."²⁴ While I agree that philosophy should address how concepts are articulated and applied, it is really the domain of neuroscientists and social psychologists to determine whether the empirical data are being interpreted in sensible ways.

21. Emotions can and should play differing roles, depending on the environment in which they are elicited, in whom, and by what. For policy reasons, we may choose to actively discourage emotional arguments on a ballot initiative, *see* Advisory Op. to Attorney Gen. re: Fla. Marriage Prot. Amendment, 926 So. 2d 1229, 1238 (Fla. 2006), but allow them by the police to extract a confession, *see* State v. Ardoin, 58 So. 3d 1025, 1037–38 (La. Ct. App. 2011). And we might allow emotion to be expressed overtly during a witness's testimony, but instruct the jurors not to rely on particular emotions, such as empathy, when they make decisions about how much damages to award in a tort case.

22. Peter Tillers, *What Is Wrong with Character Evidence?*, 49 HASTINGS L.J. 781, 782 (1998) ("One prominent observer, John Langbein, takes the position that rules of evidence are particularly hardy weeds that manage to survive even when there is no good reason for their continued existence."); *see also* John Leubsdorf, *Presuppositions of Evidence Law*, 91 IOWA L. REV. 1209, 1210 (2006) ("[The rules] are so feeble that 'to pull one misshapen stone out of the grotesque structure is more likely simply to upset its present balance between adverse interests than to establish a rational edifice.' Not many fields of law can thus be described as too irrational to be improved." (quoting *Michelson v. United States*, 335 U.S. 469, 486 (1948))).

23. ROSCOE POUND, *INTERPRETATIONS OF LEGAL HISTORY* 69 (1930) ("[I]nterest shifted on the one hand to the physical and biological sciences, which were related directly to industry and economic prosperity, and on the other hand to an empirical political and social science Such movements always affect jurisprudence somewhat later than related social sciences because lawyers respond cautiously to new tendencies through solicitude for the social interest in the general security and fear of impairing the stability of the legal order.").

24. Michael S. Pardo & Dennis Patterson, *Philosophical Foundations of Law and Neuroscience*, 2010 U. ILL. L. REV. 1211, 1225 (2010). To get a sense of the legs on this debate, *see* Hermann Kantorowicz, *Some Rationalism About Realism*, 43 YALE L.J. 1240, 1248–49 (1933) (defending rationalism in the face of growing legal realism scholarship, and discussing why realists are internally confused as they fail to see that legal and moral norms are different, as the law only cares about behavior regardless of motive, while ethics and morality care about intention; stating that legal science is empirical, the method of which is observation, the purpose of which is foretelling effect, the model of which is natural science). "[T]he realists confuse *natural* and *cultural* science [They also] confuse *explanation* and *justification* . . . [and] *law* and *ethics*." *Id.* This appears to be contradicted by such doctrines as *mens rea* and the torts of battery.

Crucially, there still must be some translation by lawyers to decide whether these neuroscience findings fit into the relevant legal molds. But when drafters of the evidentiary rules explicitly and naively employ folk psychological ideas to inform their rule-making, we must return to these scientific assumptions to make certain our existing normative commitments are being realized.

Here, identifying my small piece of the puzzle, I will merely explicate whether our evidence principles, as currently justified and practiced, track reality.²⁵ Put differently, when we ask jurors to put their emotions and feelings aside in order to make a purely rational decision, are we asking them to do something that is often impossible?²⁶ This is a different question all together from whether the rules *ought* to be supported by empirical data. Once our policy commitments are determined, we must make sure evidence rules rest on valid presumptions about how humans actually process information.

As you may have guessed, the specific lens—or field of science—I will draw upon to answer this question is cognitive, affective, and social neuroscience, or “cognitive sciences” for short.²⁷ Drawing on both new and established work in cognitive science concerning the relationship between emotion, or affect, and reason, I revive various challenges to evidence law. I argue that we ought to rethink the value of emotion in the formal decision-making process that is our modern jury trial, as reflected in the Federal Rules of Evidence (FRE) and their state counterparts.

I am not the first one to recognize the valuable contribution of scholarship on emotion to law. Other scholars before me have acknowledged its value in our regulatory rulemaking,²⁸ legislative process,²⁹ con-

25. In addition to ensuring that the rules themselves reflect how humans actually behave, neuroscience can contribute in other important ways. Revealing the fuzziness of our behavioral definitions is just one important function. Neuroscience might also provide structural improvements to the way evidence is presented throughout a trial, enhancing juror comprehension and memory and reducing unwanted bias. Neuroscience techniques can also be used to determine whether witnesses are truly competent, and whether certain people, due to cognitive and affective deficits from autism or psychopathy may be discouraged from serving on a jury.

26. One review posited that the interface between cognition and emotion encompasses the “processing of emotionally salient information in contexts requiring cognitive evaluation to generate an appropriate response.” This is precisely what is expected of legal decision makers at trial. Rebecca Elliott et al., *Affective Cognition and Its Disruption in Mood Disorders*, 36 NEUROPSYCHOPHARMACOLOGY REVIEWS 153, 153 (2011).

27. I recognize that cognitive theorists are often positioned as separate from the subgroup of affective or social neuroscientists. Here, I use the term “cognitive science” to include all of these other disciplines and methods of investigating the human brain and its relation to the mind and society.

28. Recent scholarship by Dan Kahan yields a more respected role of emotion in decision-making and “rational” risk assessment, as he writes that emotion can serve as a tool for incorporating cultural worldviews that may not be as capable of overcoming the collective action problem. Dan M. Kahan, *Two Conceptions of Emotion in Risk Regulation*, 156 U. PA. L. REV. 741, 746 (2008) (“The irrational weigher theory asserts that individuals lack the capacity to process information that maximizes their expected utility. Because of constraints on information, time, and computational power, ordinary individuals must resort to heuristic substitutes for considered analysis Like the irra-

stitutional interpretation,³⁰ judicial decisions,³¹ jury instructions,³² and criminal sentencing.³³ The specific issue I am addressing here is evidence law's embodiment of the false dichotomy between emotion and reason. In all fairness to the dedicated and capable drafters of our evidence rules and the careful judges who interpret them, they were not alone in viewing emotion as antagonistic to reason. Deep within our Western culture is a tradition of treating emotion as a monolithic fog, an "untrustworthy force that cripples judgment."³⁴ While the dichotomy between emotion

tional weigher theory, the cultural evaluator theory treats emotions as entering into the cognition of risk. But it offers a very different account of how—one firmly aligned with the position that sees emotions as constituents of reason."); see also Dan M. Kahan, *The Progressive Appropriation of Disgust*, in *THE PASSIONS OF LAW* 63, 73 (Susan A. Bandes ed., 1999) ("[W]hen we force decision makers to be open about the normative commitments that underlie their disgust sensibilities, members of the public are fully apprised of what those commitments are."); Rachel F. Moran, *Fear Unbound: A Reply to Professor Sunstein*, 42 *WASHBURN L.J.* 1, 8–9 (2002) (responding to how Cass Sunstein characterizes the emotion of "fear" in the regulatory process); Molly J. Walker Wilson, *Adaptive Responses to Risk and the Irrationally Emotional Public*, 54 *ST. LOUIS U. L.J.* 1297, 1307 (2010).

29. See Andrew Jay McClurg, *The Rhetoric of Gun Control*, 42 *AM. U. L. REV.* 53, 66 (1992). In the policy-making context, Don Welch has investigated the history of our love-hate relationship with emotion, calling upon various theoretical arguments and practical examples. Welch cites Andrew Jay McClurg's writing on the emotional rhetoric of the gun control debate, which argues:

Appeals to emotion are fallacious because emotions are irrelevant as a basis for deciding an issue. While emotions have psychological relevance in that they have a persuasive impact on the human mind, they have no logical relevance because they are incapable of establishing the truth of conclusions. Proving truth requires the mustering of convincing evidence and not simply the exploitation of emotional sensitivities. Emotions may move us to act, but reason should control the course of that action.

Id. (footnotes omitted).

30. Terry A. Maroney, *Emotional Common Sense as Constitutional Law*, 62 *VAND. L. REV.* 851, 872 (2009) ("[A]nti-sympathy' instructions [are instructions] in which capital sentencing juries are admonished to set aside all 'passion' and 'sentiment,' including emotions ranging from 'prejudice' to 'sympathy.' Such instructions are considered justifiable—perhaps even required—because of the Court's evaluation that a capital sentencing jury's decision must be a 'reasoned moral response' rather than 'an emotional one.'" (footnotes omitted)).

31. Terry A. Maroney, *The Persistent Cultural Script of Judicial Dispassion*, 99 *CALIF. L. REV.* 629, 630–31 (2011) ("Thomas Hobbes declared in the mid-1600s that the ideal judge is divested 'of all fear[, anger, hatred, love, and compassion.]' In 2009, more than three centuries later, then-Judge Sonia Sotomayor testified at her Supreme Court confirmation hearing that judges 'apply law to facts. We don't apply feelings to facts.' The idea that emotion might influence judging has been characterized as 'radioactive.'" (alteration in original)).

32. Susan A. Bandes, *Introduction*, in *THE PASSIONS OF LAW* 1, 2 (Susan A. Bandes ed., 1999) ("We take it for granted that jurors sometimes bring compassion and mercy, or anger and a desire for vengeance, to their deliberations, but we may think of jurors' tendency toward such feelings as illegitimate—steps on the path to jury nullification.").

33. Austin Sarat, *Remorse, Responsibility, and Criminal Punishment: An Analysis of Popular Culture*, in *THE PASSIONS OF LAW*, *supra* note 32, at 168, 169–70 ("[R]emorse, unlike some other emotions, does not challenge reason but seems instead to be a reasonable/rational response to transgression. Indeed we worry more about the wrongdoer who feels nothing or who responds through a careful cost/benefit calculus.").

34. The skepticism of emotional evidence and processes in the common law has very deep roots. More recently, Christian beliefs equate emotions and passions with various sins, which good Christians must resist in order to attain eternal salvation. See LEDOUX, *supra* note 18, at 24. Plato famously argued that our emotions cloud reason and hinder thought. To him, "emotions were like wild horses that have to be reined in by the intellect." *Id.*; see also David J. Arkush, *Situating Emotion: A Critical Realist View of Emotion and Nonconscious Cognitive Processes for Law and Legal Theory*, 2008 *BYU L. REV.* 1275, 1279 (2008). When the process lost its ecclesiastical imprimatur, it "drew the ground from under that mode of trial." LESSER, *supra* note 4, at 145.

and reason is often wrong, it does make intuitive sense, as “[w]e all mak[e] mistakes because of pride, anger, or other emotions.”³⁵

To be sure, bigots, anti-Semites, and anti-Muslims can manipulate our fears to cloud our judgment and falsely accuse vulnerable people of things for which they were not culpable. Today, we merely need to turn on the television and view the public discourse surrounding health care reform, climate change, or banking regulations to see that emotions can be very powerful in obscuring our concern that the facts may be wrong. Surely any good politician or trial attorney knows this. But it is not the reliance on emotion itself that is immoral or destructive. Rather, it is the use of emotion to confuse people into not appreciating that the speaker is *lying about crucial facts*. Emotions themselves are not the enemy, and they can be manipulated by all sides. To best take advantage of emotional processes when we vote or sit on a jury, we need superior fact-checking by critical journalists, and aggressive cross-examination by well-matched attorneys. Even still, if we suspect emotion to cloud our judgment, as it may with rage or anger, it is not universally antagonistic to reason. As I will demonstrate, the cognitive sciences model of emotion is far less monolithic than the folk psychological model that is embodied in our evidence rules and practice. But for better or worse, and perhaps due to history more so than data, we continue to lump the kaleidoscope of emotions together, collapsing various shades and brightness into a hue of complete darkness. This condensed hue is then more easily contrasted with the bright light of reason.³⁶ I am referring to this phenomenon as “affective blindness.”³⁷ We are blind to the contribution that emotion makes to rational thoughts and behavior. Just as with color blindness, we fail to distinguish between various emotions and their important role in decision-making.

Just as we appreciate that emotions such as rage can impair our reasoning, we also intuitively know how helpful they can be. Emotions are the ultimate communication tool. No matter where you go in the world, six facial expressions—happiness, sadness, fear, disgust, anger, or surprise—can be instantly understood. This supports the idea, as Alan Sanfey suggests, that certain brain structures, many of which are related to emotion and value, have evolved across disparate cultures to assist with communication.

35. Richard A. Posner, *Emotion Versus Emotionalism in Law*, in *The PASSIONS OF LAW* *supra* note 32, at 309, 310; see also Dan Simon, *A Third View of the Black Box: Cognitive Coherence in Legal Decision Making*, 71 U. CHI. L. REV. 511, 569 (2004).

36. In fact, the dichotomy may be inadvertently furthered by this Article, as I will continue to refer to emotions and cognition (or reasoning) by their traditional terms, rather than creating a new language that reflects their complicated relationship.

37. Affective blindness in neuroscience refers to a specific trait when performing a specific task (namely, being unable to be aware of the emotional valence of a masked image). I am using the term differently here.

Emotions can serve as decision-making aids and are vital for communication.³⁸ Particularly with regard to social decisions, emotional perception and sensitivity predicts faster and more appropriate social reasoning.³⁹ Deficits in emotional processing can lead to isolation and a lack of trusting relationships. Emotional processes “foster mutual reciprocity . . . make reputation important, and . . . encourage punishment of those seeking to take advantage of others.”⁴⁰ These are decidedly pro-social attributes. Clearly, the picture of emotion is a diverse one, with many different effects depending on the social and personal context. It can confuse us, or make us do things we regret later, but it can also help us learn whom to trust in our community, what painful mistakes should not be repeated, and who might make a good partner.

What Is Emotion?

There are multiple definitions of emotion, and no philosophical or scientific consensus.⁴¹ Emotion is a catch-all word that likely means many different things depending on one’s frame of reference. Is it a brief feeling of lust or anger, a long-term mood of sadness, or a character trait of melodrama? Indeed, the neurobiology behind emotions differs as well—anger engages different brain circuits from empathy. Patients with localized brain damage have taught us that one can still feel happy at appropriate times even if he can never feel fittingly embarrassed or compassionate. This is because “different brain systems control[] different feelings.”⁴²

Presently, many evidentiary theories deal with emotion as if it were like a water faucet, either on or off, emitting only scalding hot water. The volume of the water could be likened to how aroused we are. Arousal is the term used to signal the *intensity* of an emotion, which can definitely affect how we respond to it. Obviously water can also be varying degrees

38. Bhismadev Chakrabarti & Simon Baron-Cohen, *In the Eyes of the Beholder: How Empathy Influences Emotion Perception*, in *THE SCIENCE OF SOCIAL VISION* 216, 216 (Reginald B. Adams, Jr., Nalini Ambady, Ken Nakayama & Shinsuke Shimojo eds., 2010).

39. See Deidre L. Reis et al., *Emotional Intelligence Predicts Individual Differences in Social Exchange Reasoning*, 35 *NEUROIMAGE* 1385, 1385 (2007) (higher emotional intelligence predicted faster social exchange reasoning and finding that emotional intelligence is mediated in part by brain mechanisms supporting social reasoning). Reasoning about social interactions engages the brain differently than reasoning about other non-social events. See Valerie E. Stone et al., *Selective Impairment of Reasoning About Social Exchange in a Patient with Bilateral Limbic System Damage*, 17 *PROC. NAT’L ACAD. SCI.* 11531, 11531 (2002).

40. Alan G. Sanfey, *Social Decision-Making: Insights from Game Theory and Neuroscience*, 318 *SCI.* 598, 600 (2007).

41. Reid Hastie, *Emotions in Jurors’ Decisions*, 66 *BROOK. L. REV.* 991, 999 (2001) (“The roles of emotions in decision-making processes have been neglected throughout the history of scientific research on judgment and decision-making. Emotions have always been a puzzling phenomenon to scientists. There is still no clear scientific consensus on definitions of basic terms, and emotional reactions are one of the most mysterious aspects of everyday life.”); Kevin N. Ochsner & James J. Gross, *The Cognitive Control of Emotion*, 9 *TRENDS COGNITIVE SCI.* 242, 242 (2005).

42. See ANTONIO DAMASIO, *LOOKING FOR SPINOZA: JOY, SORROW, AND THE FEELING BRAIN* 5 (2003).

of hot and cold. This captures the idea of valence, which is the term used to describe whether an emotion is *pleasant or unpleasant*.⁴³ While this simple analogy allows us to characterize emotion more fully than the rules of evidence do, it still is lacking. On this two-dimensional scale of valence and arousal, how would we differentiate between stress, anger, fear, disgust, disappointment and shame? Or surprise, joy, love, pride or sympathy?

In addition to valence and arousal, emotions can be characterized by the actions and goals that they motivate. When we experience an emotion such as fear, stress, or disgust, it can move us to withdraw from a situation, while happiness and surprise may motivate us to approach. This in turn can affect how our brain perceives, responds to, and learns from emotionally powerful events. Further, we might classify emotions based upon whether they are socially-dependent, such as shame, or whether they can be experienced outside of a socially interactive setting. We might also classify emotions as being evolutionarily preserved, such as the fight-or-flight fear we may feel in response to being chased, or the modern empathy triggered at the sight of a suffering dog.

Despite this complex taxonomy, the law often uses the word “emotion” without clarifying precisely what this captures. Even neuroscientists have conflicting definitions when it comes down to how emotions are generated and whether they are responsive to, or driving, our actions.⁴⁴ With so many things being called emotion, “fear, guilt, shame, melancholy, and so on . . . it is dubious that they share anything but a family resemblance.”⁴⁵

Even if we isolate one emotion, stress for example, we can see that our emotional vocabulary is deplorably over-simplified. Complex emo-

43. Michael Platt et al., *Neuronal Correlates of Decision Making*, in BETTER THAN CONSCIOUS? DECISION MAKING, THE HUMAN MIND, AND IMPLICATIONS FOR INSTITUTIONS, *supra* note 1 at 125, 136. Functional imaging has demonstrated that unpleasant emotional stimuli is associated with increased BOLD intensities in the supplementary motor, anterior midcingulate, right dlPFC, occipito-temporal, inferior parietal and cerebellar cortices, with highly arousing emotions associated with increased BOLD intensities in the left thalamus, globus pallidus, caudate, parahippocampal gyrus, amygdala, premotor cortex, and cerebellar vermis. Pleasant emotions, on the other hand, resulted in relative increases in the BOLD response in the midbrain, ventral striatum, and caudate nucleus, all connected to a reward circuit. See Tiziano Colibazzi et al., *Neural Systems Subservient Valence and Arousal During the Experience of Induced Emotions*, 10 EMOTION 377, 377 (2010). See MICHAEL S. GAZZANIGA, RICHARD B. IVRY, & GEORGE R. MANGUN, COGNITIVE NEUROSCIENCE: THE BIOLOGY OF THE MIND, at 366-67 (2009).

44. Many argue that emotions help us learn the value of events, either by triggering physiological responses, or being the responses themselves. Others view emotions as too complicated to be purely visceral. See LEDOUX, *supra* note 18, at 23; EDMUND T. ROLLS, EMOTION EXPLAINED 11 (2005); Todd E. Pettys, *The Emotional Juror*, 76 FORDHAM L. REV. 1609, 1615-16 (2007) (“[A]n emotion is accompanied by physiological changes, such as an increased heartbeat, a jittery feeling in one’s stomach, tightness in certain muscles, or changes in one’s hormonal levels. It is these physiological changes that often alert us to an emotion’s arrival, signaling that we have rapidly appraised something in our environment in a particular way.”).

45. CRAIG DELANCEY, PASSIONATE ENGINES: WHAT EMOTIONS REVEAL ABOUT THE MIND AND ARTIFICIAL INTELLIGENCE 3 (2002).

tions, such as disgust or anxiety, play a different role on our decision-making depending on how long they manifest.⁴⁶ Short-term exposure to anxiety may assist in perception and memory, but after lengthy bouts, anxiety can make these same processes break down. Disgust is also quite complex. Despite its ostensible role in both helping us avoid harms and moderate social mores, “the fact that subjects across a variety of experiments report feelings of disgust when considering both feces and a heinous crime does not necessarily indicate that the same mechanisms mediate these reactions.”⁴⁷ When we peel back a layer and look just at individual emotions such as anxiety or disgust, we see that their biological processes and behavioral effects vary.

Relegating emotion to a unitary fog-like state is made possible by ignoring such nuances and treating emotions as monolithic.⁴⁸ But emotion actually refers to a wide range of states that might be unrelated mentally, socially, and biologically. Despite this complexity, case law and annotations to the rules of evidence often uses the word “emotion” without justifying what it means in any given scenario and, more importantly, why it is legally relevant. We need a new vocabulary to reflect the different impacts and values of emotional processes on decision-making. But, for now, we are stuck with what we have.

On account of this, I use the common understanding of these words here. Affect and emotion are used interchangeably, even though in principle, affect is much broader than emotion as it includes things like preferences, desires, and moods.⁴⁹ When I use the term reasoning or cognition, I am calling upon the traditional definition of these, meaning such functions as attention, perception, memory, and analysis. This Article does not need to espouse particularly rigid definitions of emotion and reason. Rather, by contrasting the many possible cognitive science definitions with the fairly unitary construct of emotion in our legal system, we can reveal a way for our interpretations to become more nuanced.

46. Anxiety has thus been described as an emotion operating on a “U” shaped curve, where in controlled doses it can increase our vigilance, but over time it clouds our perspective.

47. Jana Schaich Borg, Debra Lieberman & Kent A. Kiehl, *Infection, Incest, and Iniquity: Investigating the Neural Correlates of Disgust and Morality*, 20 J. COGNITIVE NEUROSCIENCE 1529, 1529, (2008). The authors went on to state:

[T]he data presented here show that although incest acts and pathogen acts are rated as equally disgusting, incest acts are rated as more immoral and elicit dramatically more hemodynamic activity than pathogen acts. These data, combined with data from other recent multimodal disgust studies, suggest that disgust is likely best conceived of as a set of heterogeneous responses overlaying a unified psychological and neurological response

....
Id. at 1543.

48. Dan M. Kahan & Martha C. Nussbaum, *Two Conceptions of Emotion in Criminal Law*, 96 COLUM. L. REV. 269, 272 (1996) (“[T]he law has treated emotions in several different and conflicting ways.”).

49. Aaron Sloman, Ron Chrisley & Matthias Scheutz, *The Architectural Basis of Affective States and Processes*, in WHO NEEDS EMOTIONS? THE BRAIN MEETS THE ROBOT 203, 208 (Jean-Marc Fellous & Michael A. Arbib eds., 2005).

Even so, by referring to the processes as separate in order to explain how they are overlapping, I am in some ways furthering the false dichotomy here. However, this appears to be a less confusing framework than coming up with new names to trace old words and concepts.

Our present understanding of human decision-making, drawn from the cognitive sciences, imparts a powerful critique of much of our basic evidence law. This indeed could be the subject of an entire book. It is my hope that through a patchwork of related articles, each pushing for new consideration of evidence law in light of modern cognitive science rather than invalid folk psychology, we can collectively engage rulemaking bodies in the effort to improve our rules and practices.⁵⁰ And if improvement is too ambitious, at the very least we can push rulemaking bodies, such as the advisory committee to the FRE or the evidence section of the Practicing Law Institute, to clarify the motives for adopting particular rules. If nothing revolutionary is to happen yet, it would even be fruitful to inspire researchers to develop models of social decision-making and tasks that are more ecologically valid for mock jurors and real judges. In the conclusion, I will suggest a few ways this could happen.

II. WHERE IN THE LAW DO WE SEE AFFECTIVE BLINDNESS?

Simplifying and denigrating emotion, and placing it at odds with reason, is particularly apparent in legal rules related to trial. Here it is said, "Emotion is unalterably opposed to Reason and thus to Justice itself."⁵¹ As Terry Maroney has chronicled in her spot-on work questioning judicial dispassion, "[I]nsistence on emotionless judging—that is, on judicial dispassion—is a cultural script of unusual longevity and potency."⁵² Maroney argues that the desire for judicial dispassion has stayed on in our legal analysis despite being obviously incorrect because it

50. For a discussion on the bleak prospects for reform, see Park & Saks, *supra* note 7, at 954 ("The mildly radical reform attempted in Edmund Morgan's *Model Code of Evidence* failed completely, and today's judges and lawyers seem generally satisfied with the Federal Rules of Evidence, which were largely a codification of common-law rules extant in the mid-twentieth century. Finally, the confusion that existed in Wigmore's time and before has been largely tamed by the Federal Rules, so there is no enthusiasm for ground-breaking reclassifications." (footnotes omitted)).

51. Samuel H. Pillsbury, *Emotional Justice: Moralizing the Passions of Criminal Punishment*, 74 CORNELL L. REV. 655, 655 (1989) ("[C]ourts have urged that the more a legal issue might provoke popular rage, that hallmark of the lynch mob, the harder courts must work to insulate the legal decision from emotive influence.").

52. Maroney, *supra* note 31, at 630–31 ("Thomas Hobbes declared in the mid-1600s that the ideal judge is 'divested of all fear[, anger, hatred, love, and compassion.]' In 2009, more than three centuries later, then-Judge Sonia Sotomayor testified at her Supreme Court confirmation hearing that judges 'apply law to facts. We don't apply feelings to facts.' The idea that emotion might influence judging has been characterized as 'radioactive.'" (alteration in original) (footnotes omitted)).

adopts an attractive, yet coherent view of emotion as “irrational, undisciplined, and idiosyncratic.”⁵³

Most modern evidentiary principles reflect the concern that jurors will make illogical or biased inferences.⁵⁴ Reining in the biased jury is one of the chief historical and modern justifications for evidence law.⁵⁵ As far back as the eighteenth century, English courts began establishing formal rules of evidence to limit the admissibility of information that might trigger irrational inferences by the malleable jury. This continued into the late twentieth century, when the FRE were adopted.⁵⁶ Reid Hastie points out our conflicted view of the juror, as embodied in the FRE: “There is an apparent contradiction between the conception of the ideal juror as a logical reasoning machine and also as a source of community attitudes, sentiments, and moral precepts.”⁵⁷ We see this as the rules desire both an unfettered common voice of the people and a highly steered and controlled decision-making process.

Before extrapolating this too far, however, it is important to observe that we are not as committed to this false dichotomy as we might think. In certain corners of our legal tapestry we actively encourage emotional processes and evidence, such as when defendants present mitigation evidence or when attorneys present their opening arguments.⁵⁸ In mitigation hearings, this may be because we call upon emotional processes when we think our *status quo* may not be fair, particularly for people deemed to be marginalized or vulnerable. Perhaps emotions are encouraged to “rock our cognitive boats” in furtherance of justice. But even in this situation,

53. *Id.* at 632 (citing Gerald L. Clore, *For Love or Money: Some Emotional Foundations of Rationality*, 80 CHI.-KENT L. REV. 1151, 1151 (2005) (“A long tradition, stretching from classical philosophy to the present, views passion as the enemy of reason.”)).

54. The three most commonly cited justifications for any evidence rules are (1) distrust of the jury, (2) practical considerations of time and efficiency, and (3) the promotion of certain social norms by controlling what juries may rely upon. See DAVID P. LEONARD & VICTOR J. GOLD, *EVIDENCE: A STRUCTURED APPROACH* 2–3 (2d ed. 2008).

55. Joseph Sanders, *Expert Admissibility Symposium: Reliability Standards-Too High, Too Low, or Just Right?: The Merits of the Paternalistic Justification for Restrictions on the Admissibility of Expert Evidence*, 33 SETON HALL L. REV. 881, 883–84 (2003); see generally Richard D. Friedman, *Minimizing the Jury Over-Valuation Concern*, 2003 MICH. ST. L. REV. 955 (2003).

56. Glen Weissenberger, *Evidence Myopia: The Failure to See the Federal Rules of Evidence as a Codification of the Common Law*, 40 WM. & MARY L. REV. 1539, 1570 (1999) (“By modeling the text of the Federal Rules after the Model Code and the Uniform Rules, the Advisory Committee embraced what can be placed in historical context as a codification of existing principles and not a statutory displacement of preexisting evidentiary doctrines.”).

57. Hastie, *supra* note 41, at 991–92 (“Robert Solomon noted this discrepancy when he commented that ‘the idea that justice requires emotional detachment, a kind of purity suited ultimately to angels, ideal observers, and the original founders of society, has blinded us to the fact that justice arises from and requires such feelings as resentment.’” (quoting ROBERT D. SOLOMON, *A PASSION FOR JUSTICE* 34 (1990))).

58. “[A]ppeals to the sympathy or passions of the jury are misconduct at the guilt phase of a trial,” but may be invoked for mitigation. *People v. Pensinger*, 805 P.2d 899, 918 (Cal. 1991).

our implicit biases that seem rational might actually be deeply engrained and reinforced by unobvious emotion.⁵⁹

One final caveat about the treatment of emotion in litigation: regardless of how emotion is formally treated in our rules, to be sure, emotion is *the currency* of trial.⁶⁰ Crafty attorneys use emotion to their advantage to engender empathy for their client, and anger or fear toward the other side. Indeed, the value of story-telling and emotion was recognized in *Old Chief v. United States*.⁶¹ In that case, the Supreme Court instructed us that probative value is measured in part by its ability “to influence jurors’ hearts as well as their minds, even in ways that are not strictly logical, and even if the evidence has no rational tendency to prove any historical fact that is disputed at trial.”⁶² In *Old Chief*, despite explaining in dicta that litigants may seek to do more than present factual evidence but also to “tell a colorful story with descriptive richness,” the character evidence at issue was not admitted.⁶³ This dictum would appear to encourage something like emotional and personal testimony, which is in contrast to the many rules and instructions that discourage it.⁶⁴ And yet, as soon as “colorful” turns into “emotional,” courts have and may continue to abandon this line of thinking. Colorful imagery and story-telling are bound to awaken the emotions of any healthy juror, and yet the former is acceptable when the latter is often explicitly not. Imagine how frustrating it would be to sit on a jury where passionate testimony and colorful evidence were presented throughout the trial, and then to be told at the end that they were supposed to set aside any emotions that this evidence may have generated?

There is thus a practical gulf. Why is there such a gap between the rhetoric of stated instructions and the common understanding of the theatre of jury trials? Why do we understand that trials run on emotions, but

59. Elizabeth A. Phelps et al., *Performance on Indirect Measures of Race Evaluation Predicts Amygdala Activation*, 12 J. COGNITIVE NEUROSCIENCE 729, 730 (2000).

60. Though, by recent accounts, the appeals to emotion ought to be subtle. Raymond J. Brassard, *What Jurors Say About Lawyers*, 47 BOS. B.J. 8, 9 (2003); Valerie P. Hans & Krista Sweigart, *Jurors’ Views of Civil Lawyers: Implications for Courtroom Communication*, 68 IND. L.J. 1297, 1318 (1993); Donald M. Peters, *Basics of Oral Argument*, 32 ARIZ. ATT’Y 18, 29 (1995).

61. 519 U.S. 172, 180 (1997). Many, mostly Southern states, have declined to follow *Old Chief v. United States*.

62. James Joseph Duane, “Screw Your Courage to the Sticking-Place”: *The Roles of Evidence, Stipulations, and Jury Instructions in Criminal Verdicts*, 49 HASTINGS L.J. 463, 467–68 (1998).

63. Leubsdorf, *supra* note 22, at 1226 (“Only such a story will ‘sustain the willingness of jurors to draw the inferences’ of guilt or innocence and ‘to implicate the law’s moral underpinnings and a juror’s obligation to sit in judgment’ as well as meeting ‘jurors’ expectations about what proper proof should be.” (quoting *Old Chief*, 519 U.S. at 187–88)).

64. See, e.g., *United States v. Barlin*, 686 F.2d 81, 93 (2d Cir. 1982) (holding that prosecutor’s comments appealing to the jury’s passion and emotion were “designed to divert rather than focus the jury upon the evidence and [did] not belong in summation”); *Freeman v. Trombley*, 744 F. Supp. 2d 697, 725 (E.D. Mich. 2010) (“Inflammatory remarks are improper because they ‘invoke emotions which may cloud the jury’s determination of [the defendant’s] guilt.’” (alteration in original) (citations omitted)).

certain emotions are to be kept in a locked box, only to be invited in occasionally in the interest of social justice? I posit that we have an incoherent view of emotion because we are using a concept and word to simultaneously refer to many different things, without being more precise about which aspects of “emotion” are doing the real theoretical work. When we do this, we are forcing simple boundaries on something quite complex. We intuitively understand that emotions are not only helpful in some situations, but they can be impossible to dial down. And of course some judges, being humans after all, get this as well.⁶⁵ But the explicit instructions, and the false dichotomy between reason and emotion on which they rest, persist in evidence practice.

In order to make the point that this false dichotomy is simultaneously reflected in our evidence law and also empirically wrong, I will address how emotion is treated in (a) the use of limiting instructions, (b) the exclusion of prejudicial evidence, (c) credibility assessments, (d) sentencing and damages instructions, (e) instructions related to the “heat of passion” theory of voluntary manslaughter, and (f) the excited utterance hearsay exception. I will demonstrate that while the text of the rules may be benign, the way they are interpreted reflects confusion over the role played by both subtle and intense emotion.⁶⁶ The affective blindness of evidence law is woefully out of step with our current understanding of the way affect and reason are anatomically and functionally interconnected in the brain.⁶⁷ Specifically, through reliance on cognitive science, I will demonstrate that the following evidentiary principles are incorrect in related ways:

- Emotional and rational processes can neatly be divided, and by attending to our emotions, we can—and should—use our cognitive faculties to squash them.
- Emotional evidence and emotional processes always render decisions that are less rational, more prejudicial, and therefore less accurate.
- Emotion testimony distracts us and makes it hard for us to pay attention or remember events.

65. See *People v. Dykes*, 209 P.3d 1, 50 (Cal. 2009) (“Although emotion ‘must not reign over reason,’ it ‘need not, indeed, cannot, be entirely excluded from the jury’s moral assessment.’” (quoting *People v. Leonard*, 157 P.3d 973, 1009 (Cal. 2007)) (internal quotation marks omitted)).

66. It is worth noting the obvious, which is that not all of our folk assumptions have been incorrect. But many of them have been, including the ability of the oath to cure mendacity along with the idea that someone who is dying would not “meet their maker with a lie on their lips.” These present examples of evidence practices that few believe to be true, illustrating the many fictions we comfortably endorse in evidence practice.

67. Ralph Adolphs, *Cognitive Neuroscience of Human Social Behaviour*, 4 NATURE REVIEWS NEUROSCIENCE 165, 166 (2003). Interestingly, when it comes to the “self,” some researchers have seen anatomical uncoupling between emotion and reason. See J.M. Moran et al., *Neuroanatomical Evidence for Distinct Cognitive and Affective Components of Self*, 18 J. COGNITIVE NEUROSCIENCE 1586, 1586 (2006).

- Credibility assessments do not require empathy.
- Emotion should not and cannot be involved in moral judgment and reasoning related to sentencing.

III. AFFECTIVE BLINDNESS OF EVIDENTIARY PRACTICES

This next section will walk through each of the evidentiary practices identified above, and explain why the folk psychology on which they rest is invalidated by modern cognitive sciences. We will begin with the use of limiting instructions, and the difficulty jurors face when attempting to use evidence only for its non-emotional content. Then, I will discuss how FRE 403 reflects the false dichotomy between emotion and reason. Next, I will reveal how most damages and sentencing instructions both assume emotion may be subjugated by reason, but also that good moral judgments can arise in an emotional vacuum. Subsequently, I will discuss the “heat of passion” jury instruction, describing how it also embodies a view of all emotion as corrupting of both reason and, without extending it to its logical conclusion, intent. I will then discuss a counter-example of when we imbue emotion with too much power (albeit still the power to corrupt our cognitive faculties). That is, when the excited utterance hearsay rule is used to deem testimony more trustworthy when uttered during stress or excitement. Finally, I will discuss the more general category of jurors’ credibility assessments, and why we might be blind to the role of emotion this process.

A. The Use of Limiting Instructions: Using Evidence for Rational, but Not for Emotional, Purposes

We see the false dichotomy rear its head in the application of many evidentiary rules. We will first address FRE 105, which appears to have nothing to do with emotion on its face. The rule demurely says: “If the court admits evidence that is admissible . . . for a purpose—but not . . . for another purpose—the court, on timely request must restrict the evidence to its proper scope and instruct the jury accordingly.”⁶⁸ This is a very practical rule. Judges could not possibly order a new trial every time evidence had the potential to be used for an improper purpose. Given the way the probative/prejudicial balancing test favors admission, we can use FRE 105 to restrict jurors’ use of evidence to its non-prejudicial use. This non-prejudicial use is often impeachment.

Reliance on FRE 105 and its state-law counterparts is ubiquitous. The rule is commonly employed to cabin off emotional uses of evidence,

68. FED. R. EVID. 105. Most states have a similar rule to this.

such as crime scene photographs or victim impact statements, and guard against a mistrial.⁶⁹ Consider the following representative examples:

- In a tax evasion case, the defendant argued that the prosecution improperly appealed to the jury's emotions by reminding them that the date of their deliberation was April 15th, the deadline for paying taxes. The court stated:

[A]sk[ing] the jury . . . to consider emotions rather than evidence—“can be cured with proper instructions, and ‘juries are presumed to follow their instructions.’” . . . [E]ven if the comment played to the emotions of the jurors as taxpayers, the Court issued a curative instruction as to the comment as well as other instructions—including after the Government's rebuttal-summation—which focused the jurors generally to their task and responsibility.⁷⁰

- Where gruesome photos were introduced, jurors were given a limiting instruction to rely on them “dispassionately.”⁷¹

- “[A]fter defendant's vulgar outburst, the judge gave an immediate curative instruction, telling the jurors that sometimes emotions run high and that their verdict must be based on the [non-emotional] evidence alone.”⁷²

- Defendant was convicted of “risk of injury to a child.” During his rebuttal argument, the prosecutor displayed and briefly referred to a medium sized McDonald's cup and a teddy bear. The child's father worked at McDonalds, so this prop was employed to support the prosecution's argument that the parents of the injured child were simple and hardworking. The teddy bear was to remind the jury that the victim was eight years old (the victim held the teddy bear while testifying as well). Defendant moved for a mistrial. The court denied the defendant's motion, stating that “irreparable damage had not been done” because the court properly issued a curative instruction, stating that:

[P]rops[] were displayed to you. They are not evidence . . . and, therefore, are not to be considered by you in any way in your consideration of the facts or in your deliberations. You must base your ver-

69. *Allen v. State*, 923 P.2d 613, 619 (Okla. Crim. App. 1996) (“As evidenced by the acceptance of victim impact evidence at sentencing, it is not sympathy for the victim *per se*, but sympathy that overcomes reason which is constitutionally unacceptable.”), *vacated*, *Allen v. Oklahoma*, 520 U.S. 1195 (1997).

70. *United States v. Holland*, No. 3:09cr139 (JBA), 2010 WL 2976934, at *5 (D. Conn. July 22, 2010) (quoting *Zafiro v. United States*, 506 U.S. 534, 540–41 (1993)).

71. *United States v. Treas-Wilson*, 3 F.3d 1406, 1410 (10th Cir. 1993); *see also* *People v. Kimble*, 289 A.D.2d 1062, 1063 (N.Y. App. Div. 2001) (“[H]e was [not] deprived of a fair trial based on the jury's viewing of the autopsy videotape . . . [I]t was inadvertent, and the videotape was not presented by the People for the purpose of arousing the emotions of the jury.” (citation omitted)).

72. *State v. Rodriguez*, No. 99-01-0102, 2010 WL 4226170, at *10 (N.J. Super. Ct. App. Div. Oct. 27, 2010) (not deciding issue of curative instruction on the merits, as procedurally barred).

dict on the evidence presented and the law as instructed, and not on the basis of any emotions or sympathy.⁷³

There is well-documented doubt that jurors can follow curative limiting instructions to remove prejudice.⁷⁴ Judge Learned Hand called limiting instructions a legal “placebo” as they require “a mental gymnastic which is beyond, not only their powers, but anybody’s else.”⁷⁵ But these are general problems with the ability to ignore evidence more broadly. Here, I am interested in the more specific problem of cabining off emotion-evoking evidence, or the jurors own emotional responses to them. As an initial matter, we may not want to instruct jurors to dial down their emotional processes, but what’s more, in some cases we may not be able to even if we tried.

There are instances when something other than emotion may be moderating the jury’s decision-making, even though the “bias” is pinned on the emotional tenor of the evidence. Many of us are not aware of our

73. *State v. Tricarico*, 994 A.2d 323, 325, 328 (Conn. App. Ct. 2010); *see also* *United States v. Gomez*, 617 F.3d 88, 96 (2d Cir. 2010); *United States v. Delli Paoli*, 229 F.2d 319, 321 (2d Cir. 1956); *Nash v. United States*, 54 F.2d 1006, 1007 (2d Cir. 1932); *United States v. Johnson*, 713 F. Supp. 2d 595, 638 (E.D. La 2010); *State v. Yates*, 168 P.3d 359, 398 (Wash. 2007); Nancy Steblay et al., *The Impact on Juror Verdicts of Judicial Instruction to Disregard Inadmissible Evidence: A Meta-Analysis*, 30 L. & HUM. BEHAV. 469, 469 (2006) (“The effect on juror verdicts of judicial instructions to disregard inadmissible evidence was evaluated using meta-analysis. One hundred seventy-five hypothesis tests from 48 studies with a combined 8,474 participants were examined. Results revealed that inadmissible evidence (IE) has a reliable effect on verdicts consistent with the content of the IE. Judicial instruction to ignore the inadmissible evidence does not effectively eliminate IE impact. However, if judges provide a rationale for a ruling of inadmissibility, juror compliance may be increased. Contested evidence ruled admissible accentuates that information, resulting in a significant impact on verdicts.”); J. Alexander Tanford, *The Law and Psychology of Jury Instructions*, 69 NEB. L. REV. 71, 97 (1990).

74. Lisa Eichhorn, *Social Science Findings and the Jury’s Ability to Disregard Evidence Under the Federal Rules of Evidence*, 52 L. & CONTEMP. PROBS. 341, 345 (1989); Roselle L. Wisler & Michael J. Saks, *On the Inefficacy of Limiting Instructions: When Jurors Use Prior Conviction Evidence to Decide on Guilt*, 9 L. & HUM. BEHAV. 37, 37 (1985) (“Conviction rates did vary by prior record, however, with the highest conviction rate occurring when the prior conviction was the same as the present charge and the lowest conviction rate occurring in the no-prior-conviction condition. Defendants with a previous conviction for perjury or a dissimilar crime were convicted at an intermediate rate. We concluded that the risk of prejudice to the defense under existing policy is greater than the unrealized potential benefit to the prosecution.”); *see also* RICHARD A. POSNER, *FRONTIERS OF LEGAL THEORY* 384 (2001) (“Empirical evidence as well as common sense suggests that courts greatly exaggerate the efficacy of limiting instructions.”); Joel D. Lieberman & Jamie Arndt, *Understanding the Limits of the Limiting Instructions: Social Psychological Explanations for the Failures of Instructions to Disregard Pretrial Publicity and Other Inadmissible Evidence*, 6 PSYCH., PUB. POL’Y, & L. 677, 677 (2000); Deidre M. Smith, *The Disordered and Discredited Plaintiff: Psychiatric Evidence in Civil Litigation*, 31 CARDOZO L. REV. 749, 819 (2010) (discussing how distinctions between appropriate and non-appropriate uses of evidence are likely to be “utterly meaningless in the minds of jurors” and emotionally arousing testimony may be particularly “immune to such limiting instructions”); Sarah Tanford & Michele Cox, *The Effects of Impeachment Evidence and Limiting Instructions on Individual and Group Decision Making*, 12 L. & HUM. BEHAV. 477, 477 (1988). *But see* Theodore Eisenberg & Valerie P. Hans, *Taking a Stand on Taking the Stand: The Effect of a Prior Criminal Record on the Decision to Testify and on Trial Outcomes*, 94 CORNELL L. REV. 1353, 1358–59 (2009) (citing a study by British researchers A.P. Sealy and W.R. Cornish in which mock jurors were able to take account of an instruction to disregard similar convictions as evidence of criminal propensity).

75. *Nash*, 54 F.2d at 1007.

complex emotional processes. Thus, we sometimes have difficulty describing the what, why, and how of our emotions, even as we are physiologically experiencing them. This is likely exacerbated with more subtle emotions such as shame, pride, or jealousy. Empirically speaking, therefore, limiting instructions related to emotion-evoking evidence are either misguided or a waste of time.⁷⁶ Because emotions are so salient, and yet are sometimes subconscious, it might be more difficult to suppress emotion-evoking evidence than other types of data.

The scant mock jury literature on *emotional* evidence and curative instructions is unsatisfactory as it fails to appreciate these points. Some of it further fails to acknowledge the relationship of probative value to prejudicial effect. These studies assume that evidence is either prejudicial or probative, when it can be degrees of both. Put another way, evidence can help make a fact more likely true or false, while simultaneously prejudicing the jury against the defendant. Further, this research often fails to recognize that the “affective” evidence may have different probative value.⁷⁷ Perhaps an example of this will help.

One study compared the effect of the emotional testimony of a cop describing how the defendant had been accused of “hacking up a woman” with the neutral control testimony that the defendant had been accused of “assault with a deadly weapon.” The two statements have different probative value, and thus if they produce different results, it cannot be said to be due to the emotional nature of the testimony. In one case, the testimony may render the assault more heinous and, therefore, more aggravating. The descriptive content of the emotional evidence actually says something different about the facts of the crime. With the latter stimulus, the mock juror may conjure up an image of someone getting hit once on the head with the handle of a gun. Further, when subjects heightened the verdict after hearing a victim impact statement, this was equated with prejudice, even though it was not clear from the methodology that something else may have been moderating the change.⁷⁸ Subjects may have intensified the verdict because they heard more aggravating information or the aggravating information was given more weight because it was heard more recently.

The papers on the use of limiting instructions for emotionally-evocative evidence unfortunately use emotions as shorthand for bias and

76. Of course, as mentioned, if the goal is merely to prevent waste and a mistrial, the instructions are doing their job swimmingly.

77. Jessica M. Salerno & Bette L. Bottoms, *Emotional Evidence and Jurors' Judgments: The Promise of Neuroscience for Informing Psychology and Law*, 27 BEHAV. SCI. & L. 273, 283 (2009) (“Taken together, the literature on the effect of gruesome photographs and victim impact statements demonstrates that, generally, mock jurors’ judgments are more punitive when they consider highly emotional evidence . . .”). This is true except for when it is defense information that may be mitigating—only example given of child abuse and increased attributed and hypothesized increased anger. *Id.* at 285.

78. *Id.* at 279.

inherent prejudice. One research team argued against an instruction “that cautions against emotional arousal in the face of highly inflammatory evidence” because it “raises the concern that jurors will perceive their emotional responses to the evidence as a valid source of information.”⁷⁹ Thus, while nobly attempt to improve the way jurors respond to instructions, they still presume that recognizing their emotions as a valid source of data would be bad. In the same study, when the emotion-evoking evidence was not found to always bias, researchers went to lengths to preserve the theory of emotions as biasing, even when their own findings suggest its nuanced role in decision-making:

[G]ruesome photographs increased victim compassion . . . but . . . gruesome photographs did not significantly increase defendant negativity or decrease defendant compassion compared to neutral evidence. The likely reason is that the emotions aroused by gruesome evidence were more readily associated with the victim and the crime but were less clearly associated with a defendant whose culpability was in doubt.⁸⁰

Of course, to be charitable to the researchers, some of these studies were performed when we knew much less about affective neuroscience.

Another problem with much of the research on the use of limiting instructions for emotional evidence is that the studies rely purely on self-reports of the mock jurors’ emotions.⁸¹ This is despite the fact that we do not have conscious access to many effects of emotion on cognition or our physiological response.⁸² Better research into the subconscious role of emotion requires measuring physiological correlates of emotion, such as heart rate, skin temperature, sweating, and the like.

Much of the practical and scholarly writing on the use of limiting instructions to suppress emotional processes reveals a dual process mod-

79. Rachel K. Cush & Jane Goodman-Delahunty, *The Influence of Limiting Instructions on Processing and Judgments of Emotionally Evocative Evidence*, 13 PSYCHIATRY, PSYCHOL. & L. 110, 113 (2006) (citing Gerald L. Clore, *Cognitive Phenomenology: Feelings and the Construction of Judgment*, in THE CONSTRUCTION OF SOCIAL JUDGMENTS 133 (Leonard L. Martin & Abraham Tesser eds., 1992); R.B. Zajonc, *Feeling and Thinking: Preferences Need No Inferences*, 35 AM. PSYCHOLOGIST 151 (1980)).

80. Cush & Goodman-Delahunty, *supra* note 79, at 117–119 (finding that mock jurors receiving limiting instructions pre-closing were actually *more likely* to view the evidence as less incriminating when they saw a gruesome photograph than if they viewed a neutral photograph, thus refuting their premise that emotion is always biasing in one direction).

81. *Id.* at 118 (relying on self-monitoring of emotional bias, with 86% of respondents saying that they “did not rely on emotion when making a culpability decision”); Salerno & Bottoms, *supra* note 77, at 277–78 (acknowledging that emotion can have the greatest effect when we are unaware of it, but then relies almost exclusively on self-reports of reliance on emotions).

82. Kari Edwards & Tamara S. Bryan, *Judgmental Biases Produced by Instructions to Disregard: The (Paradoxical) Case of Emotional Information*, 23 PERSONALITY & SOC. PSYCHOL. BULL. 849, 850–51 (1997).

el of the brain where emotion is wholly separate from cognitive processes:⁸³

The concern that emotion is adversary to the reasoning process is voiced in many contemporary social psychological models of emotion and decision-making. . . . [S]trong negative emotion biases the information-processing and decision-making processes by (a) initiating a biased information search and skewed interpretation of evidence to be consistent with blaming a target, (b) influencing judgments in a mood-congruent manner directly . . . and indirectly . . . and/or (c) leading to visceral intuitive judgments⁸⁴

According to the dual process model, emotion depletes attention and processing capacity and increases heuristic processing (i.e., deciding with your gut). Some proponents of this model posit that anger specifically results in shallower processing due to the feeling of certainty that it engenders. In order to remove this “mental contamination” of emotion, some psychologists argue that we need to simultaneously do the following: (a) be aware of the unwanted processing and the magnitude and direction of the bias, (b) be motivated to correct it, and (c) possess the ability to exert mental control to adjust our responses.⁸⁵ No surprise—psychologists are pessimistic about our ability to do these things. This is especially true when our emotional reactions are implicit and subconscious. However, not all emotional processes are so subversive, and a growing literature suggests that emotions are not always “fast” and “automatic” but rather can be the result of modulation, attentional control, and reappraisal.⁸⁶ This means that there may be opportunities for thoughtful instructions reducing the effects of implicit, and unwanted, juror biases.

The complexity of emotional processes may be why some researchers do not find differences in our ability to suppress emotional evidence compared to non-emotional evidence, while others find the opposite. The emotion being elicited, and the ostensible probative value of the two statements, may not be similar enough to draw conclusions about their effect on our decision-making.⁸⁷ But even if we assume for a moment that an individual were cognizant of the biasing influence of emotion on

83. Salerno & Bottoms, *supra* note 77, at 283 (“In other words, does emotional evidence influence jurors’ judgments through an effortful, rational deliberative process, or does emotional evidence cause emotion-driven reactions and processes that bypass effortful, deliberative, cognitive processing?”).

84. *Id.* at 284 (citations omitted).

85. See generally Thomas D. Wilson & Nancy Brekke, *Mental Contamination and Mental Correction: Unwanted Influences on Judgments and Evaluations*, 116 PSYCHOL. BULL. 117 (1994).

86. K.S. Blair et al., *Modulation of Emotion by Cognition and Cognition by Emotion*, 35 NEUROIMAGE 430, 437–38 (2007).

87. Anita E. Kelly & Jeffrey H. Kahn, *Effects of Suppression of Personal Intrusive Thoughts*, 66 J. PERSONALITY & SOC. PSYCHOL. 998, 999 (1994); see generally Lizabeth Roemer & Thomas D. Borkovec, *Effects of Suppressing Thoughts About Emotional Material*, 103 J. ABNORMAL PSYCHOL. 467 (1994).

his or her reasoning processes, there may still be a lack of motivation to correct for it.⁸⁸ Edwards and Bryan posit that because of the unique properties of emotionally charged material, observing a limiting instruction regarding it is particularly difficult and may lead to perverse outcomes—more attention paid to emotionally charged material rather than less.⁸⁹ Ironically, because of this, emotion could be “an even more powerful influence on judgments when it is forbidden than when it is allowed.”⁹⁰

B. Federal Rule of Evidence 403: Emotion=Undue Prejudice

The FRE simultaneously distrust jurors’ ability to ignore prejudicial information and then expect them to be quite capable of ignoring this evidence when given an explicit instruction to do so.⁹¹ The last section reviewing FRE 105 focused on the latter view. We will now investigate the former through FRE 403.

FRE 403 states that relevant evidence may be excluded if the probative value is substantially outweighed by its potential for prejudice.⁹² FRE 403 is sometimes referred to as the “general override,” and it applies to all types of unduly prejudicial evidence. Rule 403 is a balancing test: the evidence may be excluded only if such danger of unfair prejudice *substantially outweighs* its probative value. It is meant to remove wasteful, emotional, biasing, or confusing evidence from the court’s plate, and to focus on central, material matters. As all effective evidence is prejudicial to the party against whom it is offered, *undue* prejudice is given a more specific meaning by courts.⁹³

Once again, the actual text of the rule is agnostic to emotion. However, in practice, undue prejudice is said to occur when “the proffered evidence has a tendency to influence the outcome by improper means or if it appeals to the jury’s sympathies, arouses its sense of horror, provokes its instinct to punish or otherwise causes a jury to base its decision on something other than the established propositions in the case.”⁹⁴ This statement illustrates how “prejudice” has been defined by courts to refer to evidence that appeals too much to the jurors’ emotion rather than rea-

88. Cush & Goodman-Delahanty, *supra* note 79, at 112.

89. Edwards & Bryan, *supra* note 82, at 850.

90. For a discussion of how emotional information makes it harder to suppress our thoughts, see *id.* at 856–858.

91. For example, “the state may introduce evidence of a defendant’s prior convictions for the purpose of sentencing enhancement, or statements elicited from a defendant in violation of *Miranda v. Arizona*, for the purpose of impeachment, so long as the jury is instructed that such evidence may not be considered for the purpose of determining guilt.” *Gray v. Maryland*, 523 U.S. 185, 200 (1998) (Scalia, J., dissenting) (citing *Harris v. New York*, 401 U.S. 222 (1971); *Spencer v. Texas*, 385 U.S. 554 (1967)).

92. FED. R. EVID. 403.

93. *State v. Maurer*, 770 P.2d 981, 984 (Utah 1989) (“[Undue prejudice is] an undue tendency to suggest decision on an improper basis, commonly but not necessarily an emotional one, such as bias, sympathy, hatred, contempt, retribution or horror.”).

94. *State v. Franklin*, 677 N.W.2d 276, 294 (Wis. 2004) (quoting *State v. Davidson*, 613 N.W.2d 606, 623 (Wis. 2000)) (internal quotation marks omitted).

son, and situates emotional responses as peripheral, somehow not at all relevant to the case. Importantly, this sentiment is echoed in the Advisory Committee notes accompanying the proposed Rule 403, where the committee defined prejudice as an “undue tendency to suggest decision on an improper basis, commonly, though not necessarily, an emotional one.”⁹⁵ Many courts recite this mantra from the Advisory Committee notes without explaining meaningfully how it applies to a particular case.

Because the rules of evidence are only reviewed for abuse of discretion, and Rule 403 is itself a flexible rule, it comes as no surprise that there is a great degree of variety in the way the rule is applied. This discretion has been advocated as it promotes rationalism and efficiency.⁹⁶ Even so, one judge acknowledged how the rule is habitually *misapplied*, even on its own discretionary terms:

Although the exigencies of a trial will always limit the time for a careful analysis of evidentiary issues, both counsel and the court should try to avoid shorthand references to Rule 403 or to “unfair prejudice” in lieu of a brief but more complete explanation of the basis for exclusion pursuant to Rule 403.⁹⁷

In some ways, this problem generates the nucleus of this paper. The rule on its face may be appropriate and flexible. But in practice, it becomes shorthand to justify anything or nothing, with very thin legal reasoning. Thus, in practice, discretionary rules like 403 often work to exclude so-called “emotional” evidence and processes across-the-board.

Without interpretive assistance, the mantra of *emotion* being equated with *prejudice* is cut and pasted everywhere, expansively covering an

95. Fed. R. Evid. 403 advisory committee’s note (1972).

96. Michael H. Graham, *Relevance, Fed. R. Evid. 401, and the Exclusion of Relevant Evidence, Fed. R. Evid. 403: “Many Prayers Are Heard, Few Are Answered”*, 45 CRIM. L. BULL. 1080, 1084 (2009) (“[Discretionary power of FRE 403] is necessary to facilitate the ascertainment of truth and to keep the conduct of the trial within bounds.”).

97. *State v. Thurlow*, 712 A.2d 518, 522 (Me. 1998) (Lipez, J., concurring). To be sure, 403 analyses do tend to involve logical short-cuts and lack of engagement with the facts at hand. For an egregious example of this consider the redundant passage from the California federal case, *Green v. Baca*, 226 F.R.D. 624, 634 (C.D. Cal. 2005):

The court excludes evidence under Rule 403 if its probative value is substantially outweighed by the danger of unfair prejudice, or if it would lead to jury confusion. FED. R. EVID. 403. Evidence is unfairly prejudicial if it tends to suggest decision on an improper basis, particularly an emotional one. See *United States v. Allen*, 341 F.3d 870, 886 (9th Cir.2003) (“‘Unfair prejudice’ . . . means an undue tendency to suggest decision on an improper basis, commonly, though not necessarily, an emotional one.”); *Steger v. General Electric Co.*, 318 F.3d 1066, 1079 (11th Cir.2003) (quoting FED. R. EVID. 403 advisory committee’s notes) (“Evidence is . . . excludable if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury ‘Unfair prejudice’ . . . means an undue tendency to suggest decision on an improper basis, commonly, though not necessarily, an emotional one.”); *Stump v. Gates*, 211 F.3d 527, 534 (10th Cir.2000) (same).

While the evidence of other acts offered by plaintiff may be prejudicial to defendant insofar as it tends to suggest that he has maintained an unconstitutional policy, it will not be *unfairly* prejudicial.

infinite number of definitions for either term.⁹⁸ Of course not all courts shirk their interpretive duties when it comes to FRE 403. Many try to provide assistance in elucidating when and why emotional evidence is unduly prejudicial, as when it is so inflammatory that it diverts “the jury’s attention from the material issues in the trial.”⁹⁹ However, even this gloss represents a type of prejudice that is not unique to emotional evidence. Any evidence may be prejudicial if it distracts the jury from its charge or confuses relevant issues with irrelevant ones.

Texas has a different standard that considers whether the evidence “has the potential to impress the jury in some irrational but indelible way.”¹⁰⁰ This is initially more attractive than the emphasis on emotion. But in Texas, the switch to rationality is just another guise for the anti-emotion bias in evidence law. For example, one court recalled:

Counsel argues the photographs of the tattoos were of such graphic subject matter they would sway the jury in some irrational and emotional fashion. . . .

. . . The trial court must consider the “host of factors affecting probativeness . . . and balance those factors against the tendency, if any, that the photographs have to encourage resolution of material issues on an inappropriate emotional basis.”¹⁰¹

Here, emotion is categorized as “inappropriate” and “irrational.” Another Texas court justified the admission of photographs, stating that “there were valid reasons for each of the photographs to be admitted, and

98. Thin analysis of FRE 403 is not uncommon. See *United States v. Gamble*, 290 Fed. Appx. 592, 595 (4th Cir. 2008) (“We conclude that the videotape [of the defendant’s capture] did not pose a legitimate risk of arousing the emotions of the jurors to the point of creating a genuine danger that the case would be decided based upon their emotional reaction to it. Although the jury exhibited an interest in the footage, this interest, contrary to Gamble’s argument, does not indicate that the video’s probative value was outweighed by any prejudicial effect.”). There is no analysis of why the court decided that interest did not equal prejudice, other than the *ipse dixit* statement by the judge. See also *Kesterson v. Jarrett*, 704 S.E.2d 878, 885–86 (Ga. Ct. App. 2010) (“The [DVD] recording depicted, most significantly, the effort and cost associated with maintaining Kyla’s day-to-day existence and the emotional bond between mother and child. Because the record supports a finding that the probative value of the recording on the issues of liability and causation was slight and was substantially outweighed by the risk of prejudicing the jury with the emotional nature of the scenes depicted, the trial court did not abuse its discretion in excluding it.”); *People v. Raymond*, 938 N.E.2d 131, 162–64 (Ill. App. Ct. 2010); *State v. Francis*, 145 P.3d 48, 63–64 (Kan. 2006).

99. *United States v. Koebele*, No. CR 07-2015-MWB, 2008 WL 63293, at *3 (N.D. Iowa Jan. 3, 2008) (“It is not unrealistic to assume that some jurors will have such a negative view of anyone who views pornography that evidence that the defendant possessed pornography might be ‘so inflammatory on [its] face that it diverts the jury’s attention from the material issues in the trial.’” (alteration in original) (quoting *United States v. Adams*, 401 F.3d 886, 900 (8th Cir. 2005)) (internal quotation marks omitted)).

100. In this case, a motorist appeared drunk and had run through a red light. The state introduced results of his breathalyzer test that the cop obtained, which indicated he had been drinking. This was found not to encourage an irrational decision. See *State v. Mechler*, 153 S.W.3d 435, 440–41 (Tex. Crim. App. 2005).

101. *Hart v. State*, 173 S.W.3d 131, 148–49 (Tex. App. 2005) (quoting *Ladd v. State*, 3 S.W.3d 547, 568 (Tex. Crim. App. 1999)); see also *Parson v. State*, 193 S.W.3d 116, 128 (Tex. App. 2006).

none were offered simply to appeal to the jury's emotion to render an irrational verdict."¹⁰² Thus, as applied in Texas, we see that the touchstone for prejudice is irrationality, which is triggered by an appeal to the jury's emotions.¹⁰³

FRE 403's attempt to direct reasoned rather than irrational and emotional decisions has been championed by social justice scholars as a tool for keeping racially or religiously discriminatory evidence out of court.¹⁰⁴ This is a laudable goal. But the emotional nature of the evidence is probably less fatal for exclusion than its frequent irrelevance or lack of probative value. Put differently, discriminatory evidence with marginal probative value can often be excluded without referring to its emotional content. In fact, there is something powerful about excluding such evidence on other grounds that are less forgiving to the bias (i.e., it is not emotional, it is *wrong*). But the concern is not unfounded.

Emotion-evoking evidence may lead jurors to convict someone they find to be morally repugnant for this reason alone and not because of the facts of the instant case.¹⁰⁵ Alternatively, parties in civil matters could be unfairly influenced by moral approbation when determining damages. Consider the case where a woman was suing for sexual harassment under Title VII, and the defendant's counsel attempted to introduce evidence that she had an abortion that same year. The testimony was supposed to suggest that her emotional pain and suffering was due to the abortion, and not to the workplace sexual harassment. The court properly excluded the evidence under FRE 403 as marginally relevant and likely inflammatory, stating that the evidence "increased the likelihood that the jury would view her as immoral and not worthy of trust and reach its verdict on such basis."¹⁰⁶ To be sure, there are cases when marginally probative evidence ought to be excluded if it only appeals to some peripheral issue that triggers a retributive or sympathetic impulse. But it is not the case that appeals to emotion *uniformly* render decisions that are less fair or less accurate. Rather, what matters is precisely why the evidence is being offered, and whether it encourages a decision on something peripheral and not in dispute, like the morality of the plaintiff's additive and unrelated suffering in a Title VII case.¹⁰⁷ But there are many other examples

102. *Kilgore v. State*, No. 12-08-00450-CR, 2009 WL 2707175, at *4 (Tex. App. 2009) (citing *Erazo v. State*, 144 S.W.3d 487, 494–95 (Tex. Crim. App. 2004)).

103. *See Vasquez v. State*, 67 S.W.3d 229, 240 (Tex. Crim. App. 2002); *see also Kilgore*, 2009 WL 2707175, at *4; *Erazo*, 144 S.W.3d at 494–95 (error to admit photograph that was not related to a disputed fact of consequence).

104. *State v. Guthrie*, 461 S.E.2d 163, 189 (W. Va. 1995).

105. *United States v. Ham*, 998 F.2d 1247, 1252 (4th Cir. 1993).

106. *Nichols v. Am. Nat'l Ins. Co.*, 154 F.3d 875, 885 (8th Cir. 1998).

107. *See People v. Rivera*, 661 N.E.2d 429, 436 (Ill. App. Ct. 1996) ("The out of court identification testimony . . . caused grave harm because it served as a substitute for courtroom identification. The prosecutor's argument concerning a gang death warrant . . . was highly prejudicial and inflammatory. These errors, when considered together, undermined the fundamental fairness of the trial. These errors, then, are plain and warrant reversal." (citations omitted)).

where courts shun emotional evidence, equating it with undue prejudice even when it might be appropriately admitted.¹⁰⁸

Cases dealing with gruesome crime scene photographs¹⁰⁹ and victim memorial videos reveal how differently FRE 403 can be applied depending on whether invoking sympathy is considered a good thing or a bad thing.¹¹⁰ They also reveal how courts fail “to scrutinize the emotional appeal of this kind of evidence very carefully.”¹¹¹ In some cases, victim impact videos are excluded because they were unduly prejudicial and “created a danger of provoking undue sympathy and a verdict based on passion as opposed to reason.”¹¹² In others, the video is admitted because it evokes sympathy; namely, that the “victims are individuals whose deaths represent a unique loss to society and to their family and that the victims are not simply ‘faceless strangers.’”¹¹³ The Supreme Court, however, has cautioned that individualizing the victim through memorial

108. For examples of fairly thin explanations of the emotional bias, see *People v. Alexander*, 235 P.3d 873, 925 (Cal. 2010) (“[D]efendant has not shown that the evidence’s probative value was substantially outweighed by the danger of undue prejudice . . . [where] the lineup refusal evidence was not especially emotional, the possible reasons why defendant chose not to participate were fully developed, and the issue was not especially time consuming . . .”). See also *Gattis v. State*, No. 03-04-00268-CR, 2006 WL 1788207, at *5 (Tex. App. June 26, 2006) (“[T]here was nothing particularly emotion-inducing about the evidence concerning the motorcycle wreck that would unfairly impress the jury.”).

109. See generally David A. Bright & Jane Goodman-Delahunty, *Gruesome Evidence and Emotion: Anger, Blame, and Jury Decision-Making*, 30 L. & HUM. BEHAV. 183 (2006).

110. *People v. Sampson*, 67 A.D.3d 1031, 1032 (N.Y. App. Div. 2009). Often emotional pictures, such as those of a victim’s body at a crime scene, can be excluded if their “sole purpose” is to “arouse the emotions of the jury.” *Id.* (quoting *People v. Poblner*, 298 N.E.2d 637, 645 (N.Y. 1973)). For scholarship promoting the role of sympathy in legal decision-making, see Irving R. Kaufman, *The Anatomy of Decisionmaking*, 53 *FORDHAM L. REV.* 1, 16 (1984) (“[O]ur intuition, emotion and conscience are appropriate factors in the jurisprudential calculus.”). For an inarticulate version of the opposition, recall Michael Steele’s comments about why he is opposed to empathetic judges: “Crazy nonsense empathetic. I’ll give you empathy. Empathize right on your behind. Crazy-ness.” Rachel Weiner, *Michael Steele: “Empathize Right on Your Behind”*, *HUFFINGTON POST* (May 8, 2009, 3:46 PM), http://www.huffingtonpost.com/2009/05/08/michael-steele-empathize_n_200324.html.

111. Christine M. Kennedy, *Victim Impact Videos: The New-Wave of Evidence in Capital Sentencing Hearings*, 26 *QUINNIAC L. REV.* 1069, 1078 (2008) (“[C]ourts have largely failed to address the central question raised by victim impact evidence: when does it become so irrelevant and/or emotion-provoking that the defendant becomes subject to unfair prejudice which substantially outweighs probative value of the evidence, resulting in fundamental unfairness? The admittance of material like the letters to the murdered mother and photographs of a dressed-up stillborn child sets a high threshold for evidence courts may consider too inflammatory and prejudicial. The courts do not seem to scrutinize the emotional appeal of this kind of evidence very carefully, nor do they appropriately take into consideration the emotional effect of this evidence.” (footnote omitted)).

112. *United States v. Sampson*, 335 F. Supp. 2d 166, 191 (D. Mass. 2004) (“The video, made for a memorial service, was about twenty-seven minutes in length and featured over 200 still photographs of the victim, in roughly chronological order, from the time he was born until the time just before his death. The pictures were set to evocative contemporary music, including that of the Beatles and James Taylor.”). Perhaps this video should have been excluded, as it was too long to convey its message; but the emotional content of the video could not be avoided. See also *State v. Anthony*, 776 So. 2d 376, 394 (La. 2000); *State v. Allen*, 994 P.2d 728, 751 (N.M. 1999).

113. *State v. Gray*, 887 S.W.2d 369, 389 (Mo. 1994) (“The evidence complained of included testimony that the victims held liberal political views, were caring, community involved, excellent students, advocates of social change, and ‘without a hateful bone in her body.’ In addition, during the penalty phase the prosecution presented a video of the Kerry family Christmas.”).

videos is not meant to be a proxy for the loss to the community from her death.¹¹⁴ Because sympathy is encouraged in some cases and discouraged in others, these videos provide a *Rorschach* test for emotionally-laden evidence under FRE 403. The irony may be that the rule aimed textually at limiting bias is in fact encouraging the exact opposite in practice: bias stemming from discretion and institutional norms.

The anti-emotions bias in FRE 403 is lamentable for at least three reasons. First, it ignores the wide range of cases where emotion might be said to render decisions more, rather than less, accurate. It is quite possible that empathy, rage, or sadness may be entirely appropriate emotions to be conjured up at the guilt phase of trial, to better understand *prima facie* mental states of the parties (*mens rea*, honesty, etc.). As was mentioned in the previous section on FRE 105, emotional testimony, and our emotional reaction, may also help us focus, attend, and remember. Second, the focus on eliminating emotional bases for decisions does not require, but does suggest, that emotion and cognition are two completely separate processes. And third, it distracts from the fact that bad logic, memory, or perception or marginally related facts, can also contribute to prejudice.¹¹⁵

In their helpful treatise on the laws of evidence, Wright and Miller suggest that the phrase “undue prejudice” ought not to focus on emotion. Instead, we should ask whether the evidence fosters an “illegitimate method of persuasion” that either appeals “to an inappropriate logic” not based on the evidence or “to an undesirable emotion” such as hatred. This gets us a bit closer, as only certain emotions that are thought of as improper are excluded. At its core, this refashioning of FRE 403 asks us to consider the effect our emotions have on our logical reasoning. Only when our logical reasoning is impaired by emotion, or when we are reacting merely to *improper* emotions, should this type of evidence be excluded. This seems entirely reasonable and an improvement on the gloss provided by the Advisory Committee. It does, however, beg the question of when our emotions are improper, and when we are relying solely on emotion rather than in tandem with other facts.

Given the flexibility judges have in balancing FRE 403, and the standards for reviewing evidentiary decisions, potentially relevant information may be excluded based on the fact that it also happens to stir up emotion. But when is evidence ever limited to one potential purpose? We are perfectly capable of constructing reasons *post hoc* to justify our emo-

114. *Payne v. Tennessee*, 501 U.S. 808, 823–24 (1991) (“The facts of *Gathers* are an excellent illustration of this: The evidence showed that the victim was an out of work, mentally handicapped individual, perhaps not, in the eyes of most, a significant contributor to society, but nonetheless a murdered human being.”).

115. Jody Lyné Madeira, *Lashing Reason to the Mast: Understanding Judicial Constraints on Emotion in Personal Injury Litigation*, 40 U.C. DAVIS L. REV. 137, 149 (2006).

tional impulses.¹¹⁶ Judges can use pretext, or not, depending on whether they consider the evidence important enough for the jury to hear. This rigid intolerance to emotional evidence under FRE 403 is particularly disingenuous as so much emotional testimony and evidence is channeled in jury trials—through the prosody of attorney’s speech, from the witnesses’ eye contact, physical movements, and tone.¹¹⁷

C. Sentencing and Damages Instructions—Imposing Legal and Moral Judgment Without Sympathy or Empathy

1. The Anti-Golden-Rule Rule

The two illustrations above globally labeled emotions as problematic. Here, we deal with a rule that has a particular emotion in its crosshairs: empathy and its sister, sympathy.¹¹⁸ “Golden Rule” instructions in personal injury cases ask jurors to put themselves in the shoes of one of the parties, usually the plaintiff, when calculating civil damages.¹¹⁹ Such rules are generally thought to be impermissible because they encourage jurors to decide cases based on what they would hypothetically want rather than something more objective.¹²⁰ Courts further consider them to be inappropriate because they involve a “blatant appeal to the jury’s natural sympathy for the victim.”¹²¹

Below are examples of Golden Rule arguments:

- “Mr. Herring has had something that God has given to him taken away: a healthy, completely accident-free body. That is what he had. Something we all want. Something we all cherish.”¹²²

116. See Jonathan Haidt, *The Emotional Dog and Its Rational Tail: A Social Intuitionist Approach to Moral Judgment*, 108 PSYCH. REV. 814, 822–23 (2001).

117. Adolphs, *supra* note 67, at 168 (“Audition provides important social signals in addition to language. The intonation of speech—prosody—can signal various emotions, and is recognized using some of the same structures that we use for recognizing facial expressions. Music is an especially intriguing stimulus, as it might serve a social function that is not found in other animals, and it has been shown to elicit intense emotional responses that activate the orbitofrontal cortex, the insula and the amygdala.” (footnotes omitted)).

118. Empathy involves experiencing the emotions of others (because you have been in that situation), while sympathy involves being able to appreciate or feel sorry for someone’s feelings (even though you have never been there). Tania Singer & Claus Hamm, *The Social Neuroscience of Empathy*, in THE YEAR IN COGNITIVE NEUROSCIENCE 2009, at 81, 82 (Michael B. Miller & Alan Kingstone eds., 2009) (“Despite the word’s linguistic roots in ancient Greek—from *empathia* (passion), which is composed of ‘en’ (in) and ‘pathos’ (feeling)—the scientific scrutiny of empathy has a relatively short history that can be dated back to its use in philosophical aesthetics. From there the English term originated as a direct translation of the German *Einfühlung* (‘feeling into’ something), a term that was originally proposed as a tool for analyzing works of art and nature, but later developed into a more general mechanism for recognizing each other as ‘minded creatures.’” (citation omitted)).

119. See *Hall v. State*, 16 S.W.3d 582, 585 (Mo. 2000).

120. 75A AM. JUR. 2D *Trial* § 547 (2011).

121. *People v. Vance*, 116 Cal. Rptr. 3d 98, 102 (Ct. App. 2010).

122. *Klein v. Herring*, 347 So. 2d 681, 682 (Fla. Dist. Ct. App. 1977) (internal quotation marks omitted) (leading to a new trial).

• “The prosecutor improperly argued, ‘How embarrassing, first, to have to go through these acts, to have your father figure doing these things to you. Imagine how just dirty [sic] it makes you feel.’ [However,] we conclude that the error did not affect Draw’s substantial rights because the record indicates that the jury reached its verdicts based on a review of the evidence presented at trial rather than on any empathy or sympathy it may have had for the victims.”¹²³

Ironically, Golden Rule arguments engender much vitriolic emotion, with one judge declaring:

It is hard to conceive of anything that would more quickly destroy the structure of rules and principles . . . than for the juries to award damages in accordance with the standard of what they themselves would want if they or a loved one had received the injuries suffered by a plaintiff. In some cases, indeed, many a juror would feel that all the money in the world could not compensate him for such an injury to himself or his wife or children.¹²⁴

If juries are not to be relying on their emotions such as empathy when awarding damages, how are they deciding how much money to award the plaintiff?

Typically, jurors are told very little about how to calculate damages.¹²⁵ And what they are told is often just a very cursory definition of what the damages are for (i.e., compensating for medical expenses, pain and suffering, change of lifestyle, or punishing willful conduct) without providing any metric by which they are supposed to calculate these values. The result is often a “common sense” decision about what seems fair.

In all likelihood, jurors are doing precisely what they are told not to do with the anti-Golden-Rule rules. For how else could they perform this function if not evaluating what they think would be a fair amount based on their personal sense of justice and what they would want if they were the plaintiff? Some research shows that the best predictor of a jury’s damages award is their emotional reaction or feelings towards the par-

123. Draw v. State, No. 50560, 2010 WL 3270976, at *2 (Nev. July 22, 2010) (alteration in original) (citations omitted).

124. Klein, 347 So. 2d at 682 (quoting Bullock v. Branch, 130 So. 2d 74, 76 (Fla. Dist. Ct. App. 1961)) (internal quotation mark omitted).

125. Rebecca Hollander-Blumoff & Matthew T. Bodie, *The Effects of Jury Ignorance About Damage Caps: The Case of the 1991 Civil Rights Act*, 90 IOWA L. REV. 1361, 1399–1400 (2005) (“As courts, practitioners, and academics have noted, jurors generally get precious little instruction on how to calculate compensatory and punitive damages. . . . Even if an instruction counsels the jury to avoid ‘passion or prejudice,’ such an instruction on its own does little to provide structure to the jury’s contemplation.” (footnotes omitted)).

ties.¹²⁶ But to some, employing empathy in this way is tearing up our legal system from its roots.

2. Sentencing Instructions—Punish Without Empathy or Sympathy

Another example of where empathy is discouraged is when jurors hear evidence about imposing the death penalty in capital cases. It is worth pausing here to note the irony: perhaps the most emotionally loaded action that the state can do—strip someone of their liberty and life—is somehow supposed to be done coolly and without emotion. What a fiction!

Jurors evaluate the weight of the aggravating factors to decide whether someone eligible for the death penalty should actually receive it. The death penalty was reinstated in 1976 through the *Gregg v. Georgia* Supreme Court decision.¹²⁷ Since then it has become “talismanic”¹²⁸ for courts to remind us that “[t]he Eighth and Fourteenth Amendments require a sentence of death to be based on reason, not caprice, emotion, or other arbitrary factor.”¹²⁹ One scholar said, “[t]he greatest risk in the moral-emotive approach is that sentencers will confuse moral outrage with its amoral emotive cousin, the passion of vengeance.”¹³⁰ It is fair to say that we do not want jurors to become hysterical or sentence based on false stereotypes. But somewhere in the middle between moral outrage and vengeance lies the proper ground. As further evidence of the complexity of emotion and its impact on decision-making, research has demonstrated that “contrary to most people’s intuitions, happy moods promote group stereotyping, whereas sad moods promote a focus on individuals.”¹³¹ Thus, if our goal was to remove sentencing based on racial

126. For a helpful review of the research in this area, see Hastie, *supra* note 41, at 1005 (“Daniel Kahneman, David A. Schkade, and Cass R. Sunstein conclude that outrage is the primary mediator of jurors’ decisions concerning punitive damages. Brian H. Bornstein hypothesizes that the impact of the severity of an injury on mock jurors’ judgments of liability and compensatory awards is mediated by jurors’ feelings towards the parties involved in the cases. In Bornstein’s studies, injury severity had no effects beyond those predicted via the mock jurors’ emotional reactions. Similarly, Neal Feigenson, Jaihyun Park, and Peter Salovey interpreted the complex findings they obtained in a study of personal injury judgments as the result of jurors’ resolution of feelings of sympathy and blame for the plaintiffs and feelings of anger or fear evoked by the defendants’ actions.”).

127. 428 U.S. 153 (1976).

128. Maroney, *supra* note 30, at 872 (quoting *Saffle v. Parks*, 494 U.S. 484, 514 (1990) (Brennan, J., dissenting)).

129. *Allen v. State*, 923 P.2d 613, 619 (Okla. Crim. App. 1996) (citing *Gregg v. Georgia*, 428 U.S. 153 (1976); *Proffitt v. Florida*, 428 U.S. 242 (1976); *Saffle v. Parks*, 494 U.S. 484, 110 S.Ct. 1257, 108 L.Ed.2d 415 (1989)).

130. Pillsbury, *supra* note 51, at 690.

131. Gerald L. Clore & Jeffrey R. Huntsinger, *How Emotions Inform Judgment and Regulate Thought*, 11 TRENDS COGNITIVE SCI. 393, 396 (2007) (“One relevant study involved a mock trial in which a Latino student was accused of a stereotype-consistent offense. The results showed that individuals in happy moods were more likely than those in sad moods to have their verdicts influenced by the stereotype. . . . [T]he stereotyping seems to reflect a general cognitive style rather than prejudice as such. Indeed, similar findings come from marketing and political science studies showing that happy moods promote reliance on brand names as opposed to product attributes among

stereotyping, attempting to remove saddening emotions, such as sympathy, may not be the way to go.

As Terry Maroney correctly points out, the effort to rid the process of emotion “was motivated in significant part by a desired move away from the racial bias that pervaded the capital system, [but] the horse has long left that barn; the Court now speaks in much more general terms about the supposed perils of emotion.”¹³² This is echoed in the statement of Samuel Pillsbury that “[a]lthough the mob-at-the-jail scene illustrates that anger can lead to injustice, it does not support the proposition that all decisions influenced by anger are morally tainted.”¹³³ We have seen this flawed reasoning elsewhere, when the anti-emotion bias embedded in FRE 105 and FRE 403 has been expanded to sloppily exclude many other types of emotional evidence and processes.

An example of this is when judges explicitly instruct jurors not to rely on their empathic impulses,¹³⁴ or when they are told to come to a unanimous verdict by rendering a decision “based on a reasonable, rather than emotional, evaluation of the evidence.”¹³⁵ There are too many examples of this sentencing instruction to cite, but I will attempt to provide its flavor. Jurors are told that they must not “be swayed by anger, sympathy or prejudice or any type of passion or emotion. [Sentencing] requires the exercise of sound judgment It is a matter of calm reflection, not for the indulgence of emotion.”¹³⁶ This is the absolute form of anti-sympathy present mostly in capital instructions, where theoretically no emotion or sympathy is allowed.

A softer version of this instruction admonishes reliance on “mere sentiment, conjecture, sympathy, passion, prejudice, public opinion or public feeling.”¹³⁷ We can see an example of this sort of instruction after the prosecutor urged the jury to “get mad” and rely on their emotions, which was deemed impermissible.¹³⁸ While some courts refuse to allow

consumers, and a reliance on political party as opposed to candidate positions among voters.” (footnotes omitted).

132. Maroney, *supra* note 30, at 872 (footnotes omitted).

133. Pillsbury, *supra* note 51, at 656.

134. See, e.g., *State v. Crawford*, 133 S.E.2d 232, 240 (N.C. 1963) (“[T]he jury should arrive at their verdict ‘without sympathy or without prejudice towards any person.’”).

135. *People v. Bowen*, 134 A.D.2d 356, 356 (N.Y. App. Div. 1987).

136. *Reynolds v. State*, CR-07-0443, 2010 WL 3833960, at *79 (Ala. Crim. App. Oct. 1, 2010); see also *United States v. Hammer*, 25 F. Supp. 2d 518, 534 (D. Pa. 1998) (“You are to perform your duty as jurors without bias or prejudice as to either party. The law does not permit jurors to be governed by fear, favor, emotion, prejudice, or public opinion.”).

137. *People v. Alvarez*, 926 P.2d 365, 403 (Cal. 1996) (emphasis added).

138. See *State v. Taylor*, 944 S.W.2d 925, 938 (Mo. 1997). Defendant Taylor found guilty of first-degree murder, first-degree robbery, first-degree assault, and three counts of armed criminal action, and was sentenced to death on murder charge. “Taylor shot Newton once in the head, killing him. Taylor then pointed the gun at the child. Taylor pulled the trigger, but the gun jammed and did not discharge. Frustrated, Taylor locked the child in the back room and returned to the car.” *Id.* at 930. “Urging the jury to ‘get mad’ and decide the case based on ‘emotion’ was impermissible.

“mere sympathy or prejudice to influence [jurors] in reaching their verdict,”¹³⁹ it is impossible to know when a jury member is moved by “mere” sympathy, as opposed to sympathy stemming from a serious analysis of the facts. In all likelihood, the instructions we provide do very little, as emotional reactions bubble up organically and are difficult to consciously subdue. Of course in some cases, courts do not discourage all emotion, but rather stress “that the emphasis throughout the proceeding should be on reason rather than emotion.”¹⁴⁰ Even where emotion is just subordinate, it still sits in a position where it is “rather than” reason. Rather than ardently embracing empathy as the “cognitive” process that empowers jurors to find facts, sentence, and determine credibility, courts routinely grant appeals on cases where jurors were encouraged to be sympathetic or empathetic.

3. Permitting Emotion: Mitigation

Emotion is affirmatively encouraged during many mitigation hearings. Specifically, the Supreme Court has stated that in this setting the Constitution requires jurors to rely on emotional arguments.¹⁴¹ An instruction that attempts to eliminate emotion from sentencing might mislead jurors into believing that only factual physical evidence about the crime is relevant and that mitigation based on character should be disregarded: “Mitigation does not return a jury to unbridled emotional discretion, but it does require jurors to make a reasoned moral response to defendant’s personal background, character and crime.”¹⁴²

As you might expect, this can lead to confusing instructions. Jurors are told to simultaneously use emotion to show mercy, but remove emotion for all other sentencing purposes (such as evaluating aggravating factors). Proposed instructions have been deemed too confusing as one in particular “discouraged reliance on emotional evidence to support a verdict of death, while encouraging reliance on emotional evidence to show mercy to the defendant.”¹⁴³ Thus, jurors are asked to silence their emotional processes during aggravation hearings, but later are told to rely on

Moreover, because the court overruled the objection to the criticized language, the appeal to emotion had the stamp of approval of the trial court.” *Id.* at 938 (citations omitted).

139. *State v. Smith*, 893 S.W.2d 908, 921 (Tenn. 1994).

140. *People v. Innocent*, 150 A.D.2d 608, 609 (N.Y. App. Div. 1989).

141. *Penry v. Lynaugh*, 492 U.S. 302, 328 (1989) (quoting *Franklin v. Lynaugh*, 487 U.S. 164, 185 (1988) (O’Connor, J., concurring)).

142. Leona D. Jochowitz, *Missed or Foregone Mitigation: Analyzing Claimed Error in Missouri Capital Clemency Cases*, 46 CRIM. L. BULL., 347, 352–53 (2010) (“[T]he Supreme Court held that jurors’ decisions must be rooted in the mitigating and aggravating evidence, and that they could be instructed to avoid ‘solely emotional responses.’ By the same token, Justice O’Connor, in a separate concurrence, required that capital sentencing reflect a ‘reasoned, moral response to defendant’s background, character and crime, rather than mere sympathy or emotion.’ A ‘reasoned’ response meant that jurors had to consider the aggravating and mitigating evidence; and a ‘moral’ response meant that juror must also make a moral inquiry into the personal and individual culpability of the defendant.” (footnotes omitted)).

143. *People v. Hartsch*, 232 P.3d 663, 697 (Cal. 2010).

them for mitigation, despite the fact that the two are sometimes proximate in terms of presentation. Other courts perpetuate this confusing instruction as a compromise, allowing emotion at mitigation but in hardly any other proceedings. Still more remarkable, some courts decide to define “mercy” as cognitive, so that it can properly be allowed.¹⁴⁴ A more nuanced instruction accounts for the potential problems of relying on certain subjective emotion (such as homophobia) while encouraging relevant emotional evidence and argument. It reads like this:

You must make this decision soberly and rationally, and you may not impose the ultimate punishment of death as a result of an irrational, purely subjective response to emotional evidence and argument. On the other hand, evidence and argument on emotional, though relevant subjects, may provide legitimate reasons to sway you to show mercy towards the defendant.¹⁴⁵

Better. But even this improved instruction perpetuates the myth that we can consciously suppress our emotional reactions to increase sentences but allow them when we reduce sentences. The disparity here begs the question: Is there a meaningful difference between the role of juror in preliminary sentencing and ultimate sentencing through mitigation? We are expecting jurors to perform mental gymnastics and are sending confusing signals about the normative value of emotion in the sentencing process.

D. Instructions Related to the “Heat of Passion” Theory of Voluntary Manslaughter

The heat of passion instruction embraces a robust position of our emotions and reasons as competitors. The heat of passion defense reduces first-degree murder to “voluntary manslaughter” if a criminal defendant intentionally kills someone after adequate provocation. What counts as adequate provocation is left for the jury to decide, but it should “vary with the myriad shifting circumstances of men’s temper and quarrels.”¹⁴⁶ The theory behind this instruction is that the defendant ought to be considered less morally blameworthy because they committed the act when “incapable of that cool reflection.”¹⁴⁷ In other formulations, adequate provocation was defined as what “might render ordinary men, of fair

144. 11 WASH. PATTERN JURY INSTRUCTIONS—CRIM. 31.07 cmt. (3d ed. 2010) (“The wording of this instruction, ‘in fairness or in mercy,’ was upheld in *Gentry*, citing the committee’s Comment to WPIC 31.03: ‘The committee concluded that passion, prejudice and sympathy were “emotional” considerations, while a finding of “mercy” would be based on “reason.”’” (quoting *State v. Gentry*, 888 P.2d 1105, 1151 (Wash. 1995))).

145. *Hartsch*, 232 P.3d at 696 (internal quotation mark omitted).

146. *Commonwealth v. Pease*, 69 A. 891, 892 (Pa. 1908).

147. *Addington v. United States*, 165 U.S. 184, 186 (1897).

average disposition, liable to act rashly or without due deliberation or reflection, and from passion rather than judgment.”¹⁴⁸

Requiring “adequate provocation,” the instruction contemplates this as including emotional impulses that limit or eliminate our ability to act rationally.¹⁴⁹ While this emotion is frequently rage, it does not have to be. Consider the California pattern instruction below:

Neither fear, revenge, nor the emotion induced by and accompanying or following an intent to commit a felony, nor any or all of these emotional states, in and of themselves, constitute the heat of passion referred to in the law of manslaughter. Any or all of these emotions may be involved in a heat of passion that causes judgment to give way to impulse and rashness. Also, any one or more of them may exist in the mind of a person who acts deliberately and from choice, whether the choice is reasonable or unreasonable.¹⁵⁰

What is often required for the provocation is merely that it “engaged an emotional, automatic, or involuntary process that limits or eliminates the agent’s ability to act ‘rationally.’”¹⁵¹ As Blackstone describes it historically, voluntary manslaughter “arises from the sudden heat of passions; murder from the wickedness of heart.”¹⁵² Here we see the older metaphors describing mental and emotional processes as visceral. Greenleaf’s nineteenth century treatise on the heat of passion evidence explains two classic examples. The first is “where a husband caught a man in the act of adultery with his wife, and instantly killed either or both of them,” and the second:

[W]here a boy, being beaten by another boy, ran home to his father, who, seeing him very bloody, and hearing his cries, instantly took a rod or small stick, and running to the field three-quarters of a mile distant, struck the aggressor on the head, of which he died, this was ruled manslaughter only, because it was done upon provocation . . . and in sudden heat and passion.¹⁵³

In a telling summary of the heat of passion doctrine, Greenleaf educates us that the mortal blow should be given before the passion, aroused by the provocation, had time to cool; “for it is only to human frailty that the law allows this indulgence, and not to settled malignity of heart. . . . [If] there were time for passion to subside, and for *reason to resume her*

148. *Mahe v. People*, 10 Mich. 212, 220 (1862) (emphasis omitted).

149. *See Commonwealth v. Harris*, 171 A. 279, 281 (Pa. 1934) (stating that the mitigating circumstances to be considered are those “which indicate provocation, impulsion of emotion, or other satisfactory reasons for lessening the penalty”).

150. CAL. JURY INSTRUCTIONS—CRIM. 8.44 (2011).

151. Paul W. Glimcher, *The Neurobiology of Individual Decision Making, Dualism, and Legal Accountability*, in *BETTER THAN CONSCIOUS?: DECISION MAKING, THE HUMAN MIND, AND IMPLICATIONS FOR INSTITUTIONS*, *supra* note 1, at 343, 346.

152. 3 SIMON GREENLEAF, *A TREATISE ON THE LAW OF EVIDENCE* § 119 (16th ed. 1899).

153. *Id.* § 122 (emphasis omitted) (footnotes omitted).

empire before the mortal blow was struck, the homicide will be murder.”¹⁵⁴

Below are more recent examples of this antiquated doctrine, which highlight the confusion and false dichotomy between emotion and reason:

- “Whether or not there was a reasonable opportunity for the passion to cool depends upon whether, under all the circumstances of the particular case, there was such a lapse of time between the provocation and the homicidal act that the mind of a reasonable person would have cooled sufficiently, so that the homicide was directed by reason, rather than by passion or emotion.”¹⁵⁵

- “The defendant attempted to kill someone because of a sudden quarrel or in the heat of passion if, [among other things] . . . the attempted killing was a rash act *done under the influence of intense [e]motion that obscured the defendant's reasoning or judgment.*”¹⁵⁶

- “[D]efendant was overwhelmed with numerous affective states specifically stemming from his sexual dysfunction and specifically the volley of expletives that followed such dysfunction from Miss Clark In this emotional state, defendant was incapable of premeditating and deliberating or of coldly weighing the consequences of killing Clark. . . . In Dr. Franz’s opinion as well, defendant killed Clark in a very emotional, anxious state in which he did not have the skills available to premeditate and deliberate.”¹⁵⁷

- “Heat of passion arises when ‘at the time of the killing, the reason of the accused was obscured or disturbed by passion to such an extent as would cause the ordinarily reasonable person of average disposition to act rashly and without deliberation and reflection, and from such passion rather than from judgment.’¹⁵⁸

- “There is nothing in the instruction that would cause a jury to consider only physical acts to the exclusion of emotions. . . . [T]he court’s instructions properly focused the jury on appellant’s emotional response to the provocation, as opposed to his physical response.”¹⁵⁹

154. *Id.* § 125 (emphasis added) (footnote omitted).

155. OKLA. UNIFORM JURY INSTRUCTIONS—CRIM. 4-100 (2011).

156. *People v. Rodriguez*, No. G042583, 2010 WL 4261915, at *3 (Cal. Ct. App. Oct. 29, 2010) (third alteration in original) (emphasis added) (internal quotation marks omitted).

157. *People v. Rogers*, 141 P.3d 135, 150–51 (Cal. 2006) (internal quotation marks omitted) (affirming second and first degree murder charge).

158. *People v. Barton*, 906 P.2d 531, 540 (Cal. 1995) (quoting CAL. JURY INSTRUCTIONS—CRIM. 8.42 (1995)); *accord* *People v. Steele*, 47 P.3d 225, 240 (Cal. 2002).

159. *Rodriguez*, 2010 WL 4261915, at *4.

• “Heat of passion does not require anger, rage, or any specific emotion. It can be any violent or intense emotion that causes a person to act without due deliberation and reflection”¹⁶⁰

As you can see, emotion is placed sharply at odds with reason. What many of the courts dodge, however, is the question of intent. In order to be guilty of second-degree homicide, the defendant still must have intended to kill, even if this intent was not part of a premeditated plan. And if the effects of emotion are *so* debilitating, what does this do for the state’s ability to establish the requisite intent? Are the two processes completely different? Forming intent requires some form of cognition or reasoning, which is ostensibly shut down by passion or rage. This is a third-rail issue that is not being properly discussed in criminal law scholarship.

One way of limiting use of the heat of passion instruction is to place a reasonableness requirement on it, as seen above. Let us pause to think about this. Requiring that the provocation be objectively reasonable for someone with “average disposition” is akin to requiring reasonable unreasonableness. This is surely a mechanism for furthering cultural power-dynamics such as sexism and racism.¹⁶¹ But it may not always be sinister or hypocritical, as Daniel Kahan and Martha Nussbaum point out.

Kahan and Nussbaum have done terrific work with conceptual development in this arena, arguing that the “disparate approaches to emotion at work in the criminal law stem from a long-standing dispute in Western culture about the nature and educability of the emotions.”¹⁶² According to them, two accounts of emotion compete to explain our behavior.¹⁶³ The “mechanistic conception” sees emotions as reflexive and entrenched influences that do not require cognition.¹⁶⁴ The “evaluative conception” conversely holds that emotions convey cognitive appraisals.¹⁶⁵ These appraisals can be evaluated against individual and social

160. JUDICIAL COUNCIL OF CAL. CRIM. JURY INSTRUCTIONS 570 (2011); *see also* *People v. Moye*, 213 P.3d 652, 660 (Cal. 2009) (“To satisfy the subjective element of this form of voluntary manslaughter, the accused must be shown to have killed while under ‘the actual influence of a strong passion’ induced by such provocation.”) (quoting *People v. Wickersham*, 650 P.2d 311, 321 (Cal. 1982)); *State v. Bird*, 734 N.W.2d 664, 673 (Minn. 2007) (“[W]hether a person of ordinary self-control would be provoked under like circumstances requires an objective analysis.” (citing *State v. Hannon*, 703 N.W.2d 498, 510 (Minn. 2005))); *State v. Buntrock*, 560 N.W.2d 383, 386 (Minn. 1997).

161. Antonia Elise Miller, Note, *Inherent (Gender) Unreasonableness of the Concept of Reasonableness in the Context of Manslaughter Committed in the Heat of Passion*, 17 WM. & MARY J. WOMEN & L. 249, 250 (2010) (“[F]lexible sentencing associated with voluntary manslaughter emerged in the common law as an alternative to the rigidity of murder sentences in order to afford leniency to males who have committed violent acts in response to provocation. Today, voluntary manslaughter continues to accommodate men who kill their wives in the heat of passion, but not women who kill their husbands for the same reason” (footnotes omitted)).

162. Kahan & Nussbaum, *supra* note 48, at 273.

163. *Id.*

164. *Id.*

165. *Id.*

morality, and can lead to moral education through emotional evaluation.¹⁶⁶ Thus, what is a “reasonable” emotion will change as the social norms of what constitutes good character changes. To them, it is therefore not contradictory to hold people to different standards based on our emotional reaction to their emotional behavior.

To that end, sometimes our social norms are informed by emotional contagion, which may be morally wrong. We then must engage cognitively with these reactions for social justice. This makes perfect sense, but there is a third account of emotions that is largely missing from this view. Namely, what is missing is a bi-directional top-down and bottom-up mixture of evaluative and mechanistic, with both operating in tandem. We also need to recognize the evaluative as sometimes automatic, and not necessarily learned through updating social mores.¹⁶⁷ With regard to the juror, we need to appreciate that the connection between emotion and cognition is a two-way street. While emotions convey cognitive appraisals, cognitive appraisals also reflect evolutionarily engrained and subconscious emotional information. In these cases our emotions may not respond to cognitive appraisal through instruction. Certainly this also suggests that the “heat of passion” must rest on retributive notions of justice for the criminal defendant, as it is strained to think of an instruction having a deterrent effect through appraisal of emotion at the time of the crime.

With regard to the defendant, we should be careful to excuse behavior that has *any* strong emotional base. It might be that anger and rage should be singled out as the only bases for the instruction, recognizing that other emotions would not lead to a true “heat of passion” that stills the reflective processes. This tracks our folk understanding of what it means to “snap.” It is not obvious, however, that we should punish these people with shorter sentences. The truly enraged defendant may need more specific deterrence, even if we might partially forgive their trespasses because of the situation. Thus, the instruction is anti-consequentialist and may be based on folk thinking about impulsivity in moments of adultery or child bullying.

IV. USING THE FALSE DICHOTOMY TO FAVOR EMOTIONAL TESTIMONY—RULE 803(2)

The excited utterance hearsay exception was codified into the FRE and exists in some form in every state’s evidentiary rules. It is laid out in FRE 803(2), and allows hearsay to be admitted when it contains “[a]

166. *Id.*

167. Blair et al., *supra* note 86, at 437 (finding that goal-directed processing disrupted the BOLD response, an indirect measure of brain activity, to emotional pictures); Anett Gyurak et al., *Do Tests of Executive Functioning Predict Ability to Down-Regulate Emotions Spontaneously and When Instructed to Suppress?*, 9 COGNITIVE, AFFECTIVE, & BEHAV. NEUROSCIENCE 144, 149 (2009) (verbal fluency scores predicted successful regulation of emotion).

statement relating to a startling event or condition made while the declarant was under the stress of excitement caused by the event or condition.” Emotions of “stress” or “excitement” are thought to impair reasoning and to make it impossible to lie. If the rules exhibit affective confusion at a meta-level with emotions, we also see a micro-version here with the monolithic view of a particular emotion—stress.

Stress can be absolute or relative. Absolute stress induces an evolutionarily preserved “fight or flight” response, occurring regardless of a person’s history or character. Our individual survival depends on how we respond to these life or death cues. Relative stress, on the other hand, is incredibly variable and requires one to perceive the event as unpredictable, new, or out of our control. These relative stressors can be obvious or subtle, and can depend on our personality and life experience.¹⁶⁸ The previously discussed absolute stressors trigger physiological systems (pulse, adrenaline, blood pressure) because they are threats to our lives. For relative stress, we must interpret the situation in order to decide how to respond, and there may not be the same physiological signs of stress.¹⁶⁹

Whether stress will make it difficult for us to lie depends on what type of stress we are experiencing, and when.¹⁷⁰ Are we being followed by a suspicious husband? If so, we might have no problem lying when we are cornered by him. Have we just heard a blood-curdling cry? Have we been repeatedly sexually abused? Are we starving? Each of these will elicit different physiological stressors.¹⁷¹ It is likely that only the absolute stressors may impair our ability to lie, but the relative stressors may not.

Notwithstanding the many critiques of this hearsay exception, rather than falling out of practice, this rule is only being invigorated in recent years.¹⁷² It is also quite broad, as it does not matter whether the statement includes an opinion or a statement of observed facts. Excited utterance

168. See generally Ahmad R. Hariri et al., *Serotonin Transporter Genetic Variation and the Response of the Human Amygdala*, 297 *SCI.* 400 (2002); D.T. Hsu et al., *fMRI BOLD Responses to Negative Stimuli in the Prefrontal Cortex Are Dependent on Levels of Recent Negative Life Stress in Major Depressive Disorder*, 183 *PSYCHIATRY RESEARCH* 202 (2010); Randy J. Larsen & Timothy Ketelaar, *Personality and Susceptibility to Positive and Negative Emotional States*, 61 *J. PERSONALITY & SOC. PSYCHOL.* 132 (1991) (describing the different emotional responses of extroverts and introverts).

169. S.J. Lupien et al., *The Effects of Stress and Stress Hormones on Human Cognition: Implications for the Field of Brain and Cognition*, 65 *BRAIN & COGNITION* 209, 210–11 (2007).

170. Christian J. Merz, Oliver T. Wolf & Jürgen Hennig, *Stress Impairs Retrieval of Socially Relevant Information*, 124 *BEHAV. NEUROSCIENCE* 288, 291 (2010) (“[T]he cognitive response to stress might be reduced only at times of high endogenous sex steroid concentrations (e.g., during the luteal phase of the menstrual cycle).” (citation omitted)).

171. Lupien et al., *supra* note 169, at 215 (stating that glucocorticoids can have differential effects—creating both hyper and hypovigilance in response to auditory and visual stimuli).

172. See William C. Thompson & Maithilee K. Pathak, *How Do Jurors React to Hearsay Testimony?: Empirical Study of Hearsay Rules: Bridging the Gap Between Psychology and Law*, 5 *PSYCHOL. PUB. POL’Y & L.* 456, 457 (1999) (“This article is designed to help bridge the gap between psychology and law with respect to hearsay.”).

testimony may also be admitted if the declarant later denies having made the statement. Courts even admit such out-of-court statements when much time has passed between the startling event and the purportedly excited utterance. According to Ed Imwinkelried, “[T]here is an incipient trend to admit so-called ‘re-excited’ utterances—statements the declarant makes upon viewing a movie, television program, or newspaper article—that reminds the declarant of a much earlier startling event.”¹⁷³ While Wigmore himself was of the view that the time component was less critical than the fact that the declarant was still experiencing some stress,¹⁷⁴ some courts still require a close proximity in time between the startling event and the statement.¹⁷⁵

In his somewhat freckled folk view of psychology, Wigmore wrote that:

[U]nder certain circumstances of physical shock, a stress of nervous excitement may be produced which stills the reflective faculties and removes their control Since this utterance is made under the immediate and uncontrolled domination of the senses, and during the brief period when considerations of self-interest could not have been brought fully to bear by reasoned reflection, the utterance may be taken as particularly trustworthy¹⁷⁶

This was supported by the leading psychologist of the era, William James. James wrote, “An impression may be so exciting emotionally as almost to leave a scar upon the cerebral tissues”¹⁷⁷ It is widely believed that emotion affects episodic memory (memory for autobiographical events). And it does, but in complex and non-linear ways.¹⁷⁸

Courts have interpreted the excited utterance rule to require three things: first, an exciting event; second, that the declarant was under stress from the event when making the utterance; and third, that the utterance concerns the exciting event.¹⁷⁹ Many feel that the rule has been expanded

173. Edward J. Imwinkelried, *The Need to Resurrect the Present Sense Impression Hearsay Exception: A Relapse in Hearsay Policy*, 52 HOW. L.J. 319, 325; see also Jone Tran, Note, *Crying Wolf or an Excited Utterance? Allowing Reexcited Statements to Qualify Under the Excited Utterance Exception*, 52 CLEV. ST. L. REV. 527, 533 (2004) (“There are an assortment of chronic psychological syndromes that do not fit cleanly within the excited utterance exception and consequently should toll the ‘excited state’ requirement or allow for the statement to fall under the exception because it constitutes ‘reexcitement[.]’ . . . unremitting physical pain, or where the declarant is a victim of a psychologically debilitating crime such as rape or brutal physical battery.”).

174. Angela Conti & Brian Gitnik, *Federal Rule of Evidence 803(2): Problems with the Excited Utterance Exception to the Rule on Hearsay*, 14 ST. JOHN’S J. LEGAL COMMENT. 227, 246 (1999).

175. See *Harrison v. Baker*, 71 So. 2d 284 (Ala. 1954); *People v. Gutierrez*, 200 P.3d 847 (Cal. 2009); *Littlejohn v. State*, 219 A.2d 155 (Del. 1966).

176. 6 JOHN HENRY WIGMORE, *EVIDENCE IN TRIALS AT COMMON LAW* § 1747 (1976).

177. 1 WILLIAM JAMES, *THE PRINCIPLES OF PSYCHOLOGY* 670 (1890) (emphasis omitted).

178. See *infra* notes 349-354.

179. *United States v. Reggio*, 40 M.J. 694, 699 (N-M. Ct. Crim. App. 1994); *United States v. Phelps*, 168 F.3d 1048, 1054 (8th Cir. 1999); *United States v. Moore*, 791 F.2d 566, 570 (7th Cir. 1986).

too much, and judges should be stricter about the amount of time that has passed between the original event and the statement.¹⁸⁰

Originally, the emphasis of the rule was on keeping out intentional lies—the idea being that people do not have time to lie when experiencing stress. However, this misses the typical hearsay problem: *memory*. The person testifying as to the declarant's speech is more often than not giving false testimony accidentally as a result of mistaken recollections. Ironically, “the emotions that seemingly ensure sincerity distort the accuracy of the observer's perception and memory.”¹⁸¹ Put differently, emotions can enable us to be very confident in our recollections, but these flashbulb and vivid memories are often wrong.¹⁸² The processes of emotion and memory are so complex and subtle, that in some experiments, emotion impairs memory and in other situations, it aids it.¹⁸³ Subjects initially have better memories of events when simultaneously experiencing a little bit of a particular emotion, but when that same emotion, say anxiety or stress, is more long-lasting, this yields the opposite results.

Instead of acknowledging the nuanced roles of memory and emotion, the excited utterance rule likewise adopts the false dichotomy between reason and emotion. Here, deception is considered a process that requires cognitive faculties, faculties that are paralyzed by emotion. Thus emotional declarations are more trustworthy as you do not have cognitive capacity to deceive. To make this point, consider the following examples from case law regarding this hearsay exception:

- “Testimony ‘that [a] declarant appeared nervous and upset, combined with a reasonable basis for emotional upset, will usually suffice for admission of declarant's hearsay statement under the excited utterance exception.’”¹⁸⁴

- “[S]tress of nervous excitement may be produced in a spectator which stills the reflective faculties and removes their control Since this utterance is made under the immediate and uncontrolled domination of the senses, rather than reason and reflection, and during the brief peri-

180. This would look more like the original “res gestae” exception. Conti & Gitnik, *supra* note 174, at 237–38.

181. Imwinkelried, *supra* note 173, at 322.

182. Tali Sharot et al., *How Personal Experience Modulates the Neural Circuitry of Memories of September 11*, 104 PROC. NAT'L ACAD. SCI. 389, 391 (2007) (“In other words, participants who were closer to the WTC on 9/11 showed decreased activation in the posterior parahippocampal cortex and increased activation in the amygdala during retrieval of 9/11 memories relative to summer memories.”). See generally, John Neil Bohannon III, *Flashbulb Memories for the Space Shuttle Disaster: A Tale of Two Theories*, 29 COGNITION 179 (1988).

183. Karin Roelofs et al., *The Effects of Social Stress and Cortisol Responses on the Preconscious Selective Attention to Social Threat*, 75 BIOLOGICAL PSYCHIATRY 1, 5 (2007) (“These findings indicate that the effects of the social stress context and the cortisol stress-responsiveness were specific for context relevant (social threat) cues and not for unspecific emotional cues.”).

184. *Daniel v. State*, 677 S.E.2d 120, 125 (Ga. 2009) (quoting *Walthour v. State*, 497 S.E.2d 799, 802 n.7 (Ga. 1998)).

od when consideration of self-interest could not have been fully brought to bear, the utterance may be taken as expressing the real belief of the speaker as to the facts just observed by him.”¹⁸⁵

• “[T]he critical factor in determining whether a statement is an excited utterance is whether the emotions, excitement, fear, or pain of the event still dominated the declarant at the time of the statement.”¹⁸⁶

• “[T]he hearsay was admissible He *was anxious and admitted that he was scared*; therefore the statement was an excited utterance.”¹⁸⁷

Thus, the excited utterance rule, like many other evidentiary rules, also espouses a corrupting view of emotion. Specifically, the emotions of stress and anxiety turn off our cognitive capacities and make it impossible for us to lie. In this case, emotion works to render the testimony more trustworthy rather than less, albeit by ignoring the role of memory and the different types of stress.

A. The Ultimate Role of the Jury: Credibility Determinations

As David Blinka put it, “One expecting to find a comprehensive, cogent approach to credibility assessments in the FRE will be greatly disappointed.”¹⁸⁸ While there is no FRE rule that speaks directly to this, in practice it is clear through other rules related to impeachment that the judge in bench trials and the jury in jury trials are meant to serve this function. Jurors assess credibility based on subtle physical cues—stutters, stares, and fidgets—and on not so subtle cues, like conflicting stories.¹⁸⁹ Jurors also choose whom to believe based on reported behavior from witness testimony.¹⁹⁰

Emotion, intuition, and common sense perspectives are encouraged when jurors make credibility assessments.¹⁹¹ Only in this function do we openly accommodate juror frailty, illogical and inaccurate statements,¹⁹²

185. *People v. Dobbey*, 957 N.E.2d 142, 153 (Ill.App. Ct. 2011) (quoting *People v. Damen*, 193 N.E.2d 25, 29 (Ill. 1963) (internal quotation marks omitted)).

186. *Langford v. State*, No. 03-08-00456-CR, 2010 WL 323081, at *2 (Tex. App. Jan. 27, 2010) (citing *Zuliani v. State*, 97 S.W.3d 589, 596 (Tex. Crim. App. 2003)).

187. *Cox v. State*, 849 So. 2d 1257, 1269 (Miss. 2003).

188. Blinka, *supra* note 7, at 365.

189. See Peter David Blanch et al., *The Measure of the Judge: An Empirically-Based Framework for Exploring Trial Judges' Behavior*, 75 IOWA L. REV. 653, 667–668 (1990) (citing Bert Pryor & Raymond W. Buchanan, *The Effects of a Defendant's Demeanor on Juror Perceptions of Credibility and Guilt*, 34 J. COMMUN 92 (1984)).

190. See Adolphs, *supra* note 67, at 171 (discussing the “Theory of Mind”, which holds that people attribute mental states to others people when presented with information relating to those other people).

191. Steven I. Friedland, *On Common Sense and the Evaluation of Witness Credibility*, 40 CASE W. RES. L. REV. 165, 166 (1990).

192. See *People v. Riel*, 998 P.2d 969, 1015 (Cal. 2000) (“Not all comments by all jurors at all times will be logical, or even rational, or, strictly speaking, correct.”).

and heated emotional processes.¹⁹³ In fact, we build this faith in the common juror into the standards of appellate review, preferring the trial court's assessment as an appellate court "cannot weigh on appeal . . . the intonation and demeanor of the witnesses preceding the testimony in issue . . . nor can we determine the emotional reaction of the jury to other pieces of evidence . . ." ¹⁹⁴ Reviewing courts often find that the lower court cross-examiner should be given "wide latitude" to vouch for credibility with emotionally-evocative testimony because "cross-examination is the means by which to test the truth of the witness's testimony and the witness's credibility."¹⁹⁵ Thus, when it comes to credibility determinations, reviewing courts will sometimes go to great lengths to protect the jury's dominion, including forgiving emotional arguments. But this is an area where the acceptance of emotion is not universal and in fact may reflect conflicting sentiments about the jury's historical role and value.

Building on our strong preference for juries to assess credibility, we also sometimes discourage expert witnesses to testify regarding the likelihood of an individual being honest.¹⁹⁶ So why is it the case that we admittedly allow and encourage jurors to engage in emotional decision-making when weighing the facts about credibility assessments, but in very few other places? There is still much to be learned by psychologists in terms of the unreliability of jurors' credibility assessments. So why does the law give so much deference to the credibility assessments of jurors? Blinka points out that in the many "collisions" between psychology and law on the topic of credibility, the "law triumphed" because of "the age and staying power of popular views of credibility."¹⁹⁷ But this still begs the question—Why?

The answer may lie in the fact that if juries do not perform credibility assessment, it is not clear whether there is a future for them. We assume that jurors can perform this role well.¹⁹⁸ Whether this belief is well-founded is a different question, but much judicial ink is spilt on our cul-

193. See *People v. Keenan*, 758 P.2d 1081, 1121 (Cal. 1988) ("Heated debate is expected of jurors . . .").

194. *State v. Mechler*, 153 S.W.3d 435, 439 (Tex. Crim. App. 2005) (alterations in original) (quoting *Montgomery v. State*, 810 S.W.2d 372, 379 (Tex. Crim. App. 1990)) (internal quotation marks omitted); see also Sean T. Carnathan, *Re-Assessing the Trial Court's Opportunity to Assess Credibility*, 13 ME. BAR J. 316, 316 (1998).

195. *McCoy v. State*, No. CR10-472, 2010 WL 3922687 (Ark. Oct. 7, 2010).

196. See, e.g., *United States v. Wertis*, 505 F.2d 683, 685 (5th Cir. 1974) (finding that the trial court's refusal to permit an expert witness to opine on the credibility of another witness was proper).

197. Blinka, *supra* note 7, at 370.

198. See Julie A. Seaman, *Black Boxes*, 58 EMORY L.J. 427, 458 n.129 (2008) (citing *United States v. Stromberg*, 179 F. Supp. 278, 280 (S.D.N.Y. 1959) ("The most important function served by a jury is in bringing its accumulated experience to bear upon witnesses testifying before it, in order to distinguish truth from falsity. Such a process is of enormous complexity, and involves an almost infinite number of variable factors. It is the basic premise of the jury system that twelve men and women can harmonize those variables and decide, with the aid of examination and cross-examination, the truthfulness of a witness."))).

tural and constitutional commitment to having the jury serve as lie detector.¹⁹⁹

In two fairly recent cases involving the potential use of technological lie-detection, the courts in dicta acknowledged that even if a lie detection device were to become highly accurate and reliable, the results may still not be admissible if they take the lie detection role away from the jury.²⁰⁰ Collectively, as a legal society, we are highly committed to the jury's ability and role as credibility detector, even if this process may also be prone to bias. To be sure, the common law so frequently extols the role of the jury that it is hard to imagine an American institution that is a better symbol of our commitment to democratic ideals.²⁰¹ Given this, one might also be surprised to learn that the fact-finding jury is a relatively recent phenomenon. Despite having the appearance of being an age-old common law practice, the judge served as the exclusive finder-of-fact until after the American Revolution.²⁰² When our Bill of Rights was drafted, the Seventh Amendment allowed for jury trials in civil cases that existed at common law in 1787.²⁰³ The Sixth Amendment allows for "speedy and public" jury trials in all serious criminal prosecutions where time could be served in jail.²⁰⁴

More recently, some hold "it is essential that the jury have the exclusive prerogative of passing upon the credibility of the evidence and of determining the facts"²⁰⁵ in order to safeguard the existence of the jury

199. See generally Fisher, *supra* note 2. See also Anne Bowen Poulin, *Credibility: A Fair Subject for Expert Testimony?*, 59 FLA. L. REV. 991, 1001 (2007) (discussing the "common-law maxim" that the assessment of a witness's credibility is firmly within the jury's province).

200. See *United States v. Scheffer*, 523 U.S. 303, 312–314 (1998); *Wilson v. Corestaff Servs.* L.P. 900 N.Y.S.2d 639, 642 (N.Y. Sup. Ct. 2010).

201. See Seaman, *supra* note 198, at 488 n.129 ("The right of trial by jury is of ancient origin, characterized by Blackstone as 'the glory of the English law' and 'the most transcendent privilege which any subject can enjoy.'" (quoting *Dimick v. Schiedt*, 293 U.S. 474, 485 (1935))).

202. See Edward J. Imwinkelried, *Trial Judges—Gatekeepers or Usurpers? Can the Trial Judge Critically Assess the Admissibility of Expert Testimony Without Invading the Jury's Province to Evaluate the Credibility and Weight of the Testimony?*, 84 MARQ. L. REV. 1, 9 (2000) ("[A]fter the American Revolution . . . [i]t became a virtual 'article of faith' that the trial judge's authority encompassed the determination of all factual questions conditioning the admissibility of proffered evidence. This was not only the early common-law conception of the judge's authority; this conception was likewise codified in Rule 8 of the Uniform Rules of Evidence, Rule 11 of the Model Code of Evidence, and state statutes such as California Code of Civil Procedure § 2102 adopted in 1872." (footnotes omitted)).

203. This is due to the Amendment's phrasing, "In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved . . ." U.S. CONST. amend. VII.

204. U.S. CONST. amend. VI.

205. *Flynn v. W. P. Harlin Constr. Co.*, 509 P.2d 356, 360 (Utah 1973); see also *Thompson v. Janes*, 227 S.W.2d 330, 332 (Tex. Civ. App. 1950) ("Our judicial system, in which the right to trial by jury is held inviolable, denies the right of a trial judge, in the presence and hearing of the jury, to comment upon the credibility of a witness or the weight to be given his testimony."). A Kansas court held on the same lines that the "trial court errs when it instructs the jury that as a matter of law, an element of the offense charged has been established by the evidence. Such instructions invade the province of the jury as the factfinder and violate the defendant's Fifth and Sixth Amendment rights to have the jury determine guilt or innocence." *State v. Potts*, 118 P.3d 692, 698 (Kan. Ct. App. 2005), *rev'd on other grounds*, 135 P.3d 1054 (Kan. 2006).

trial. If the jury ceases to serve as lie detector, then its power and value is seriously diminished—for what else would it do? If juries need to be protected, then the core functions of the jury, namely credibility assessments, may need to be strengthened and shielded from outside intrusion. We are sentimental about the value of human jurors, because of the constitutional and emotional desire to keep this institution preserved.²⁰⁶ But in other areas of trial, we are afraid of this contract we have made—inventing rules like FRE 403 to alleviate the storm that the emotional juror can brew.²⁰⁷

The outer bounds of accepting emotion in credibility assessments have been tested in cases regarding possible juror dismissal. In *People v. Varela*,²⁰⁸ the appellate court was asked to evaluate whether a juror should have been dismissed based on her emotional state.²⁰⁹ The court searched the record and found no facts “assert[ing] that her emotional state rendered her unable to deliberate.”²¹⁰ They found the case “sharply distinguishable” from *People v. Collins*,²¹¹ where a juror requested removal because she was unable to follow the jury instructions, was upset, and “stated several times that she could not decide the case on the evidence and the law since she was involved emotionally more than intellectually.”²¹² The bar for dismissal appears to be quite high, even though it is discretionary. And here, too, the justification for the dismissal was affective blindness or the perceived conflict between emotion and cognition.

206. See *Dimick*, 293 U.S. at 486 (“Maintenance of the jury as a fact-finding body is of such importance and occupies so firm a place in our history and jurisprudence that any seeming curtailment of the right to jury trial should be scrutinized with the utmost care.”); see also *United States v. Adams*, 271 F.3d 1236, 1246 (10th Cir. 2001) (describing the jury’s role to make credibility assessments as “vital and exclusive”); Ric Simmons, *Conquering the Province of the Jury: Expert Testimony and the Professionalization of Fact-Finding*, 74 U. CIN. L. REV. 1013, 1064 (2006) (discussing society’s psychological and emotional desire to keep credibility determinations in the hands of juries); Suja A. Thomas, *Judicial Modesty and the Jury*, 76 U. COLO. L. REV. 767, 792–793 (2005) (arguing that constitutional principles, such as federalism and the separation of powers, call for restraint of judicial actors in favor of preserving the function of the jury).

207. Jody Lyneé Madeira, *Lashing Reason to the Mast: Understanding Judicial Constraints on Emotion in Personal Injury Litigation*, 40 U.C. DAVIS L. REV. 137, 139 (2006) (“[J]urors are exposed to evidence thought likely to lure them into treacherous, irrational waters, necessitating that legal practice make every effort to lash their judgment to the evidentiary mast. Thus, a number of constraining principles and rule systems have evolved to escort jurors safely through perilous seas of sentiment, lest reason be wrecked.”).

208. No. H022985, 2003 WL 1950390 (Cal. Ct. App. April 25, 2003).

209. *Id.* at *8–9.

210. *Id.* at *10–11.

211. 552 P.2d 742 (Cal. 1976).

212. *Varela*, 2003 WL 1950390, at *10 (quoting *People v. Collins*, 552 P.2d 742, 748 (Cal. 1976)). In *Collins*:

The juror said she arrived at her state of mind prior to the commencement of deliberations and that her professed inability to follow the court’s instructions was not the result of anything that had occurred since deliberations began. The extensive hearing in which the juror steadfastly maintained that she could not follow the court’s instructions, that she had been upset throughout the trial and that she wanted to be excused . . . established good cause for her discharge.

Collins, 552 P.2d at 748.

What should judges do when attorneys attempt to alter credibility assessments by appealing to jurors' emotions? The testimony of those in power could obviously influence lay-jurors, replacing their individual responses with those of the "legal experts." States have responded differently to the question of how far counsel can go to appeal to the jurors' emotions.²¹³ Attorneys are often permitted to display some aspects of emotion during their closing arguments, but they are "not permitted to appeal to the emotions and prejudices of the jurors."²¹⁴

As an attorney, it would be difficult to know in advance when you have crossed that line.²¹⁵ In one case, the prosecutor invited the jurors to use their emotions when she stated, "[Y]ou can use your experience, your emotions to evaluate the evidence and the testimony, and decide the credibility of the witnesses and the evidence that's presented before you. So, don't do it in a vacuum because that's why you were all chosen."²¹⁶ This statement was considered improper because it invited jurors to use their emotions to guide them.²¹⁷ In Connecticut, there are many cases where prosecutorial statements were deemed improper because they invite juror emotions.²¹⁸ However, if a witness's credibility is attacked, rehabilitation may be allowed with more forgiveness to its emotional content.²¹⁹

In some ways the state diversity related to propriety of "emotional" closing arguments reflects the practical reality that rules cannot control jury deliberations. Rule 105, Rule 403, the "anti-Golden-Rule," and sentencing instructions each provide a tool for entertaining the fiction that we can control jurors' ultimate reliance on emotions throughout the presentation of evidence. We may know these rules rarely work, but they give the emperor respectable clothing. Yet at the near endpoint of credibility assessments and closing arguments, we are more open in acknowledging the fictions for what they are. The disconnect between the instruc-

213. "If exercise of trial court's discretion to grant or not to grant probation is based upon reason rather than emotion, it will not be disturbed . . ." *State v. Cornwall*, 518 P.2d 863, 867 (Idaho 1974).

214. J. ALEXANDER TANFORD, *THE TRIAL PROCESS: LAW, TACTICS AND ETHICS* 385–86 (3d ed. 2002); see also Neil R. Feigenson, *Sympathy and Legal Judgment: A Psychological Analysis*, 65 TENN. L. REV. 1, 17 (1997) ("By tolerating emotional utterances and emotional displays by lawyers to the extent that they relate to the evidence, the law forbids not emotion per se, but only emotions unrelated to the facts of the case—a seeming acknowledgment that emotional judgment, while generally undesirable, is inevitable." (footnotes omitted)).

215. Daniel Medwed, *Closing the Door on Misconduct: Rethinking the Ethical Standards that Guide Summations in Criminal Trials*, 38 HASTINGS CONST. L.Q. 915, 946 (2011) (discussing how advisory bodies like the American Bar Association Task Force to Revise the Prosecution and Defense Standards must provide examples in advance of what counts as inappropriate prosecutorial appeals to emotion in order for attorneys to know ex ante when lines are about to be crossed).

216. *State v. Sells*, 844 A.2d 235, 244 (Conn. App. Ct. 2004) (internal quotation marks omitted), *overruled on other grounds by State v. Kemah*, 957 A.2d 852 (Conn. 2008).

217. *Id.* However, the statement was isolated and not egregious, so it did not result in a mistrial. *Id.*

218. *State v. Salamon*, 949 A.2d 1092, 1130 (Conn. 2008).

219. See *State v. Thomas*, 955 A.2d 1222, 1232–33 (Conn. App. Ct. 2008).

tions and the jury deliberation process is obvious, as the jurors are about to leave the courtroom to deliberate. They will be relying on a myriad of facts, emotions, and memories of the trial, and will be working out whom to believe largely by themselves. This may be why reviewing courts are more forgiving toward emotional processes at the final stages of trial—to preserve the legitimacy and finality of trials when we can no longer pretend that the jurors credibility assessments are under our judicial control.

B. Credibility Assessments Require Theory of Mind, Theory of Mind Requires Empathy

Another, less cynical, reason we might be more forgiving of emotion in credibility assessments is because we are ignorant to the emotional processes required to perform this function. Without explicitly describing it this way, assessing credibility requires theory of mind (ToM). And theory of mind, as we will see, requires some form of empathy. ToM, or mentalizing, is the ability to consider the mental states of others, and recognize that not only are they different from yours, but in fact they might be in conflict with the individual's overt speech or behavior (i.e., she might be lying). While we may not be familiar with the theory, we are all familiar with the practice. You know that others cannot get inside your head and know everything you know and feel everything you feel. This allows us to hide our true thoughts: to deceive. For if others knew our thoughts, or we merely *thought* they did, this would make it much less likely that we would lie.

ToM has been chiefly studied in the context of false beliefs and intent. According to some it may only be present in higher-order primates, and likely works through something known as mirror neurons.²²⁰ ToM probably emerges around the age of four, and aspects of it appear to be impaired in people with severe autism or psychopathy.²²¹

220. Norman, Cacioppo & Berntson, *supra* note 9, at 64 (“Mirror neurons are a network of cells within the premotor cortex which respond to the sight of particular actions and their associated motor patterns, whether the individual performed or merely witnessed the actions of others. . . . [This] may have evolved specifically to facilitate action understanding. . . . [And], within higher primates, this system may have been elaborated to support social imitation learning through real-time activation of the motor properties within the mirror neuron system. . . . [T]he putative mirror neuron system has progressed beyond the mere physical aspects of an action, to the ability to predict underlying intentions, thoughts, and feelings that motivated the particular action through reciprocal connections with other limbic and prefrontal structures.” (footnotes omitted)). See generally J. A. C. J. Bastiaansen, M. Thioux & C. Keysers, *Evidence for Mirror Systems in Emotions*, 364 PHIL. TRANSACTIONS ROYAL SOC’Y B 2391, 2391 (2009) (“[O]bserving the actions and tactile sensations of others activates premotor, posterior parietal and somatosensory regions in the brain of the observer which are also active when performing similar movements and feeling similar sensations. . . . [The article examines] recent experimental evidence suggest[ing] that motor simulation may be a trigger for the simulation of associated feeling states.”).

221. Adolphs, *supra* note 67, at 171, 174. For research complicating previous findings based on a more nuanced view of adult theory of mind, see R.A. Richell et al., *Theory of Mind and Psychopathy: Can Psychopathic Individuals Read the ‘Language of the Eyes’?* 41 NEUROPSYCHOLOGIA 523, 523-26 (2003).

Theory of mind is crucial for making all kinds of credibility determinations. Specifically, determining “culpability and liability frequently require[s] inferences about the motives, goals, intentions, and emotions of the actors involved.”²²² These mental determinations are critical to the legal system and involve complex brain processes that require empathy, deduction, and common sense.²²³ When jurors decide whether a criminal defendant had the requisite *mens rea*, whether the prosecutor’s key witness is telling the truth, if the white-collar criminal feels remorse, or whether the custodial parent loves their child, they are engaging ToM.

Empathizing, which is the ability and drive to know someone’s emotions and thoughts, is a key ingredient to ToM.²²⁴ Empathizing is likely a non-unitary construct with several component parts: cognitive empathy (usually dubbed mentalizing, as described above), emotional contagion²²⁵ (mimicking the facial expressions and emotions of those around us, and thus converging on a social experience), affective empathy (feeling your pain), and sympathy (understanding your pain).²²⁶ Empathizing goes further than merely calculating others’ feelings (as psychopaths can do this), but rather involves the triggering of an appropriate emotional response in the observer.

Empathizing is a complex process, contingent on perception, interpretation, and affective responses to other actors. There are considerable individual and sex differences in empathy, with women performing this function better than men.²²⁷ Empathizing may be implicit; that is, “people seem to represent the emotional states of others quite automatically without having to engage in deliberative thinking.”²²⁸ Empathizing may also be sensitive to cognitive appraisal, as we will see below.

Many prominent neuroscientists argue that there is a functional interdependence between cognitive and affective ToM, pointing to a crucial role of the right DLPFC (dorsolateral prefrontal cortex) within neural networks mediating cognitive ToM.²²⁹ Even so, and interestingly, some

222. Lubell et al., *supra* note 1, at 418.

223. See Todd F. Heatherton, *Neuroscience of Self and Self-Regulation*, 62 ANN. REV. PSYCHOL. 363, 370–71 (2011) (“[L]iving harmoniously in social groups requires that we be able to interpret the emotional and mental states of others. . . . ToM enables individuals to empathize and cooperate with others” (citations omitted)).

224. The word “drive” is used, even though empathy can be the result of learned experience and skill.

225. See generally Elaine Hatfield, John T. Cacioppo, Richard L. Rapson, *Emotional Contagion*, 2 CURRENT DIRECTIONS PSYCHOL. SCI. 96 (1993).

226. *Id.*

227. Christine Mohr, Angela C. Rowe and Olaf Blanke, *The Influence of Sex and Empathy on Putting Oneself in the Shoes of Others*, 101 BRITISH JOURNAL OF PSYCHOLOGY 277, 278 (2010); Bhismadev Chakrabarti & Simon Baron-Cohen, *Empathizing: Neurocognitive Developmental Mechanisms and Individual Differences*, 156 PROGRESS BRAIN RES. 403, 403–405 (2006).

228. Lubell et al., *supra* note 1, at 418 (“These automatic empathic responses can be modulated by perceived fairness, similarity, or affective link to the other.”).

229. See Elke Kalbe et al., *Dissociating Cognitive from Affective Theory of Mind: A TMS Study*, 46 CORTEX 769, 770 (2010) (citing PJ Eslinger, *Neurological and Neuropsychological Bases*

researchers have used transcranial magnetic stimulation to find support for a distinction between affective and cognitive theory of mind. Put another way, there appear to be functional differences between the brain areas involved in surmising another's emotions and surmising another's thoughts.²³⁰ This does not, however, mean that the two processes are completely distinct in the healthy, unaltered brain. But it does suggest that in some narrow circumstances, the dichotomy between emotion and reason may have a neurological base.

To demonstrate that empathy is a component of ToM, Tania Singer's lab generated a thought experiment, where the cognitive and emotional perception of pain interact. When we see a subject experience pain, we automatically mirror this pain response in our own brains.²³¹ However, when we are told that the subject is a masochist and thus the pain is pleasurable to her, this response can be attenuated through cognitive regulation.²³² This suggests that the two can be related but can also be disassociated. They likely rely on different developmental pathways, with mentalizing developing much later in life than empathizing. Even so, the "two developmental pathways also interact"²³³ psychologically and neurologically. Empathy and cognition are intertwined.

Because credibility assessments require ToM, and ToM requires empathy, transitively, credibility assessments require empathy. Through the function of ToM, empathizing is revealed as crucial to the trial process. Empathizing assists us in making credibility determinations, by mirroring the witness's testimony, checking it against our own set of knowledge, beliefs, and feelings, to see if we think it is trustworthy and sincere. Critically, empathic processes then generate a feeling inside of us: justice, sadness, frustration, pity, mercy, or anger. This is therefore where we shift from a discussion of empathy *per se*, and move into the ways in which moral reasoning requires theory of mind and empathy.

of Empathy, 39 EUR. NEUROLOGY 193 (1998)). Imaging studies consistently show that ToM preferentially activates the medial prefrontal cortex (MPFC) and the temporo-parital junction (where the temporal lobe meets the parietal lobe). Heatherton, *supra* note 223, at 371.

230. Kalbe et al., *supra* note 229, at 777.

231. Christian Keysers, Jon H. Kaas & Valeria Gazzola, *Somatosensation in Social Perception*, 11 NATURE REVIEWS NEUROSCIENCE 417, 425 (2010) ("Taken together, these data indicate that we can share the pain of others in two ways. If all we know is that the observed person is in pain, we share the affective aspects of their distress through vicarious activity in the anterior insula and rCC. If, however, we focus on the somatic causes of that pain, we additionally share its somatic consequences by vicariously recruiting [visceral pain areas of the brain].").

232. Kevin McCabe & Tania Singer, *Brain Signatures of Social Decision-Making*, in BETTER THAN CONSCIOUS? DECISION MAKING, THE HUMAN MIND, AND IMPLICATIONS FOR INSTITUTIONS *supra* note 1, at 103, 119.

233. Tania Singer, *The Neuronal Basis and Ontogeny of Empathy and Mind Reading: Review of Literature and Implications for Future Research*, 30 NEUROSCIENCE & BIOBEHAVIORAL REVIEWS 855, 861 (2006).

C. Theory of Mind, Empathy, and Moral Reasoning

From a very early age, empathy facilitates ToM. It does so by helping us understand where others are coming from, how they feel, and what they know.²³⁴ This in turn allows us to make judgments about what is a fair way to treat people. Without functioning empathy processes, we would be unable to infer what is going on inside the heads of others. This means we also would not be able to engage in informed moral reasoning based on our assessments of the individual's intent and credibility. Many studies show that as the intent of a moral violator increases, so does the moral blameworthiness and severity of punishment levied by subjects.

Research shows that this ToM ability develops over time and is not innate. When given information about intentional harms versus unintentional acts that result in unintentional harms, young children justify their moral judgments based more on the outcome than the actor's intention. For example, someone who intends to give a traveler correct directions but accidentally gets him lost is judged to be "naughtier" than a person who maliciously wants to give incorrect directions but accidentally directs the traveler to the correct spot.²³⁵ The preference for judging based on intent rather than outcome develops as we age. This reflects not only the development of ToM, but also our ability to integrate information about mental states and moral consequences in order to judge behavior as morally wrong.

Patients who have trouble mentalizing due to frontotemporal dementia also have trouble with moral reasoning, emotion, empathy, and executive function. They can operate according to social rules, but they are incapable of rating the seriousness of moral and conventional transgressions appropriately.²³⁶ This suggests anatomical diversity in the process, and an interdependence between empathy, executive function, and moral judgment.

Deficits of ToM can play out differently, depending on what else is working in the brain. Because a tumor or functional deficit in a brain area affecting either classical cognition (memory, face perception) or emotion (empathy) is likely to affect ToM, many researchers posit that ToM relies critically on both "emotional" and "cognitive" systems.²³⁷

234. Lubell et al., *supra* note 1, at 418; also Adolphs, *supra* note 67, at 171, 174.

235. Liane Young, Fiery Cushman, Marc Hauser & Rebecca Saxe, *The Neural Basis of the Interaction Between Theory of Mind and Moral Judgment*, 104 PROC. NAT. ACAD. SCI. 8235, 8235 (2007) (discussing JEAN PIAGET, *THE MORAL JUDGMENT OF THE CHILD* (1932)).

236. Sinclair Lough et al., *Social Reasoning, Emotion and Empathy in Frontotemporal Dementia*, 44 NEUROPSYCHOLOGIA 950, 950 (2006); Christopher M. Kipps & John R. Hodges, *Theory of Mind in Frontotemporal Dementia*, 1 SOC. NEUROSCIENCE 235, 236–237 (2006).

237. Rajendra D. Badgaiyan, *Theory of Mind and Schizophrenia*, 18 CONSCIOUSNESS & COGNITION 320, 321 (2009).

Given how valuable empathizing is to evaluating social scenarios, it remains a process that is often explicitly discouraged in jurors. Its value is explicitly rejected in FRE 105, FRE 403, the “anti-Golden-Rule rule,” and sentencing instructions. This is likely because we have no idea how often empathizing is reflexive, automatic, and valuable to credibility assessments and moral reasoning.²³⁸ We have little understanding of how crucial empathizing is to many aspects of trial.

The complicated processes involved in ToM are only now being parsed out. Even so, we do know quite a bit about how it works, and how this process can lead to unfair results. First, in what Kevin McCabe has labeled the “egocentric” bias, we may judge others as having mental states similar to ours, based on perceived physical or personality similarities. Thus, the fellow Sikh who looks like me may not have mental states that are like mine, although I might naturally think so. Jurors could also engage in a “misattribution” bias, where one incorrectly relies on stereotypes, ignoring the possible similarities between oneself and others. These two processes appear to be functionally segregated in the brain, with mentalizing about people we find similar to us engaging one part of the mPFC (medial prefrontal cortex) and a more dorsal part being active when we mentalize about people we view as dissimilar. What these data suggest is that the process of knowing someone’s thoughts depends on different brain regions, may be a result of skill, and likely also overlaps with our ability to relate to others. Of course, none of this suggests that it is impossible to soften our empathic urges through deliberate means, but it might be harder than we think.

Softening our empathic urges can be done through “reappraisal” and self-regulation, where individuals modulate feedback to relearn associations and mitigate implicit biases.²³⁹ We humans are capable of changing our perspectives based on updated information, often through taking the perspective of a victimized other. For example, if an expected guest misses your dinner party and does not call to let you know she is not coming, you might feel irritated at her for having a selfish mental state. After all, she was supposed to bring the dessert! However, once you

238. Young, Cushman, Hauser, & Saxe, *supra* note 235 at 8268 (“The results of the current study suggest that moral judgments depend on the cognitive processes mediated by the RTPJ [right tempoparietal junction], previously associated with belief attribution, and, to a lesser extent, the PC [precuneus], LTPJ [left tempoparietal junction], and MPFC [medial prefrontal cortex], which compose a network of brain regions implicated in theory of mind.”).

239. See Adolphs, *supra* note 67, at 167 fig.1 (“Reappraisal and self-regulation are particular modes of feedback modulation whereby evaluation and emotional response to social stimuli can be volitionally influenced.”); see also Sophie Lebrecht et al., *Perceptual Other-Race Training Reduces Implicit Racial Bias*, 4 PLOS ONE 1, 3–5 (2009); Blair et al., *supra* note 86, at 438 (discussing emotional regulation through reappraisal); Gyurak et al., *supra* note 167, at 151 (showing that verbal fluency scores predicted successful regulation of emotion). The “harder” reappraisal task is associated with activation of regions of the prefrontal cortex (PFC). See Robert M. Sapolsky, *The Frontal Cortex and the Criminal Justice System*, 359 PHIL. TRANSACTIONS ROYAL SOC’Y B: BIOLOGICAL SCI. 1787, 1791 (2004).

learn that she was in a terrible car accident, the irritation will quickly transform into sympathy.²⁴⁰ Another example involves viewing a woman crying in front of a church. You may feel sad until you are told that her daughter just got married, at which point your sadness may turn to joy. In fact, in the lab, researchers can get subjects to be more empathic and more willing to assist third parties merely by asking them to “try hard to take another person’s perspective.”²⁴¹ The empathy that can result from perspective-taking may in turn motivate one to examine why he may have taken the other person’s side initially, which can lead to deliberation about important moral principles.

While cross-examination and explicit jury instructions can ferret out and then mitigate *some* inappropriate emotions, it remains to be asked whether they should. Even if the answer to this question is yes, it is naïve to think that instructions can do the job, particularly if the emotional process is unconscious, automatic, deeply engrained, or difficult to extinguish. Our naïveté regarding the power of cross-examination and instructions to mitigate bias is perhaps enabled by a bit of hubris. Because we humans can examine some of the contents of our mind, our memories, and opinions, we sometimes “create the illusion that we control more about ourselves . . . than we actually do, and that we know what our preferences are and why we have them.”²⁴² This fuels the fiction that we can put our prejudice aside when told to do so, even while our implicit attitudes are automatically and unconsciously affecting our behavior. Even so, more work should be done in realistic mock jury settings to determine how much impermissible bias (however related or unrelated to emotion) might be mitigated through explicit instructions.

To conclude this section, I will briefly summarize the rules and practices that embody the false dichotomy between emotion and reason, and that are, in some way or other, blind to the role of affect. First, the ubiquitous practice of instructing jurors to disregard emotional testimony, or only use it for its unemotional purpose, is a practical fiction. It assumes that our cognitive faculties can consciously access and then squash emotional processes, and that we can segregate the emotional from the unemotional rather handily. Second, it fails to appreciate that

240. See David A. Pizarro & Paul Bloom, *The Intelligence of Moral Intuitions: Comment on Haidt (2001)*, 110 PSYCHOL. REV. 193, 194 (2003) (explaining how taking the perspective of the victimized other after new information has come to light can change one’s perspective on and appraisal of a given situation); see also Peter Sokol-Hessner et al., *Thinking Like a Trader Selectively Reduces Individuals’ Loss Aversion*, 106 PROC. NAT’L ACAD. SCI. 5035, 5035 (2009) (“[T]he intentional cognitive regulation strategy, which emphasized ‘perspective-taking,’ uniquely reduced both behavioral loss aversion and arousal to losses relative to gains, largely by influencing arousal to losses.”).

241. Pizarro & Bloom, *supra* note 240, at 194 (citing C. D. Batson et al., *Five Studies Testing Two New Egoistic Alternatives to the Empathy-Altruism Hypothesis*, 55 J. PERSONALITY & SOC. PSYCHOL. 52 (1988)).

242. Damian Stanley, Elizabeth Phelps & Mahzarin Banaji, *The Neural Basis of Implicit Attitudes*, 17 CURRENT DIRECTIONS PSYCHOL. SCI. 164, 164 (2008).

when instructing people either to disregard emotional evidence or to not engage emotional processes themselves, the individual likely cannot comply, and in fact, the instruction might backfire. Next, I analyzed the under-theorized practice of equating emotional evidence with bias under FRE 403. This rule is often used to exclude evidence that is thought to arouse too much emotion. Typically, in practice, it is accompanied by a very crude examination of what the emotion is, and why exactly it generates bias. Third, I reviewed the anti-Golden-Rule rule, where judges discourage jurors from being sympathetic in their assessment of damages. I argue that this is impossible for jurors to do. Otherwise, how else would they determine damages? The false dichotomy between reason and emotion runs throughout the sentencing instructions, with sharply different instructions in aggravation and mitigation hearings. In the former, but not the latter, sympathy is equated with bias and subjectivity, despite its critical role in social decision-making. Following this, I turned to the heat of passion instructions, where it is theorized that emotions can impair reasoning to such a degree that an intentional murder can be reduced to voluntary manslaughter. Then, I reviewed the psychological understanding of the excited-utterance hearsay exception, where the false dichotomy rears its head again to admit emotional hearsay testimony made under stress, as the emotion shuts down the particular reasoning of prevarication. Finally, I concluded with some thoughts about the role of emotion in something that runs across all of these practices: credibility determinations. I argue that credibility assessments require theory of mind, which in turn requires some form of empathy. Thus rather than seeking to remove empathy from juror decision-making, we might learn to recognize its value in credibility assessments.

V. EMPIRICAL DATA FROM COGNITIVE SCIENCES OBLITERATES THE FOLK ASSUMPTIONS UNDERNEATH MANY OF OUR EVIDENTIARY PRACTICES

The notion that we can make choices with either our heart (emotion) or head (reason) was first proposed in early philosophical writings, and this distinction persists to this day in common language, legal reasoning, as well as scientific investigations. A primary contention of this dual selves approach is that emotion and reason compete with one another when arriving at a decision.

. . . [T]here is clearly some intuitive appeal in viewing decision-making this way. However, there are also numerous problems which lead us to suggest that the model is simply too simplistic, as well as unrealistic, to capture the role of emotion in decision-making.²⁴³

The following section will address how the cognitive sciences can inform this confusion over the proper role of emotion in evidence prac-

243. Platt et al., *supra* note 43, at 136.

tice. Through peer-reviewed neuroscience and behavioral data, I will demonstrate why the dichotomy between emotion and reason is empirically incorrect. Rather than always competing, the two processes are often, though not always, structurally interconnected and functionally interdependent in the brain.²⁴⁴

A. What Are Cognitive and Affective Neuroscience, and How Can They Inform Evidence Laws?

This is where we turn to the fields of cognitive, affective, and social neuroscience to see how the data contribute to this discussion. But first, I will define each field. Cognitive neuroscience is the study of our process of knowing, or cognition—stemming from awareness, perception, and reasoning—married with neuroscience, which is the study of the brain and its nervous system.²⁴⁵ This forty-year-old field has simultaneously provided exciting support and trenchant critiques for the traditional psychology and biology of how humans think. Overall, this has drastically improved our theoretical framework and provided some ideas as to the mechanisms underlying how humans learn, make complex observations and decisions, and how we form memories. The complementary field of affective neuroscience is the study of the neural mechanisms of emotion. Depending on whom you ask, affective neuroscience is either a subpart of cognitive science or a separate but related field.

Affective neuroscience combines the study of emotion, mood, and personality to understand how these drive, and are driven by, higher order cognitive functions. In the last few decades, many researchers have dedicated their careers to uncovering the complexity of humans' emotional processes and localizing these mental functions in the brain. To disambiguate emotional processes from cognitive ones, at least in the ways the terms have been used in the past, I will label tasks as "cognitive" when they involve perceiving, attending, evaluating, reasoning, and deciding, even though my thesis is that this term can also encompass emotion. Taken together, researchers in these twin fields have obliterated the folk psychological assumptions identified in the previous section.

244. Richard J. Davidson, *Seven Sins in the Study of Emotion: Correctives from Affective Neuroscience*, 52 *BRAIN & COGNITION* 129, 129 (2003) ("This brief commentary highlights seven sins in the study of emotion that are explicitly treated in contemporary affective neuroscience. These sins are (1) affect and cognition are subserved by separate and independent neural circuits; (2) affect is subcortical; (3) emotions are in the head; (4) emotions can be studied from a purely psychological perspective; (5) emotions are similar in structure across age and species; (6) specific emotions are instantiated in discrete locations in the brain; and (7) emotions are conscious feeling states. Each of these is briefly discussed and evidence from affective neuroscience that bears on these sins is noted.")

245. GAZZANIGA, IVRY & MANGUN, *supra* note 43, at xiii.

B. Emotional and Rational Processes Can Neatly Be Divided, and by Attending to Our Emotions, We Can—and Should—Use Our Cognitive Faculties to Squash Them

First, cognitive science obliterates the notion that emotion and reason writ large can be neatly divided. Based on how deeply embedded the false dichotomy is in our popular culture, it should be no surprise that it persevered in the brain sciences as well.²⁴⁶ This is exhibited both in how graduate programs are organized, and in how brain regions have been studied. In the past, psychologists focused on the mechanisms of “rational deliberation and the development of cognitive abilities” before recognizing the role of emotions and intuitive impulses.²⁴⁷ The preference in psychology for top-down, executive rationalism might be because it is easier to inspect and verify the verbal reasoning of subjects than it is to inspect emotions and intuitions through self-report or proxies such as pupil dilation, sweating, blood pressure, hormone levels, metabolites, or heart rate.²⁴⁸

For many years cognitive science has thus preferred rational processes, treating minds like computers. The field was “more interested in how people . . . solve logical problems or play chess than in why we are sometimes happy and sometimes sad.”²⁴⁹ As Alan Sanfey has noted, “[c]lassical models of decision-making have largely ignored the influence of emotions on how decisions are made, but recent research has begun to demonstrate the powerful effect these factors play.”²⁵⁰ Even now that many of the cutting edge brain scientists are looking at social and affective cognition, researchers still try to answer which would win in a competition: emotion or reason.²⁵¹ Put differently, many are still asking which pathway is the dog and which is the tail.²⁵² This debate

246. See LEDOUX, *supra* note 18, at 11. To be sure, even neural substrates themselves that were once thought to be dichotomous have recently been reported to not be. See, e.g., Amit Etkin, Tobias Egner & Raffael Kalisch, *Emotional Processing in Anterior Cingulate and Medial Prefrontal Cortex*, 15 TRENDS COGNITIVE NEUROSCIENCES 85, 85 (2011) (“[C]ontrary to the traditional dichotomy, both subdivisions make key contributions to emotional processing. Specifically, dorsal-caudal regions of the ACC and mPFC are involved in appraisal and expression of negative emotion, whereas ventral-rostral portions of the ACC and mPFC have a regulatory role with respect to limbic regions involved in generating emotional responses.”).

247. Pizarro & Bloom, *supra* note 240, at 193; see also Antoine Bechara, *The Role of Emotion in Decision-Making: Evidence from Neurological Patients with Orbitofrontal Damage*, 55 BRAIN & COGNITION 30, 36 (2004) (“[W]e argue that impulsiveness, which usually means the lack of response inhibition, is fundamentally different from decision-making, both cognitively and anatomically.”); Darlow & Sloman, *supra* note 1, at 385 (“While affect may be an essential property or heuristic of intuitive decision-making, there is little evidence of it at this point.”).

248. Haidt, *supra* note 116, at 825.

249. LEDOUX, *supra* note 18, at 20.

250. Sanfey, *supra* note 40, at 600.

251. See Luiz Pessoa, *On the Relationship Between Emotion and Cognition*, 9 NATURE REV. NEUROSCIENCE, 148, 148 (2008).

252. See, e.g., Pizarro & Bloom, *supra* note 240, at 194.

over whether cognition controls emotion or emotion triggers cognition continues to thrive in the literature of moral judgment.²⁵³

The valuable role of emotion in moral judgment is reflected in Jonathan Haidt's work. In his "social intuitionist" model, Haidt argues that moral judgments are typically the products of effortless and automatic intuitions, rather than on articulable, conscious reasons, which he argues are post-hoc constructions.²⁵⁴ To Haidt, some moral judgments do not rely on reasoning. This is very interesting; because if he is right, then we are fooling ourselves by thinking we can and should dampen emotion during the heavily moralistic trial. Haidt analyzes social psychology data to demonstrate that while there may be a weak link between moral reasoning and moral action, there is a strong link between moral *emotions* and actions.²⁵⁵ A variant on this can be seen in "moral dumbfounding" where we have strong gut responses to some behavior such as post-fertility adult incest, but cannot articulate reasons why. Other scholars have disagreed with this view, finding evidence that moral judgments necessitate coterminous cognitive processing.

One study posited that according to the social intuition model where emotions guide our impulses, "jurors who are affected by emotion . . . might fail to convince their fellow jurors, while jurors whose opinions are based on rational evidence deliberation might be more persuasive."²⁵⁶ However, this misunderstands the social intuitionist model, as we can often construct rational bases for these emotions *ex post* that can be rather convincing (i.e., you do not know why you find same-sex marriage to be so viscerally wrong, but you justify its prohibition by focusing on other specious-to-some-rational-to-others harms to society). It is also the case that emotional arguments, depending on the context, may be quite convincing. The role of emotion is far too complicated and contextual to

253. See Jana Schaich Borg et al., *Consequences, Action, and Intention as Factors in Moral Judgments: An fMRI Investigation*, 18 J. COGNITIVE NEUROSCIENCE 803, 803-04 (2006) ("Hume (1888) and many utilitarian philosophers based morality on emotion or sentiment via what the former called 'sympathy' and what contemporary psychologists call 'empathy.' In their view, core moral judgments arise from an immediate aversive reaction to perceived or imagined harms to victims of actions that are judged as immoral only after and because of this emotional reaction. In contrast, Kant (1959) insisted that his basic nonutilitarian moral principle (the categorical imperative) could be justified by pure reason alone, and particular judgments could then be reached by reasoning from his basic principle, all without any help from emotion. Although somewhat transformed, this fundamental debate still rages among philosophers today. . . . Studies using functional magnetic resonance imaging (fMRI) surprisingly suggest that neither Kant nor Hume had the whole truth, and that some moral judgments involve more emotion whereas others involve more reasoning.").

254. Haidt, *supra* note 116, at 822 ("However, if people have no access to the processes behind their automatic initial evaluations then how do they go about providing justifications? They do so by consulting their a priori moral theories.").

255. See *id.* at 823-24.

256. Salerno & Bottoms, *supra* note 77, at 291.

predict its impact in any given case. This is only magnified in social settings.²⁵⁷

So if we struggle to tease out emotion from cognition in behavior, what does a functional scan of the brain tell us? A fascinating experimental philosophy study used brain imaging to investigate whether different brain structures are recruited when subjects engaged in conventional moral judgments.²⁵⁸ Specifically, the researchers discovered that brain areas traditionally connected to emotion were preferentially recruited when subjects were asked to judge intentional, as opposed to unintentional, harms to people. This has obvious implications for jury trials, as determining whether a defendant had the requisite *mens rea* may automatically engage circuitry thought to be involved in emotional processing. Of course, we do not need to cow-tow to biology, but the data do provide strong accounts of emotion moderating important jury functions.

In all likelihood, the answer to this debate over whether emotion wags cognition's tail, or vice-versa, depends on the specific emotion and context. But at the neuroanatomical level, it is difficult to even label structures as either cognitive or emotional. In the next section, I will discuss how the structures traditionally thought of as "emotional" or "cognitive" are in fact interconnected. I will then discuss how they are functionally interdependent, and how this serves to shatter our folk psychological presumptions in the evidence practices I have outlined.

C. Anatomical Interconnectedness Between Emotion and Reason

There are multiple connected brain structures that work together to help us think and feel. Early neuroscientists thought that brain functions were somewhat localized; we mostly performed our "cognitive" processes with our prefrontal cortex, and our emotional ones with our primal, subcortical parts. This has been a sticky concept, tracking teleological and evolutionary tropes. While there is some structural localization, the structures do not work alone. Areas involved in emotional processing are incredibly interconnected with those involved in classical cognitive tasks.²⁵⁹

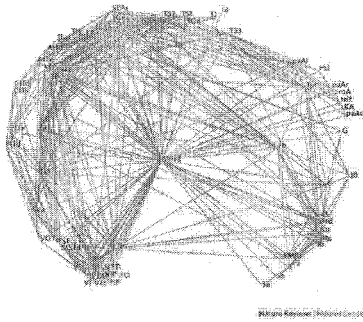
A structure that illustrates this beautifully is the amygdala.²⁶⁰ The amygdala is almond-shaped. It is also bilateral, meaning that there are

257. See Adolphs, *supra* note 67, at 167 fig.1 ("[T]he flow of social information defies any simple scheme for at least two reasons: it is multidirectional and it is recursive. . . . Processing routes differ in terms of their automaticity, cognitive penetrability, detail of the representations they involve and processing speed.")

258. Borg et al., *supra* note 253, at 803.

259. See ANTONIO R. DAMASIO, *DESCARTES' ERROR: EMOTION, REASON, AND THE HUMAN BRAIN* 175 (1994). Individuals with bilateral damage to these regions exhibit poor judgment and decision-making in the social realm.

260. See graph below.



two clusters on either side of the brain. The amygdala is preferentially activated when we hear blood-curdling screams, anticipate painful shocks, or see images of snakes. But it is also involved in other positive and negative emotional stimuli, such as the detection of eye gaze, or the perception of unfamiliar, happy, or sad faces.²⁶¹ It appears that the amygdala may be more selectively engaged

when moderating affective arousal, compared to other brain structures.²⁶² The rendering of the human brain below, illustrates other important brain structures that are involved in emotional processing. Notably, each of the brain structures discussed herein are neither cognitive nor emotional, but rather both. Part of the reason for this is the neuronal connectedness of these brain structures.

In an analysis by Young and colleagues, the amygdala was shown to be connected to all but eight cortical areas.²⁶³ These structural links are displayed in the graphic to the above left, with the amygdala appearing in the center (labeled “Amyg,” and all other labels indicating cortical areas, with the exception of the subcortical Hippocampus).²⁶⁴ As you can see, the projections involve multiple clusters, suggesting that not only is the amygdala extensively connected, but it may serve as a central connector hub that links multiple provincial hubs. You might therefore think of the amygdala as Atlanta’s airport, with its projections looking somewhat like the flight routes for Delta airlines. Because of its dense connectivity to cortical areas (and subcortical areas) the amygdala is considered a strong candidate for integrating information classically dubbed as emotional or cognitive.

The amygdala’s coordinating role between what we perceive, how we evaluate decisions, and how we act is complicated. The amygdala receives sensory information from the auditory, visual, olfactory, and somatosensory cortices, as well as from polysensory brain areas.²⁶⁵ Because of this, the amygdala can influence the “neural systems underlying

261. See Mary L. Phillips et al., *Neurobiology of Emotion Perception I: The Neural Basis of Normal Emotion Perception*, 54 *SOC’Y BIOLOGICAL PSYCHIATRY* 504, 505 (2003).

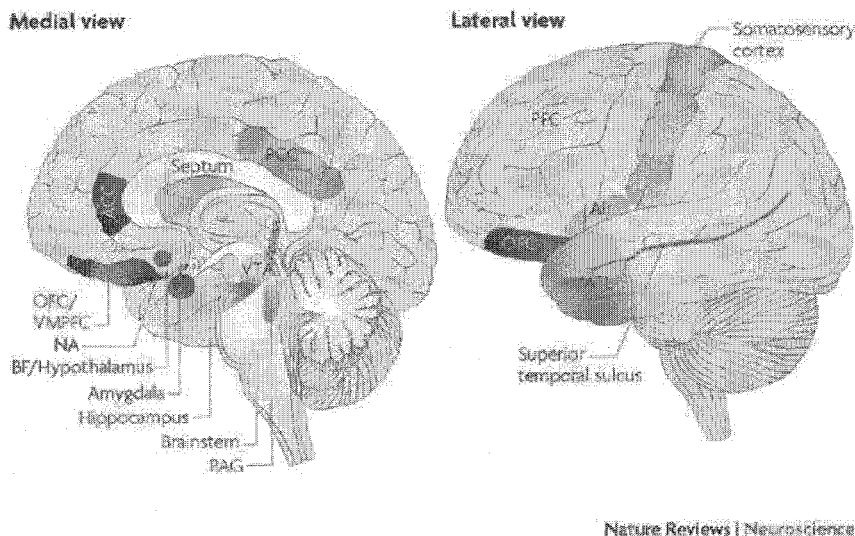
262. Gary G. Berntson et al., *The Insula and Evaluative Processes*, 22 *PSYCHOL. SCI.* 80, 80 (2011) (finding that, compared to the patients in the control-lesion group, individuals with insula lesions exhibited progressively reduced arousal ratings for progressively more pleasant or unpleasant pictures; results from this study also suggest that the amygdala is more responsive to, and may play a more selective role in, affective arousal, particularly with regard to negative emotional stimuli).

263. Pessoa, *supra* note 251, at 151 (discussing M. P. Young et al., *Analysis of Connectivity: Neural Systems in the Cerebral Cortex*, 5 *REV. NEUROSCIENCE* 227 (1994)).

264. Both images taken from *id.* at 149, 152.

265. C. Daniel Salzman & Stefano Fusi, *Emotion, Cognition, & Mental State Representation in Amygdala and Prefrontal Cortex*, 33 *ANN. REV. NEUROSCIENCE* 173, 177 (2010).

cognitive and social behaviors, in response to emotional cues.”²⁶⁶ The amygdala is also involved in highly cognitive functions such as attention and associative learning.²⁶⁷



The orbitofrontal cortex (OFC) is part of the prefrontal cortex generally, and gets its name from its location immediately above and behind the eye orbits, or sockets.²⁶⁸ It was originally viewed as critical for executive functions such as impulse control, but more and more research identifies it as also integral in emotional processing. Researchers have discovered that the OFC is implicated in assessing expected versus actual reward value,²⁶⁹ which might explain why individual differences are pervasive as individuals place different values on decision-making outcomes. Studies suggest that lesions in the OFC result in inability to update our representations of value, such as when the triggering stimuli switches from being aversive to pleasing.²⁷⁰ Based on such data, many

266. Elizabeth A. Phelps, *Emotion and Cognition: Insights from Studies of the Human Amygdala*, 57 ANN. REV. PSYCHOL. 27, 29 (2006); see also Adolphs, *supra* note 67, at 168 (“The amygdala is one structure that is anatomically positioned to participate in such post-perceptual processing, as it receives highly processed visual information from the anterior temporal cortices, and stores codes for subsequent processing of such perceptual information in other brain regions. In this way, it can influence memory, attention, decision making and other cognitive functions on the basis of the social significance of the stimuli that are being processed.”).

267. Pessoa, *supra* note 251, at 149.

268. Morten L. Kringelbach, *The Human Orbitofrontal Cortex: Linking Reward to Hedonic Experience*, 6 NATURE REV. NEUROSCIENCE 691, 693 (2005). Quite a bit of individual variability has been found in this structure, meaning that activation patterns between individuals are often pretty different in response to the same cues.

269. See, e.g., Edmund T. Rolls et al., *Expected Value, Reward Outcome, and Temporal Difference Error Representations in a Probabilistic Decision Task*, 18 CEREBRAL CORTEX 652, 656 (2007) (demonstrating that activations in the orbitofrontal cortex had a positive correlation with both expected value and reward magnitude).

270. Salzman & Fusi, *supra* note 265, at 181. However, this was not confirmed in a recent study of monkeys. *Id.* (citing Andy Kazama & Jocelyne Bachevalier, *Selective Aspiration or Neuro-*

theorize that this is precisely the purpose of emotions—to help us attach value to events and decisions. Thus, with its role in helping us evaluate expected and actual rewards, it is no surprise that the OFC is so intimately involved in emotional and cognitive processes and has many connections to other similar structures.

The OFC is more and more active when subjects view increasingly angry, but not sad, faces. This suggests that the OFC helps us explicitly label emotional faces as angry.²⁷¹ The subjective feeling of enjoying a good meal or appreciating a gambling victory also appears to be moderated by the OFC. Interestingly, the OFC seems to be more involved in the processing of cues that subjects are *explicitly told* to pay attention to, such as angry voices, while the amygdala appears to respond more to background stimuli to which we *do not specifically attend*. The two are likely acting together to update the value of a reinforcing stimuli in conditioned (Pavlovian) learning.²⁷² One study found that damage to the OFC impaired the ability to detect a social faux-pas by a confederate, suggesting that this brain region may assist our understanding of other people’s motives by engaging the emotions and feelings that accompany mimicked social interaction.²⁷³

In support of this idea, researchers discovered that “appreciation of humor, social-norm transgression resulting in embarrassment, viewing of erotic stimuli and elicitation of other moral emotions, all activate the medial prefrontal cortex.”²⁷⁴ The ventromedial prefrontal cortex (vmPFC) is either part of the OFC, or adjacent to it, depending on whose terminology you use. Like the previous brain structures, it is also critical to both emotion and reason. The vmPFC sits at the midline of the brain. It plays a key role in tying mental objects to bodily feedback to make emotional connections for use in decision-making.

One theory submits that as the likely value of punishment or reward has been evaluated, our bodies respond by providing a “somatic marker”. This leads to a feeling, which in turn becomes a relevant criterion in our decision-making calculus. Put another way, the process of decision-making depends in part on neural substrates that regulate emotion, feeling, and our body’s resting functions. Antonio Damasio and Antoine Bechara have labeled this the “somatic marker theory.” According to

toxic Lesions of Orbital Frontal Areas 11 and 13 Spared Monkeys’ Performance on the Object Discrimination Reversal Task, 29 J. NEUROSCIENCE 2794 (2009)).

271. See Megan L. Willis et al., *Orbitofrontal Cortex Lesions Result in Abnormal Social Judgments to Emotional Faces*, 48 NEUROPSYCHOLOGIA 2182, 2183 (2010).

272. Salzman & Fusi, *supra* note 265, at 181.

273. Valerie E. Stone et al., *Frontal Lobe Contributions to Theory of Mind*, 10 J. COGNITIVE NEUROSCIENCE 640, 646 (1998).

274. Adolphs, *supra* note 67, at 172.

their account, the vmPFC also has a hand in modulating emotions and our reactions to them.²⁷⁵

In 2004, a team studied the somatic marker theory using the Iowa Gambling Task in patients with complete autonomic failure.²⁷⁶ These patients have damaged peripheral autonomic nervous systems, meaning that their bodies cannot provide feedback to the brain from the peripheral nerves (everything outside of the brain and spinal cord—such as the nerves in the stomach, feet, etc.). Contrary to the somatic marker theory, apparently this population did not experience impairments in emotional performance, face expression identification, ToM, or social cognition tasks.²⁷⁷ While our body may provide feedback to inform our decisions, the somatic marker thesis does not explain how emotion guides decision-making in this population.²⁷⁸ Perhaps some other body structures compensated for the lost peripheral communication to the brain, the measurement of emotion was different, or, most likely, the autonomic nervous system is more complicated than we thought. Of course, this is just one study questioning the somatic-market hypothesis in one population.

The anterior insula (AI) is another brain structure simultaneously involved in both emotion and cognition. It is located in the deep folds between the temporal lobe and the frontal lobe in what is known as the lateral sulcus (also called the Sylvian fissure). The sulcus runs from your temples toward the back of your head at about a 45 degree angle. It is a highly recognizable feature of the human brain and develops by roughly the fourteenth week *in utero*. Activation in the insular cortex is strongly associated with certain feelings of disgust toward others.²⁷⁹ It is also correlated with our internal assessments of how much pain we are experi-

275. Bechara, *supra* note 247, at 30; *see also* Antoine Bechara, Hanna Damasio & Antonio R. Damasio, *Role of the Amygdala in Decision-Making*, 985 ANN. N.Y. ACAD. SCI. 356, 356–57 (2003).

276. The Iowa Gambling Task (IGT) is a common neuropsychological task that assesses subjects' decision-making under ambiguity. It is meant to replicate real-world decision-making, as the subjects select playing cards in order to win or lose money. The task allows researchers to study subjects' risk aversion versus risk taking. The IGT was first conceived to study the real-world deficits exhibited by patients with lesions in the ventromedial prefrontal cortex (VMPC). Daniela Di Giorgio Schneider et al., *Iowa Gambling Task: Administration Effects in Older Adults*, 1 DEMENTIA & NEUROPSYCHOLOGIA 66, 67 (2007).

277. H.C. Heims et al., *Social and Motivational Functioning Is Not Critically Dependent on Feedback of Autonomic Responses: Neuropsychological Evidence from Patients with Pure Autonomic Failure*, 42 NEUROPSYCHOLOGIA 1979, 1979 (2004).

278. *See* Platt et al., *supra* note 43, at 137 (“[S]imply changing the order or outcomes of the possible options has been shown to lead to the opposite result; that is, a stronger physiological response for the preferred option.” (citation omitted)).

279. M.L. Phillips, *Understanding the Neurobiology of Emotion Perception: Implications for Psychiatry*, 182 BRIT. J. PSYCHIATRY 190, 190 (2003). Interestingly, the insula is a neural correlate both for experiencing disgust directly, and for perceiving it in others. Bruno Wicker et al., *Both of Us Disgusted in My Insula: The Common Neural Basis of Seeing and Feeling Disgust*, 40 NEURON 655, 655 (2003).

encing,²⁸⁰ and when you think about others' pain or see images of activities that would hurt someone.²⁸¹ The insula is positioned to interact extensively with the brain networks underlying both affect and cognition, and may play an important role in mixing affective and cognitive processes.

Specifically, recent research suggests that the AI plays an important role in social emotions, particularly the representation of current emotional states and the *prediction* of future emotional states for ourselves and others.²⁸² Along these lines, damage to the insula has been associated with impaired recognition of emotion from facial expressions.²⁸³ At a more sophisticated social level, Alan Sanfey's research links the AI with our sense of justice. He notes the AI's role in "a basic sense of fairness and unfairness," which is "essential to many aspects of societal and personal decision-making and underlies notions as diverse as ethics, social policy, legal practice, and personal morality."²⁸⁴ The AI may do this as it is an "integral hub" in mediating interactions between brain networks associated with externally oriented attention and internally-oriented thinking. The insula thus helps us register that an event is emotionally salient, marking particular events for additional processing later on.²⁸⁵

The anterior cingulate (ACC) is the final structure I will discuss. It is located in the front of the cingulate cortex in the center of the brain. It looks a little bit like a collar, framing the recognizable divide between the right and left hemispheres. The ACC receives projections from the OFC, amygdala and AI, implicating it broadly in emotional and cognitive processing. In contrast to the extensive data on the structures above, the data are a bit more scattered related to the ACC and processing the emotions of disgust, sadness, and anger. Some studies indicate that ACC activity levels may predict a subject's response to treatment in anxiety disorders,²⁸⁶ and also suggest that the ACC assists with "error monitoring" where we detect conflict between concurrently active, rival representations. The ACC may engage another area of the prefrontal cortex, name-

280. Irene Tracey & Patrick W. Mantyh, *The Cerebral Signature for Pain Perception and Its Modulation*, 55 NEURON 377, 379 (2007) (citing A. Vania Apkarian et al., *Human Brain Mechanisms of Pain Perception and Regulation in Health and Disease*, 9 EUR. J. PAIN 463 (2005)).

281. Kevin N. Ochsner et al., *Your Pain or Mine? Common and Distinct Neural Systems Supporting the Perception of Pain in Self and Other*, 3 SOC. COGNITIVE & AFFECTIVE NEUROSCIENCE 144, 148 (2008).

282. Claus Lamm & Tania Singer, *The Role of Anterior Insular Cortex in Social Emotions*, 214 BRAIN STRUCTURE & FUNCTION 579, 579 (2010).

283. Adolphs, *supra* note 67, at 173 fig.6.

284. Alan G. Sanfey et al., *The Neural Basis of Economic Decision-Making in the Ultimatum Game*, 300 SCI. 1755, 1757-58 (2003).

285. Vinod Menon & Lucina Q. Uddin, *Saliency, Switching, Attention and Control: A Network Model of Insula Function*, 214 BRAIN STRUCTURE FUNCTION 655, 656 (2010).

286. See, e.g., Jack Nitschke et al., *Anticipatory Activation in the Amygdala and Anterior Cingulate in Generalized Anxiety Disorder and Prediction of Treatment Response*, 166 AM. J. PSYCHIATRY 302, 309 (2009).

ly the dorsolateral prefrontal cortex (DLPFC) to resolve such conflict.²⁸⁷ Some posit the ACC acts as a social alarm signal that reacts to breaches in social norms.²⁸⁸ This structure may therefore assist us in our active updating—that is, developing new behaviors needed for new environments.²⁸⁹

The brain structures discussed above do not work independently, and do not represent all emotional processing in the brain. Instead, they work together with other brain networks to help us respond appropriately to old and new stimuli. They also rely on sensory networks, memory, and language. For example, if we are presented with a visual representation, such as watching someone getting mugged, the above emotional networks will rely critically on input from sensory areas such as the visual cortex.²⁹⁰ If the person is someone we know, then our memory networks will be more active. If we are physically touched ourselves, or if we smell something distinctive, very different sensory processes will increasingly come out of our default resting state.²⁹¹ We might also engage in more “cognitive” processes related to feeling conflicted about whether we ought to go help, call the police, or run.

Because most social decisions rely on each of these brain structures, many of the regions sketched out above are implicated in both emotion and cognition. The structural connectivity between these “emotional” structures and the “cognitive” prefrontal cortex and OFC obliterates the idea that the two functions are easily and neatly separated. At the neurobiological level, it becomes inaccurate and metaphorical to refer to one mental state as “emotional” and the other as “cognitive.” For example, is the OFC a cognitive or an emotional structure? What about the vmPFC? The answer is that they are neither one nor the other, but a combination of the two. The very categories of emotion and reason fall apart when we

287. See Cameron S. Carter & Vincent van Veen, *Anterior Cingulate Cortex and Conflict Detection: An Update of Theory and Data*, 7 COGNITIVE AFFECTIVE & BEHAV. NEUROSCIENCE 367, 367 (2007).

288. James K. Rilling & Alan G. Sanfey, *The Neuroscience of Social Decision-Making*, 62 ANN. REV. PSYCHOL. 23, 40 (2011).

289. See Farshad A. Mansouri et al., *Conflict-Induced Behavioural Adjustment: A Clue to the Executive Functions of the Prefrontal Cortex*, 10 NATURE REVIEWS NEUROSCIENCE 141, 141 (2009).

290. The cortex plays a larger role in the processing of emotional visual stimuli than is typically acknowledged, and the amygdala's involvement may have more to do with processing salience, significance, ambiguity, and unpredictability than in processing emotion per se. Luiz Pessoa & Ralph Adolphs, *Emotion Processing and the Amygdala: From a 'Low Road' to 'Many Roads' of Evaluating Biological Significance*, 11 NATURE REVIEWS NEUROSCIENCE 773, 780 (2010).

291. See Adolphs, *supra* note 67, at 168 box 2 (“Whereas touch is an important social communication channel in other mammals, in modern humans it is relatively restricted to those with whom we have the most intimate relationships. A recently described distinct neural pathway of slow-conducting, C-afferent fibres that convey information about pleasant, light touch to the insula could underlie processing of social somatosensory signals, such as a caress. The sense of smell provides powerful social signals in other mammals but, again, it seems to be less important in humans. Laboratory studies have found influences of odorants on human physiology, but the effects of odours on social behaviour are less clear.” (footnote omitted)).

speak at this level of neurological detail. And if the distinctions are fuzzy at this level of analysis, imagine how confused they are when we extrapolate out to the social decision-making of jurors! While social decision-making does engage different brain processes than mere self-reflection, it is impossible for our bodies to bypass our basic neural machinery at this fundamental level.²⁹² Although this taken in isolation perhaps only suggests we refine what we mean by emotion in particular contexts, rather than conflating it with reason.

This also does not mean is that there could *never* be a dichotomous relationship between what we have traditionally called “emotion” and what we call “reason.” Given that some of the data focus on reductionist processes, it is possible that once my thoughts, emotions, and the social context are all mixed together, the ultimate “output” in terms of a simple decision or moral judgment may track folk views of emotion and reason. Some may find in this last statement the thread that unravels my entire thesis. But this commits a logical fallacy. The problem with the false dichotomy between emotion and reason is that it is not consistent with many of our neurological and behavioral data. It assumes the two always embody completely distinct categories, which they do not. But it would be equally invalid to say that emotion and reason always overlap on certain features. In the Venn diagram of emotion and reason, my argument is merely that in many social spaces, the two overlap considerably. Thus, the false dichotomy that began in Western culture thousands of years ago, and continues up until this day, may be remarkably empirically imprecise.

Even so, it is not completely incoherent for society to superimpose dichotomies on the output of these structures, as society can choose to reclassify our brain output however it so chooses. (Say, for example, we continue to separate out “mental harms” from “physical ones” in terms of reimbursement or health insurance coverage mechanisms.) But if we choose this false dichotomy, when we defend it we need to recognize that this dichotomy is a *social construct*, and not a biological one. The problem with deferring to the social construct of the false dichotomy by superimposing it on behavior that is not dichotomous at the neural or behavioral level is that it yields legal rules that are impossible for judges and jurors to follow in many contexts. This practice engages the fiction that the empire of cognition can rule over emotion if we try really hard.

292. See Norman, Cacioppo & Berntson, *supra* note 9, at 60 (“[C]onceptual breakthroughs of the late 20th century began to suggest that biological and social levels of analysis are not antithetical.”); see also Platt et al., *supra* note 43, at 136–137 (“Another primary difficulty with the dual selves model is that it suggests a unitary role for emotion in decision making. . . . [T]here are several means by which different components of emotions can influence decisions, and no single characterization will suffice. . . . [T]he relation between emotion and reason in decision making is not simply competitive.”); *Id.* at 138 (noting that research up until now has been “imprecise in defining the specific aspects of emotion that are important” and that emotions can create “opposite patterns, depending on the specific emotional state”).

In the extreme cases, we can appreciate that something different is going on when someone storms into our offices screaming, sweating, and barely able to breathe. We could classify this behavior as “emotional.” And yet, in less extreme cases, subtle emotional processes are guiding every rational decision that we make. As it has been made quite clear, emotion represents many things besides “rage” or “fear,” and encompasses broader social categories of empathy, pride, or shame.

Observing the anatomical interconnectedness and functional interdependence of emotion and reason has been aided by neuroimaging such as fMRI (functional magnetic resonance imaging), EEG (electroencephalography), and DTI (diffusion tensor imaging).²⁹³ Recent imaging data obliterates old notions of modularity in the brain, or the exclusive dedication of certain neural substrates for either cognitive or affective functions. As our knowledge of cognitive and affective neuroscience grows, we have learned that the neural and behavioral networks of emotion and cognition “interact from early perception to decision-making and reasoning,”²⁹⁴ and are “inextricably linked.”²⁹⁵ As one legal scholar noted, the process by which individuals interpret things—ascibe meaning and value to events—“actually melds emotions and reason to the point where, within the interpretive schema, the two cannot be separated but, rather, emerge as meaning upon which action is taken.”²⁹⁶

From the very beginning of our unconscious visual, olfactory, or audio perception, our emotions are working alongside our cognitive processes. And we can now observe this relationship through visual representations using EEG, fMRI and DTI.²⁹⁷ While some of the component parts to emotion and reason might be different, and their circuitry distinguishable in some tasks, there is considerably more overlap than previously imagined.²⁹⁸ In the next section, I will sketch out a few of the many behavioral tasks that require emotion and cognition to be working alongside each other.

293. For a brief summary of this technology, see Teneille Brown & Emily Murphy, *Through a Scanner Darkly: Functional Neuroimaging as Evidence of a Criminal Defendant's Past Mental States*, 62 STAN. L. REV. 1119, 1136–39 (2010).

294. Phelps, *supra* note 266, at 28.

295. Salzman & Fusi, *supra* note 265, at 175.

296. Peter Brandon Bayer, *Not Interaction But Melding—The “Russian Dressing” Theory of Emotions: An Explanation of the Phenomenology of Emotions and Rationality with Suggested Related Maxims for Judges and Other Legal Decision Makers*, 52 MERCER L. REV. 1033, 1034 (2001).

297. Thomas Ethofer et al., *Differential Influences of Emotion, Task, and Novelty on Brain Regions Underlying the Processing of Speech Melody*, 21 J. COGNITIVE NEUROSCIENCE 1255, 1255 (2009); Joseph LeDoux, *Emotion: Clues from the Brain*, 46 ANN. REV. PSYCH. 209, 210–211 (1995); Patrik Vuilleumier & Gilles Pourtois, *Distributed and Interactive Brain Mechanisms During Emotion Face Perception: Evidence from Functional Neuroimaging*, 45 NEUROPSYCHOLOGIA 174, 174 (2007).

298. See Borg et al., *supra* note 253, at 803–04 (“[E]motion and reasoning remain distinct components in an overall process of decision making.”).

D. Functional Interconnectedness: The Role of Emotion in Cognition

If I asked you to come up with as many words as you could in ten seconds to describe “cognition,” you would probably generate a list with words like perception, attention, evaluation, reflection, regulation, contemplation, knowledge, recollection, execution, etc. And these are traditionally the tasks that psychologists have referred to as “executive functions,” or “cognition.” What I will show in this section is that while these may be classically cognitive functions, they could not operate well, particularly in social situations, without the input of our emotions.

Elizabeth Phelps, a strong proponent of rejecting the false dichotomy or “dual process” model, has written that “[i]nvestigations into the neural systems underlying human behavior demonstrate that the mechanisms of emotion and cognition are intertwined from early perception to reasoning.”²⁹⁹ A 2008 review suggested that much of this integration may be moderated by the amygdala. As we saw from the previous section, it is anatomically positioned to do so, as the amygdala receives highly processed visual data from the temporal cortex, and saves tracers of this for later processing in other brain areas. Studies show that the amygdala “influence[s] memory, attention, decision making and other cognitive functions on the basis of the social [and emotional] significance of the stimuli that are being processed.”³⁰⁰

Now shifting to the other side of the dichotomy, I will briefly discuss how oft-labeled “cognitive” structures are actually quite involved in our emotional processes. The parietal cortex and prefrontal cortex are two regions thought to be primarily involved in cognition and reason. However, we now know they also play a powerful role in affective processing. Three sub-territories of the cortex—the anterior cingulate cortex (ACC), the lateral prefrontal cortex (IPFC), and ventromedial prefrontal cortex (vmPFC)—factor prominently into some of the most respected proposals for emotional circuitry. Despite being previously labeled “cognitive” regions, they are now considered to be extensively involved in affective function, and there is growing evidence for “functional integration of cognition and emotion in these regions.”³⁰¹ Even our ability to inhibit impulses, which is considered classically “cognitive” and implicates the ACC, dIPFC, and inferior frontal cortex, may be modulated by emotional stimuli and processes.³⁰²

299. Phelps, *supra* note 266, at 27.

300. Adolphs, *supra* note 67, at 168.

301. Pessoa, *supra* note 251, at 151; see also ANTONIO DAMASIO, THE FEELING OF WHAT HAPPENS: BODY AND EMOTION IN THE MAKING OF CONSCIOUSNESS 40–41 (1999).

302. See Jeremy R. Gray et al., *Integration of Emotion and Cognition in the Lateral Prefrontal Cortex*, 99 PROC. NAT'L ACAD. SCI. 4115, 4118–19 (2002); William M. Perlstein et al., *Dissociation in Human Prefrontal Cortex of Affective Influences on Working Memory-Related Activity*, 99 PROC. NAT'L ACAD. SCI. 1736, 1739–40 (2002).

I will not be addressing each of the “cognitive” capacities listed above. Instead, I will focus on perception and attention, with a brief summary of the role of emotion on memory. Because attention and perception are the derivative stages of stimulus processing, anything that affects these will also affect later cognitive functions, although in iterative ways that may complicate the ultimate outcome.³⁰³ Because we perceive and attend almost without noticing it, the role of emotions in these functions may not be seen; indeed, we are blind to it. First, I will discuss the cognitive neuroscience of perception, and how emotion often interacts with it to aid in our decisions.

1. The Neuroscience of Perception Obliterates the Assumption that Emotion Always Disturbs Cognition

Rather than biasing our decision-making, emotions often play a critical role in our perception. And, as you can imagine, perception is crucial to many aspects of trial, as the credibility of all parties (witnesses, judges, jurors) depends in turn on how well each is perceived.³⁰⁴ Witnesses share their stories about what was said between partners to a contract, what graphs were shown during a board meeting, and whether they were able to observe the make or model of the car zooming past them on the freeway. Jurors then perceive the testimony based upon all of this: the subtle shifts in posture, the failed eye-contact, the furrowed eyebrows between the accused and his attorney. They then listen to conflicting testimony to fold together their narrative “story” of what occurred.³⁰⁵ Without perception, there could be no oral or written testimony. Critically, there could also be no jury. This field of cognitive neuroscience therefore has widespread implications for both witness testimony as well as jury deliberations and judicial reasoning. Here, I am focusing specifically on the role of perception in juror decision-making. The empirical data, which we will now turn to, illustrates that in some cases emotion can actually assist jurors in perceiving events. I will begin with research on visual perception.

To test the effect of emotion on visual perception, one team studied contrast sensitivity. Contrast sensitivity is the ability to perceive differ-

303. See Elizabeth A. Phelps, Sam Ling & Marisa Carrasco, *Emotion Facilitates Perception and Potentiates the Perceptual Benefits of Attention*, 17 *PSYCHOL. SCI.* 292, 292 (2006).

304. Witnesses recall what they perceived with their eyes and ears, and they relay these perceptions in court. Ironically, witnesses did not use to be able to draw inferences or conclusions, and were just supposed to be the jury’s eyes and ears. This was because it was felt that perception did not require any inferential process. See THAYER, *supra* note 3, at 524.

305. Mariska Esther Kret & Beatrice de Gelder, *Social Context Influences Recognition of Bodily Expressions*, 203 *EXPERIMENTAL BRAIN RES.* 169, 169 (2010). (“[Data] show that observers judging a facial expression (fear or anger) are strongly influenced by emotional body language; an enhancement of the occipital P1 component as early as 115 ms after stimulus presentation onset points to the existence of a rapid neural mechanism sensitive to the agreement between simultaneously presented facial and bodily emotional expressions. . . . Knowledge of the social situation, body postures, voices, scenes, linguistic labels, or other emotional faces all influence emotion perception.” (citations omitted)).

ences between an object and its background, such as detecting a bluebird against a slightly darker blue sky. When there is very little contrast between the two objects, it can be difficult to determine the orientation of the object in the scene. Researchers relied on this to ask fourteen undergraduates to look at a display and determine whether the black box against a gray background was upright, shifted to the left, or shifted to the right. The research team found that the presentation of a fearful face prior to the stimuli presentation and test led to more accurate assessments of the orientation of the square. Put differently, the mere presence of a fearful face before the task improved the sensitivity of their eyes!³⁰⁶ In a follow-up experiment, the researchers found that presenting fearful faces in the periphery of our visual field, immediately before the orientation task, increased contrast sensitivity even more. It was thought that flashing the face peripherally was so unexpected, that it drew the subjects' attention to the fearful face, improving the subject's visual perception for a few moments.³⁰⁷ Importantly, while this data suggests that emotion improves our cognitive functioning during perception, it cannot be said that this conclusively holds for all contexts or emotions. But it is at least one example of where the emotion of fear may aid in perception.

Researchers have also used the technique of backward masking and binocular rivalry to tease out emotion's effect on perception.³⁰⁸ Briefly, backward masking involves presenting a target emotional face for a split second (less than 30 ms), followed by a masking stimuli of a neutral face for a longer period of time. If the time between the target and the masking stimuli is short enough, the subject is consciously unaware of the first stimulus and can only report seeing the second neutral face. In a binocular rivalry task, different images are introduced within visual domains specific to one or the other eye. As the eyes cannot focus on both, monocular channels in the primary visual cortex alternatively inhibit one another, so that only one image dominates and is perceived. The subordinate image does not reach awareness, even though it was registered subconsciously.

Something unintuitive was discovered using neuroimaging and these tasks. Namely, certain subcortical regions of the brain, such as the amygdala, basal ganglia, pulvinar and superior colliculus, are actually *more active* in response to emotional stimuli that *are not consciously perceived*. As one might expect for both tasks, the regions of the cortex, such as the frontal lobe, cingulate, and occipitotemporal lobe, were more active during the processing of consciously perceived stimuli. This means that there are certain regions of our brain, especially those that appear to be heavily involved in emotional processing, that are more

306. Phelps, Ling & Carrasco, *supra* note 303, at 298.

307. *Id.* at 295.

308. Marco Tamietto & Beatrice de Gelder, *Neural Bases of the Non-Conscious Perception of Emotional Signals*, 11 NATURE REVIEWS NEUROSCIENCE 697, 699 box 2 (2010).

involved in processing an emotional stimulus when we are not aware of them.

We can be unaware of what we subconsciously *perceive* when the stimulus is not strong enough or not presented for long enough time to trigger a response in the cortex. However, weaker stimuli are often capable of activating the sub-cortical visual regions, such as the superior colliculus, that ostensibly have a lower threshold for activation.³⁰⁹ Being unaware of a stimulus due to lack of *attention*, on the other hand, results not from a weak stimulus, but from when we are otherwise engaged and lacking the mental bandwidth to process it. This thereby reduces cortical responsiveness to the unattended event.³¹⁰ Even so, recent data indicate similar, though weaker, effects of non-conscious perception of happiness, sadness, or disgust cues on these areas of the brain.³¹¹

This likely occurs through the amygdala, which receives information about the emotional salience of stimuli quickly and often prior to awareness.³¹² Relative increases in activation occur in the amygdala even when the fearful faces are masked and subjects seem to be unaware that they were very briefly flashed before them.³¹³ Thus we see from this data that in certain situations, emotion can help us perceive stimuli. This may be especially true when the emotion is fear. Linking up with the previous section, this suggests that in certain cases, when the jury experiences some emotions, they might be more likely to perceive important features of the trial, which may lead to better recall of facts.

As emotion can affect perception, it is also the case that cognition affects perception, and our emotional response to this perception.³¹⁴ One team presented subjects with isovaleric acid, which smelled a bit like cheddar cheese. Subjects were placed in a scanner and given words to describe the odor, with some reading “cheddar cheese” and others reading “body odor.”³¹⁵ The word label altered brain activation in the secondary olfactory region of the orbitofrontal cortex. The label was also correlated with subjects’ ratings of pleasantness, with the body odor label being more likely labeled as unpleasant. There was greater olfactory cortex activation when the scent was framed as cheese rather than body odor.³¹⁶

309. *Id.* at 699.

310. *Id.* at 700.

311. *Id.*

312. Paul J. Whalen et al., *Masked Presentations of Emotional Facial Expressions Modulate Amygdala Activity Without Explicit Knowledge*, 18 J. NEUROSCIENCE 411, 415 (1998).

313. J. S. Morris et al., *A Neuromodulatory Role for the Human Amygdala in Processing Emotional Facial Expressions*, 121 BRAIN 47, 49, 53 (1998).

314. Blair et al., *supra* note 86, at 437 (finding that goal-directed processing disrupted the BOLD response, an indirect measure of brain activity, to emotional pictures).

315. Rolls, *supra* note 44, at 123–25.

316. Ivan E. de Araujo et al., *Cognitive Modulation of Olfactory Processing*, 46 NEURON 671, 674 (2005).

Thus, the emotional response was moderated by cognitive framing.³¹⁷ This is just one example of many, and it has direct application to jury instructions. While it suggests that we can moderate our emotional response by framing and reappraisal, jurors are often not specifically being asked to reappraise information, so much as ignore part of their appraisal. This often does not work without their being given a justification or anchor for doing so.

2. The Neuroscience of Attention Obliterates the Assumption that Emotion Always Disturbs Cognition

We now move to another prototypical cognitive function that is intimately related to perception: attention. Attention is considered one of the most paradigmatic of cognitive functions, allowing us to filter out many sensory sounds, visuals, and smells to focus only on the most critical inputs.³¹⁸ Attention to a face or scene increases neuronal firing rates in the visual and sensory cortex, and is believed to improve our behavioral response by making us quicker and more agile to respond.³¹⁹ This particular intersection of cognition and emotion helps us answer a common question: Given what I am hearing and seeing, and how I feel, where should I direct my focus?

The importance of emotional salience and its impact on auditory attention has been well established. A ubiquitous example of this is the classic “cocktail party” effect, where an emotionally significant statement, such as one’s name or hometown, is heard from across the room even when we are not dedicating our deliberate attention to the speaker.³²⁰ Subsequent research has confirmed that when our attention is divided and stimuli are competing, emotional networks can facilitate awareness for emotionally-salient stimuli.³²¹ Some posit that the amygdala makes this possible; it is likely that various brain structures are involved.

We know from imaging studies that both the amygdala and the orbitofrontal cortex (OFC) receive highly processed input from secondary

317. See Benedetto De Martino et al., *Frames, Biases, and Rational Decision-Making in the Human Brain*, 313 SCI. 684, 684 (2006); see also M. Deppe, *Evidence for a Neural Correlate of a Framing Effect: Bias-Specific Activity in the Ventromedial Prefrontal Cortex During Credibility Judgments*, 67 BRAIN RES. BULL. 413, 419–20 (2005).

318. Jacqueline Gottlieb et al., *Parietal Control of Attentional Guidance: The Significance of Sensory, Motivational and Motor Factors*, 91 NEUROBIOLOGY LEARNING & MEMORY 121, 121 (2009) (“Because the brain is ‘bombarded’ with more sensory information than it can process in depth, the argument goes, attention is needed to prioritize and limit the amount of information that reaches higher processing stages at any one time.”).

319. See Robert Desimone & John Duncan, *Neural Mechanisms of Selective Visual Attention*, 18 ANN. REV. NEUROSCIENCE 193, 194 (1995); Sabine Kastner & Leslie G. Ungerleider, *Mechanisms of Visual Attention in the Human Cortex*, 23 ANN. REV. NEUROSCIENCE 315, 322–23 (2000).

320. E. Colin Cherry, *Some Experiments on the Recognition of Speech, with One and with Two Ears*, 25 J. ACOUSTICAL SOC. AM. 975, 976 (1953).

321. Phelps, *supra* note 266, at 37.

visual areas, making them ideally situated to adjust perceptual processing based on our evaluation of the stimulus.³²² Thus, the emotional cue can trigger amygdala-mediated attention and laser-like focus, helping us sense whether we need to go chase a child down the theatre steps or keep watching the ballet.³²³ A growing number of studies hint at a bivalent role of attention, with positive emotional states expanding our scope of attention and negative emotional states restricting it.³²⁴ Once again, the relationship between emotion and cognition is not black and white, but is incredibly nuanced depending on the context.

It is generally thought that this quick response to fear by the amygdala is critical in helping us modulate our attention toward dangerous events.³²⁵ As Robert Sapolsky has pointed out, we humans have the luxury of being relatively predator-free. This means that unlike our more primitive ancestors, modern man is typically not in the position of running from an animal that seeks to eat him. Even so, the emotion of fear, and the evolutionary-engrained behaviors associated with it, continue to save us from even the most banal dangers. These defensive behaviors can come in handy when we are responding to the rare drunk driver who swerves into our lane or to a home-security alarm that goes off at 2:00 a.m.³²⁶ In each of these cases, our personal safety appears to be threatened. And when our safety is threatened, responses in the brain prepare us to react. Even though it seems to happen automatically, recent data suggest that neural processing of stimuli with certain types of emotional content often requires some degree of thought to attend to valence.³²⁷ This does not suggest that the amygdala only responds to attended stimuli or that we are unable to respond to threats outside of the focus of our attention.

322. See David G. Amaral et al., *Anatomical Organization of the Primate Amygdaloid Complex, in THE AMYGDALA: NEUROBIOLOGICAL ASPECTS OF EMOTION, MEMORY, AND MENTAL DYSFUNCTION* 1, 1 (John P. Aggleton ed., 1992); Jennifer L. Freese & David G. Amaral, *The Organization of Projections from the Amygdala to Visual Cortical Areas TE and V1 in the Macaque Monkey*, 486 J. COMP. NEUROLOGY 295, 315 (2005).

323. Luiz Pessoa, *Emotion and Cognition and the Amygdala: From "What Is It?" to "What's To Be Done?"*, 48 NEUROPSYCHOLOGIA 3416, 3416–18, 3426 (2011).

324. Ronald S. Friedman & Jens Forster, *Implicit Affective Cues and Attentional Tuning: An Integrative Review*, 136 PSYCHOL. BULL. 875, 875 (2010); see also Brendan P. Bradley et al., *Attentional Biases for Negative Information in Induced & Naturally Occurring Dysphoria*, 35 BEHAV. RES. & THERAPY 911, 912 (1997); John D. Eastwood et al., *Differential Attentional Guidance by Unattended Faces Expressing Positive and Negative Emotion*, 63 PERCEPTION & PSYCHOPHYSICS 1004, 1006–07 (2001).

325. Adam K. Anderson et al., *Neural Correlates of the Automatic Processing of Threat Facial Signals*, 23 J. NEUROSCIENCE 5627, 5627 (2003); Patrik Vuilleumier et al., *Effects of Attention and Emotion on Face-Processing in the Human Brain: An Event-Related fMRI Study*, 30 NEURON 829, 837 (2001).

326. Sarina M. Rodrigues, Joseph E. LeDoux & Robert M. Sapolsky, *The Influence of Stress Hormones on Fear Circuitry*, 32 ANN. REV. NEUROSCIENCE 289, 291 (2009).

327. Luiz Pessoa et al., *Attentional Control of the Processing of Neutral and Emotional Stimuli*, 15 COGNITIVE BRAIN RES. 31, 40 (2002) (finding through the use of brain imaging that all "brain regions responding differentially to emotional faces, including the amygdala, did so only when sufficient attentional resources were available").

Another set of tests revealed the impact of emotion on attention. Here, researchers relied on something called the “attentional blink.” In this paradigm, stimuli are presented in rapid succession (about every 100 milliseconds or so). This is so quick that it is difficult for subjects to identify any one stimulus. However, if subjects are told that they can ignore most pictures and selectively attend to a few targets (such as those that appear in pink) subjects are able to selectively perceive those targets and later identify them. This ability is negatively affected the longer the time between the two different targets. If a second pink target is presented a few items after the first, in what is called the “early lag period,” subjects will often miss it.³²⁸ Noticing and encoding the first target stimulus results in a temporary refractory period, during which time it is difficult to notice and encode a second target.³²⁹ Using this paradigm, researchers can examine what our brain perceives pre-awareness, when our attention “blinks.” Comparing emotional and neutral words as stimuli, one team found that when the second word is emotionally arousing, the blink is attenuated.³³⁰ Put another way, emotionally arousing words enhanced subjects’ ability to spot the second target during the refractory period. This finding did not extend to patients with left amygdala damage, as they still had a hard time seeing the second target, even if it was an emotionally arousing word.

Together, these studies suggest that when demands are placed on our attention, emotional arousing stimuli are more likely to reach perceptual awareness, and are more likely to be later identified. It also suggests that the amygdala plays a necessary role in this facilitation of attention with emotion.³³¹ There are many other studies revealing that emotion assists us in attending to stimuli.³³² Applying these findings to courtroom applications, it may be the case that we should not discourage emotional testimony at trial, purely because it is arousing. Arousal may help jurors

328. Phelps, *supra* note 266, at 37.

329. Marvin M. Chun & Mary C. Potter, *A Two-Stage Model for Multiple Target Detection in Rapid Serial Visual Presentation*, 21 J. EXPERIMENTAL PSYCHOL. 109, 109 (1995); Jane E. Raymond et al., *Temporary Suppression of Visual Processing in an RSVP Task: An Attentional Blink?*, 18 J. EXPERIMENTAL PSYCHOL. 849, 858 (1992).

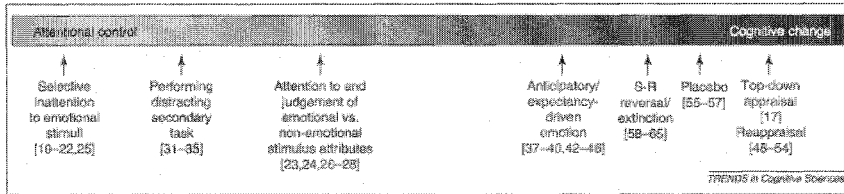
330. Adam K. Anderson, *Affective Influences on the Attentional Dynamics Supporting Awareness*, 134 J. EXPERIMENTAL PSYCHOL. 258, 264 (2005).

331. Adam K. Anderson & Elizabeth A. Phelps, *Lesions of the Human Amygdala Impair Enhanced Perception of Emotionally Salient Events*, 411 NATURE 305, 305 (2001).

332. This is particularly true for threatening stimuli. Gilles Pourtois & Patrik Vuilleumier, *Dynamics of Emotional Effects on Spatial Attention in the Human Visual Cortex*, 156 PROGRESS BRAIN RES. 67, 67 (2006) (“These data confirm that threat may act as a powerful exogenous cue and trigger reflexive shifts in spatial attention toward its location, through a rapid temporal sequence of neural events in parietal and temporo-occipital areas, with dissociable neural substrates for engagement benefits in attention affecting activity in extrastriate occipital areas and increased disengagement costs affecting intraparietal cortex. These brain-imaging results reveal how emotional signals related to threat can play an important role in modulating spatial attention to afford flexible perception and action.”).

filter through all of the social stimuli in the theater of trial, to help them maintain their attention.³³³

While emotion can affect perception and attention, the inverse is also true. Cognitive perception and attention control can also shape our affect. Imaging work has investigated two types of control of emotion: attentional control and cognitive change. A hypothetical continuum exists between the two methods.³³⁴



In its purest form, attentional control is the deliberate and selective inattention to emotional stimuli. An analogy would be burying your head in your jacket during the particularly gory parts of a horror film, or looking away from a dead deer on the road. Moving along the spectrum we then have the ability to engage in a distracting secondary task, which will compete for attention with the emotional stimuli. Here we can think of humming or reciting Yeats poems in your head while a dentist drills your teeth. Next, one might attend to the stimulus and engage with it, closely evaluating the attributes that are “emotional,” against those that are “non-emotional.” Research in this area has yielded “strikingly discrepant” results, with some suggesting cognitive judgment reduces emotional-amygdala response, and others suggesting the opposite. This likely depends on the cognitive burden of the stimulus and task and the operating definitions of the critical terms.³³⁵ Cognitive change begins to be employed when we anticipate emotion and prepare for processing it. This may occur when we know we are about to get married, and we are thinking of ways not to cry during the ceremony. We might also attempt reversal learning, where we aim to retrain our brain not to associate the sound of a particular alarm with getting up at 5:00 a.m. or to reverse an emotional association to extinguish our learned response. To some extent, emotions can be modulated by any of these methods.³³⁶ But we may

333. Training can improve attentional focus by reducing the behavioral costs of distraction. See Todd A. Kelley & Steven Yantis, *Neural Correlates of Learning to Attend*, 4 FRONTIERS HUM. NEUROSCIENCE 1, 9 (2010).

334. Figure depicting continuum attributed to Kevin N. Ochsner & James J. Gross, *The Cognitive Control of Emotion*, 9 TRENDS COGNITIVE SCI. 242, 243 (2005).

335. *Id.* at 244.

336. “Top-down” appraisal and reappraisal involves deliberately reinterpreting neutral images in emotional ways to change our associations. This can be contrasted with the ‘bottom-up’ approach where we respond to intrinsically emotional perceptual properties of the stimulus. One team looked at this comparison, and observed amygdala activation in both. However, only in the top-down task was the ACC (anterior cingulate cortex), the LPFC (lateral prefrontal cortex), and the MPFC (medial prefrontal cortex) activated, which might represent the cognitively generated aversive appraisal. See

not be able to employ these strategies effectively when the emotion is subconscious. We therefore must continue to research individuals through physiological cues rather than just conscious self reports. Emotional stimuli that do not even pierce our conscious awareness can still elicit physiological responses that suggest autonomic arousal, including inducing us to make spontaneous and emotionally reflexive facial expressions.³³⁷

3. The Neuroscience of Memory Obliterates the Assumption that Emotion Always Disturbs or Enhances Memory

Without delving too deeply into the enormous literature of memory and emotion, I will sketch out some of the ways in which emotion impacts memory formation and recall. Mounting data suggest that that emotion generally assists memory by facilitating the specific steps of attention and encoding.³³⁸ Many studies confirm that emotional events can be better encoded and remembered.³³⁹ Further, through the role of emotion in tagging events as pleasant or aversive, emotions play a vital in how we learn.³⁴⁰ Memories are enhanced for location and activity when we experience natural disasters, like earthquakes, or unnatural disasters, like car accidents.³⁴¹ But for some details of so-called “flashbulb” memories, we can be quite confident, and yet wrong, in our recall.

Kevin N. Ochsner & James J. Gross, *Thinking Makes It So: A Social Cognitive Neuroscience Approach to Emotion Regulation*, in HANDBOOK OF SELF-REGULATION: RESEARCH, THEORY, AND APPLICATIONS 240, 242–42 fig.12.4 (Roy F. Baumeister & Kathleen D. Vohs eds., 2004). Studies of cognitive change have had more consistent results than those for attentional control. Specifically, data demonstrate that emotional appraisal systems can be modulated by the PFC (prefrontal cortex), the OFC (orbitofrontal cortex) and cingulate control systems. These systems may be activated by expectations or beliefs about interpretations of stimuli or by learning new associations between stimuli and feelings. Interestingly, there is no data to suggest that we can regulate our emotions just by being told to do so, without being given an explicit reason or way of replacing the emotional reaction with something less emotional. Cf. Kateri McRae et al., *Bottom-Up and Top-Down Emotion Generation: Implications for Emotion Regulation*, SOC. COGNITIVE & AFFECTIVE NEUROSCIENCE, 2 (Feb. 4, 2011), <http://scan.oxfordjournals.org/content/early/2011/02/04/scan.nsq103.abstract> (noting that, in experimental settings, methods such as cognitive reappraisal, involving “the re-consideration or re-framing of an event in less emotional terms,” have been more reliable and effective in emotional regulation studies than merely instructing participants to suppress their emotions).

337. Tamietto & de Gelder, *supra* note 308, at 698.

338. Kevin S. LaBar & Roberto Cabeza, *Cognitive Neuroscience of Emotional Memory*, 7 NATURE REVIEWS NEUROSCIENCE 54, 55 (2006); *see also* Ueli Rutishauser et al., *Activity of Human Hippocampal and Amygdala Neurons During Retrieval of Declarative Memories*, 105 PROC. NAT'L ACAD. SCI. 329, 329 (2008).

339. *See, e.g.*, LaBar & Cabeza, *supra* note 338, at 54 (“Emotional events often attain a privileged status in memory.”).

340. *Id.* at 55 (“Emotional situations initiate complex interactions between adrenergic and glucocorticoid systems that are coordinated by the hypothalamic-pituitary-adrenal axis at central and peripheral sites of action. . . . Within the basolateral amygdala and hippocampus, noradrenergic enhances glutamatergic synaptic plasticity, which is thought to underlie learning and memory functions.”).

341. Benno Roozendaal et al., *Stress, Memory and the Amygdala*, 10 NATURE REVIEWS NEUROSCIENCE 423, 423 (2009). Roozendaal goes on to note that “[s]uch memory enhancement is not limited to experiences that are unpleasant or aversive: pleasurable events also tend to be well

The effect of emotion on memory depends on what the emotion is and when it is experienced in the memory process. Encoding is the initial stage of episodic memory, and it involves the processing of incoming data that will be stored in the brain. It has two separate steps: acquisition and consolidation. Acquisition refers to the registration and analysis of an input in sensory buffers such as the auditory or visual cortex. Consolidation occurs when the memory creates a strong representation and ease of recall over time.³⁴² Emotion can affect encoding through its modulation of both processes,³⁴³ and it likely plays out differently depending on which point in the process it is involved.³⁴⁴ The enhancing effects of stress on consolidation may be balanced out by its impairing effects on retrieval.³⁴⁵

A 2005 study found that patients with amygdala damage showed deficits in recall for details of emotional scenes that were central to an event, while keeping intact their memory for “unemotional” details that were considered peripheral.³⁴⁶ This has been described as their remembering the trees, but not the forest. It suggests an important role for the amygdala in contextualizing memory.³⁴⁷ However, many studies to date have not differentiated between the amygdala’s influence on encoding and on the consolidation process.

4. Social Decision-Making Studies Obliterate the Assumption that Rational Actors Never Rely on Emotion

In this next part, the Article will apply findings from the cognitive sciences to social models of decision-making. While processing differences often lead to behavioral differences, it is behavioral differences

remembered. . . . [S]tress hormones and stress-activated neurotransmitters enhance the consolidation of memory for emotionally arousing experiences through actions involving the amygdala.” *Id.*

342. GAZZANIGA, IVRY & MANGUN, *supra* note 43, at 248.

343. See J. A. Easterbrook, *The Effect of Emotion on Cue Utilization and Organization of Behavior*, 66 PSYCHOL. REV. 183, 183 (1959).

344. The timing of stress is critical for recall. If stressful stimuli occur before learning, there is impairment. If stressful event occurs after learning, there is enhanced recall. This effect was greater in magnitude for emotional rather than neutral stimuli. Tom Smeets, *Acute Stress Impairs Memory Retrieval Independent of Time of Day*, 36 PSYCHONEUROENDOCRINOLOGY 495, 495, 499–500 (2011). In another study, retrieval of social information (biographical sketches including phone numbers, names, part of life stories, birth dates, home towns) was impaired when stress occurred after learning/encoding. Stress paradigm was the Trier Social Stress Test (being asked to give a public speech on a topic of researchers’ choosing). Researchers measured the level of stress induced through cortisol levels and mood evaluations. There was no effect of sex for those having elevated cortisol. Merz, Wolf & Hennig, *supra* note 170, at 291. Emotionality of the material can further potentiate these effects. See Roozendaal et al., *supra* note 341, at 426.

345. Mathia Luethi, Beat Meier & Carmen Sandi., *Stress Effects on Working Memory, Explicit Memory, and Implicit Memory for Neutral and Emotional Stimuli in Healthy Men*, 2 FRONTIERS BEHAV. NEUROSCIENCE 1, 6 (2009).

346. Ralph Adolphs, Daniel Tranel & Tony W. Buchanan, *Amygdala Damage Impairs Emotional Memory for Gist but Not Details of Complex Stimuli*, 8 NATURE NEUROSCIENCE 512, 512, 515 (2005).

347. For an example of this impairment resulting from acute social stress, see Charles A. Morgan, III et al., *Stress-Induced Deficits in Working Memory and Visuo-Constructive Abilities in Special Operations Soldiers*, 60 BIOLOGICAL PSYCHIATRY 722, 726 (2006).

that are relevant to the law. We now then turn to social decision-making models that integrate emotion, cognition, and behavior.

For some time, classical economics and legal models predicted that human beings would make decisions in hyper-rational ways.³⁴⁸ Even non-economists thought that it was basic human nature to behave in a way that maximized personal returns. Early psychology and neuroscience researchers focused on the information-processing view of making “optimal” decisions, a view that generally ignored emotion.³⁴⁹ To these researchers, the prototypical question was, “Given a particular situation, how *should one* go about selecting the best among competing alternatives?”³⁵⁰ But as cognitive and affective neuroscience developed, researchers began to understand how an individual’s “best choice” may be classically “irrational.” I place irrational in quotes, because it rests on a particular definition of rationality that does not accommodate social and affective goals. Many of our complex emotions, such as shame, empathy, jealousy, and pride, depend on cognitive and social context.³⁵¹ Researchers have hypothesized that they developed later in our evolutionary history than more primitive emotions like fear or sadness.³⁵² These social emotions serve to regulate group behaviors rather than promote individual interests.

Despite our intuition, people frequently make decisions that do not seem to yield net economic benefits to them. Humans are both more cooperative and less selfish than social game theories would predict, choosing sometimes to mutually benefit strangers in ways that once would have been deemed irrational.³⁵³ And yet, this cooperation can be seen in various research paradigms, with subjects of different ages and backgrounds and despite the fact that the subjects may only play one anonymous game against each other. Of course, one must ask whether a financial investment or laboratory task can ever truly model other social losses or gains (such as injury to our reputation). And to be sure, research on

348. See Thomas Raeburn White, *Oaths in Judicial Proceedings and Their Effect upon the Competency of Witnesses*, 51 AM. L. REG. 373, 373 (1903) (“Self-interest is perhaps the fundamental fact in human nature. Every man naturally seeks to promote the welfare of himself and his family before that of his neighbor. . . . [H]e will, if necessary, tell a lie for that purpose.”).

349. Phelps, *supra* note 266 at 27; see also Pizarro & Bloom, *supra* note 240, at 193 (“We agree that psychology has suffered from an overreliance on reasoning at the expense of affective processes.” (citation omitted)).

350. Joseph G. Johnson & Jerome R. Busemeyer, *Decision Making Under Risk and Uncertainty*, 1 WIREs COGNITIVE SCI. 736, 736 (2010) (emphasis added).

351. Adolphs, *supra* note 67, at 166; see also Yuko Akitsuki & Jean Decety, *Social Context and Perceived Agency Affects Empathy for Pain: An Event-Related fMRI Investigation*, 47 NEUROIMAGE 722, 722 (2009) (“Our study demonstrates that the social context in which pain occurs modulate the brain responses to others’ pain. This modulation may reflect successful adaptation to potential danger present in a social interaction.”).

352. Adolphs, *supra* note 67, at 165–66.

353. Sanfey, *supra* note 40, at 599; see also Dominic J. Barraclough, Michelle L. Conroy & Daeyeol Lee, *Prefrontal Cortex and Decision Making in a Mixed-Strategy Game*, 7 NATURE NEUROSCIENCE 404, 404 (2004).

mock jurors in deliberative settings must continue, so that we can learn more about the way real-world jurors actually decide. But for now, we have learned that human beings are not always rational in the classical sense when they are working in groups. In fact, we are often “irrational” in predictable ways that make sense once we acknowledge our social and affective impulses. We will now turn to two theories that highlight this phenomenon.

a. Prospect Theory

Prospect theory describes the behavior of individuals when making various decisions about money and value. In laboratory settings, individuals find the marginal utility of a constant change to be greater for losses than for gains.³⁵⁴ Put another way, if you lose money, this will be more aversive to you than the same amount of monetary gain is pleasant. This is known as loss aversion, and it is a feature of prospect theory. Teams have demonstrated, many times over, that individuals will give more money to keep an item than they initially paid to bring it home. This is not predicted by pure rational decision-making, as it would seem that you would not attach sentimental value to something so quickly, making someone pay quite a bit above last week’s sale price to take the object from you.

Financial games such as this introduced many revolutionary things to cognitive psychology. These tasks conveyed a less rational and more emotion-centered view of social decision-making.³⁵⁵ We also learned something about the component parts to a complex social decision. Specifically, through prospect theory games, we now appreciate that there is a pre-decisional editing stage, where the decision is framed, outcomes ordered, and clearly inferior options are eliminated. Second, we have learned that outcomes are compared to salient benchmarks and are not weighed absolutely in the abstract. Instead, the value placed on outcomes is influenced by our subjective emotions. Third, prospect theory has confirmed that outcomes could be evaluated differentially based on whether they were posed as losses or gains. Finally, we have learned that sub-optimal choices can be the result of loss aversion, where marginal utility of a constant change is greater for losses than for gains.³⁵⁶

Taken together, these findings paint a picture of decision-making that is *not* centered on optimizing individual financial rewards.³⁵⁷ This may be due to sentimental value we place on the things we own, once we own them. Taking into account our subjective evaluations, mediated

354. De Martino et al., *supra* note 317, at 684–86.

355. Johnson & Busemeyer, *supra* note 350, at 739.

356. *Id.*

357. The question has shifted from “What is rational?” to “Because humans often make ‘suboptimal’ decisions, how can we describe and predict the choices that one will make in a particular situation?” *Id.* at 736.

through emotional cues and memories, we can make better predictions as to how people actually make social decisions. Up until recently, models such as those adopted by the drafters of our evidentiary practices were blind to the value of emotion in this decision-making.

b. Ultimatum Games

A task called the Ultimatum Game has uncovered other ways in which humans make a different type of seemingly irrational decision. The game essentially involves two subjects, the proposer and the responder. The proposer is given some amount of money by whoever is controlling the experiment. Let's say she is given \$10 dollars in ten one dollar bills. Both subjects are told that the proposer gets to split the money between the two of them in any way the proposer chooses. The proposer then reveals to the responder how much money she wants to give. If the responder accepts the proposal, they each get to keep the amount of money suggested. But if the responder rejects the offer, neither person gets anything. Under a purely rational view of human behavior, you would expect that the proposer usually recommends giving the responder the least amount possible, or \$1. This seems rational because the responder should be happy to have a dollar more than he had before, and the proposer, being in charge, could keep the maximum amount.

Shockingly, and not in keeping with cognitive rationalism, this is in fact *not* what usually occurs. In many replicated studies, the proposer does not keep \$9 and, instead, typically divides the money equally between the two. And when she does not, and the allocation is thought of as being too unequal (say, giving \$1 to the responder) the responder will reject the \$1 outright, preferring to take no money at all.³⁵⁸ This effect is observed regardless of whether the two subjects are anonymous strangers, only play in one exchange, or whether they are repeat players—so long as the proposer is not given real-time feedback about whether the responder has rejected her offers.³⁵⁹ Classical economists mulled over why this might be the case; after all, why wouldn't someone choose \$1 over nothing? Ironically, the reason comes to us from emotion and affective neuroscience.

Emotions such as frustration, disgust, or anger motivate the responder to punish the unfair offers, even when this punishment is only revealed to the proposer at the end of the experiment. Receiving an unfair offer is associated with negatively-valenced emotions as well as activation of the AI and dIPFC.³⁶⁰ As you recall from earlier sections of the

358. See, e.g., Gary E. Bolton & Rami Zwick, *Anonymity Versus Punishment in Ultimatum Bargaining*, 10 GAMES & ECON. BEHAV. 95, 102 (1995).

359. See Shmuel Zamir, *Rationality and Emotions in Ultimatum Bargaining*, 61 ANNALES D'ÉCONOMIE ET DE STATISTIQUE 1, 9, 19, 23 (2001).

360. Sanfey, *supra* note 40, at 600; Sanfey et al., *supra* note 284, at 1758 ("Therefore, not only do our results provide direct empirical support for economic models that acknowledge the influence

Article, the AI is implicated in feelings of disgust, which might help us learn from, and then avoid, aversive experiences. The dlPFC may be involved with cognitive reappraisal and regulation of strong emotions.³⁶¹ Conversely, fair offers are associated with activation in brain areas linked to reward learning, including the ventral striatum.³⁶² The striatum receives positive dopamine boosts following successful actions, perhaps instructing the network to respond in the same way when reactivated in the future.³⁶³

Subjects are more likely to accept unfair offers when the dlPFC activation is substantially greater than the insular activation. This has suggested to some that difficult social decisions may rely on iterative competitions between so-called cognitive processes and emotional ones, with rejection resulting when the emotional process is not sufficiently checked by the cognitive control.³⁶⁴ This sort of data reinforces the false dichotomy and suggests that, in some cases, there might be competition between structures. However, this competition likely does not fall on such clear lines—with emotion at one end and reason at the other. Rather than the dlPFC “checking” the insula activity, it is entirely possible that in those cases where the offer was rejected, the person was just not feeling as disgusted by similar unfair behavior.

Interestingly, unfair offers are also rejected when it is not the actual responder who gets to keep the money, but instead some anonymous third party beneficiary.³⁶⁵ One study tried to figure out whether the emo-

of emotional factors on decision-making behavior, but they also provide the first step toward the development of quantitative measures that may be useful in constraining the social utility function in economic models.” (footnotes omitted). Further, in related cooperative games involving trust:

Providing general personality profiles of partners before they play a [trust game] led to reduced caudate activity when responding to partners described in either positive or negative terms, although responses to morally neutral players remained unchanged. This suggests that prior beliefs can reduce the amount of trial-by-trial learning, which demonstrates both top-down and bottom-up influences on the neural basis of social cooperation.

Sanfey, *supra* note 40, at 600 (footnotes omitted).

361. See James K. Rilling, Brooks King-Casas & Alan G. Sanfey, *The Neurobiology of Social Decision-Making*, 18 CURRENT OPINION NEUROBIOLOGY 159, 162 (2008). The top-down cognitive override of bottom-up emotional responses has been found when subjects make utilitarian moral decisions or delay gratification. See *id.*

362. *Id.* at 161. This effect appears to hold even when the researchers control for the monetary payoff. *Id.*

363. See Wolfram Schultz, *Neural Coding of Basic Reward Terms of Animal Learning Theory, Game Theory, Microeconomics and Behavioural Ecology*, 14 CURRENT OPINION NEUROBIOLOGY 139, 141 (2004). The striatum is thought to be implicated in craving, reward anticipation and prediction, and romantic love. Phillips et al., *supra* note 261, at 507.

364. See Sanfey et al., *supra* note 284, at 1757; cf. M. R. Delgado, R. H. Frank & E. A. Phillips, *Perception of Moral Character Modulate the Neural Systems of Reward During the Trust Game*, 8 NATURE NEUROSCIENCE 1611, 1616 (2005). See generally Martin A. Nowak & Karl Sigmund, *Evolution of Indirect Reciprocity by Image Scoring*, 393 NATURE 573 (1998); Claus Wedekind & Manfred Milinski, *Cooperation Through Image Scoring in Humans*, 288 SCI. 850 (2000).

365. Claudia Civai et al., *Are Irrational Reactions to Unfairness Truly Emotionally-Driven? Dissociated Behavioural and Emotional Responses in the Ultimatum Game Task*, 114 COGNITION 89, 94 (2010).

tional response is the same in the third-party or self-reward paradigms, and found that while unfair offers were likewise rejected when the money went to a stranger, there was less of an external response, as measured by skin temperature and heart rate.³⁶⁶ A different team discovered that the punishment signal (i.e., rejecting unfair offers) was attenuated when the responder was given Citalopram, a serotonin reuptake inhibitor. When serotonin was enhanced in the subjects, subjects were much less likely to reject unfair offers from the proposer.³⁶⁷ Similarly, when subjects were given oxytocin during the games, they were more likely to trust others, perhaps by attenuating the fear or anxiety related to rejection.³⁶⁸ Thus, in the Ultimatum Game, we also see how important emotions such as disgust, anger, or fear are essential for social decision-making.

There are many other examples where humans make decisions that appear irrational at first blush, but in fact might make sense if we factor in emotions such as anger, sadness, or empathy. Seemingly irrational decisions make more sense because of the social nature of the decision, and whether trust and cooperation are important.³⁶⁹ Together, emotions and social norms powerfully regulate our responses to others, in ways appropriate for social cooperation. We must therefore begin to develop legal decision-making rules that understand the important role of emotion in social decisions such as credibility assessments and ultimately in moral judgments such as sentencing. To be sure, a leading researcher in this area, Alan Sanfey, put it this way in 2003: “Models of decision-making cannot afford to ignore emotion as a vital and dynamic component of our decisions and choices in the real world.”³⁷⁰

CONCLUSION: ELIMINATING THE FALSE DICHOTOMY AND REMOVING OUR AFFECTIVE BLINDNESS

[Our] [r]eliance on a traditional two-system model, in which a “cold,” rational, far-sighted cognitive system battles against a “hot,”

366. *Id.* at 89 (“The ‘irrational’ rejections of unfair offers . . . have traditionally been associated with negative emotions, such as frustration, elicited by unfairness. We recorded skin conductance responses as a measure of emotional activation while participants performed a modified version of the UG, in which they were asked to play both for themselves and on behalf of a third-party. Our findings show that even unfair offers are rejected when participants’ payoff is not affected (third-party condition); however, they show an increase in the emotional activation specifically when they are rejecting offers directed towards themselves (myself condition). These results suggest that theories emphasizing negative emotions as the critical factor of ‘irrational’ rejections should be re-discussed. Psychological mechanisms other than emotions might be better candidates for explaining this behaviour.” (emphasis omitted) (citations omitted)).

367. Molly J. Crockett et al., *Serotonin Selectively Influences Moral Judgment and Behavior Through Effects on Harm Aversion*, 107 PROC. NAT’L ACAD. SCI. 17433, 17433 (2010).

368. Michael Kosfeld et al., *Oxytocin Increases Trust in Humans*, 435 NATURE 673, 673 (2005).

369. For example, reciprocal cooperation in a prisoner’s dilemma game is associated with caudate nucleus activation and cooperative reciprocity in subsequent rounds. Rilling, King-Casas & Sanfey, *supra* note 361, at 160.

370. Sanfey et al., *supra* note 284, at 1758.

irrational, short-sighted emotional system is beginning to prove inadequate in light of contemporary psychological and neurobiological data that favor multiples decision-systems.³⁷¹

When the law speaks of emotion, it often has intense, visibly arousing states in mind. But subtle emotions guide almost everything we do—from perceiving, attending, and remembering, to deciding to send someone to prison for life. The foregoing examples from cognitive science have hopefully convinced you of the weak theoretical bases for some of our evidence practices that fail to recognize the wide diversity in emotional processes. Specifically, the idea that we can and should use information only for its non-emotional content, that emotion equals bias, that we can selectively recruit or bracket off our empathic impulses, that the “heat of passion” suspends all reflection, and that we cannot lie when stressed, are just a few of the ways that evidence law fails to reflect reality. As I have demonstrated through a painstaking survey of our complex brains and legal rules, emotion and reason are often not at odds. Indeed, functional interactions between the amygdala and prefrontal cortex mediate emotional influences on cognitive processes and vice versa. Even individual neurons encode for both cognitive and emotional variables!³⁷²

So why does any of this matter? The failure to appreciate the inevitable and often helpful role emotions can play in courtroom decision-making results in rules and practices that are woefully out of step with cognitive science data on emotion and reason.³⁷³ The monolithic view of emotions as corrupting of reason results in affective blindness. We therefore ask jurors to perform mental gymnastics and emotional regulation that may not be possible, and also might not be desirable, given that emotions assist with perception, attention, memory, empathy, and social decision-making.

Even the world of artificial intelligence appreciates that the false dichotomy does not make sense, as fully “rational” robots without emotion would never fool anyone and would not quite fit in. Emotion certainly is part of what makes us socially cooperative beings, and it may be the very process by which we learn, by helping us attach labels for our life’s events, so we can classify the activity as enjoyable or not for future decision-making. It therefore should be better understood in its various manifestations before being formally rejected from the courtroom. Our working constructs of emotion in evidence practice need to be redefined and made more precise. In fifty years, when we reflect on the clumsy way we were referring to “emotion,” we will realize that what we actually meant was one thousand different things.

371. Seymour & Dolan, *supra* note 1, at 662 (citations omitted).

372. Salzman & Fusi, *supra* note 265, at 173.

373. See Lubell et al., *supra* note 1, at 417.

For now, this Article calls for two things. First, I argue that evidentiary practices emphasizing the biasing effect of emotion be revised to reflect the mounting proof that (1) emotion is not always biasing and (2) emotion and reason are structurally interconnected and functionally interdependent. Second, I argue that social psychologists continue to conduct mock jury research on emotional processing. The hope is that a growing body of research will discover alternatives to the current models of the FRE that are crudely antagonistic to emotion.

Researchers have struggled to define the “emotional brain” in part due to the complexity of function, but also due to conceptual difficulties in reliably testing different emotions in social contexts. Given the complexity of emotional states, it can be difficult to translate feelings such as joy, sadness, disgust, empathy, disappointment, love, shame, guilt, or fear, into suitable laboratory tasks. This is compounded by our reliance on subjects’ self-reports of experienced emotion.³⁷⁴ And even if we bypass self-reports and look to changes in amygdala activity as proxies for emotional arousal, we still need corroborating behavioral or physiological measures (such as startle response, stress hormones, blood pressure increase, heart-rate, temperature) to support the inference that emotional responses have occurred.³⁷⁵ Further, in the real world, reduced amygdala activation might mean we are reasoning through our emotions, challenging them, and yet still are guided by their implicit encoding. This is just one more way that the study of emotions is incredibly context-specific. Thus, we need more studies looking at context-specific variables and a panoply of physiological and behavioral markers that a precise emotion was experienced. Specifically, future studies should be geared at testing the following:

- The role of emotional evidence and processing on attention, perception, memory, and credibility assessments in mock jury settings. Specifically, this research needs to expand out from focusing on fearful stimuli and should compare effects of other emotional processes such as joy, surprise, anger, and shame;
- The degree to which mock jurors can consciously down-regulate emotions such as empathy, and whether these judgments are externally considered socially more fair, efficient, or stable;
- Whether instructions telling jurors to rely on emotional evidence when hearing mitigation evidence, but not when hearing aggravating evidence or determining civil damages awards, are understood and followed;

374. Pessoa, *supra* note 251, at 149.

375. This is because the amygdala is preferentially activated in response to many things. See Ochsner & Gross, *supra* note 41, at 244.

- Whether the jury understands the difference between the requirement of specific intent and adequate provocation in the “heat of passion” instructions, and whether emotions other than rage can be said to generate “adequate provocation” that makes “cool reflection” impossible;
- Whether jurors respond differently to limiting instructions related to emotional testimony when controlling for the social power of the speaker (i.e., judge, prosecution, defense, lay witness);
- The role of memory, as opposed to prevarication, on hearsay exceptions and the trustworthiness of the out-of-court statement; and
- Whether mock jury credibility assessments can be performed well in individuals who suffer from deficits in empathy.

The breadth of our charge is overwhelming. But that does not mean we should revert to the state of affairs in 1933, when Hutchins lamented that there was no psychological data relevant to jury decision-making. While modern cognitive science has not dealt with every point raised by the laws of evidence, it has at least made actionable inroads. And with studies using larger sample sizes, controlled protocol, physiological assessments of emotion (such as heart rate, sweating, etc), we can begin to understand averages that might approach normal emotional processing in groups.³⁷⁶ However, much more care needs to be taken to model the real-world social aspects of deliberation and trial as best as possible, without allowing the perfect methodology to be the enemy of the good (or better). The data from cognitive science have and will continue to help us articulate more precise definitions for legal terms, and will help us make sure our normative trial commitments, once set, track the reality of our physiological constraints. Even after all of the best and ecologically valid data is gathered, rulemakers may still decide to thumb their noses at cognitive science. If this happens, we must revisit our normative commitments to epistemological rationalism, judicial efficiency, repose, and governmental legitimacy. A legal system purportedly aimed at any of these (perhaps with the exception of judicial efficiency, taken alone) will never be achieved if we continue to ignore the way human beings make complex social decisions. As it is, we assume that jurors can divorce their emotions from their reasons, behaving in many ways like a calloused psychopath. Robert Maynard Hutchins remained hopeful that one

376. But even if we begin to see reliable activation patterns, or neural correlates, for certain emotions, we must be mindful of the curse of the reverse inference. The reverse inference is a logical fallacy that occurs when we infer that specific mental processes are engaged based on seeing patterns of brain activation that are correlated with that mental process. The reason this is flawed is that our brain structures do not have a 1:1 relationship with function. As just mentioned, neural networks and structures perform many functions. Seeing activation in one area may mean multiple things. Although there is not as much power in the reverse inference, it is not without some merit in terms of drawing correlations. Further, newly developed methods from the field of machine learning may strengthen them. See generally Russell A. Polldrack, *The Role of fMRI in Cognitive Neuroscience: Where Do We Stand?*, 18 CURRENT OPINION NEUROBIOLOGY 223 (2008).

day we could strike some “mutual sparks” between evidence law, the brain, and behavior.³⁷⁷ My hope is that this Article will fan the fire with more relevant data from the cognitive sciences, particularly social and affective neuroscience.

377. See Daniel Blinka, *supra* note 7, at 417 (2010) (quoting Hutchins *supra* note 15, at 513).

