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Emotions in the Evaluation of Legal Risk

ABSTRACT. The risks taken into account in legal decision-making are, often, matters of life and death, but the way we think about risk is flawed. This is a problem. The dominant account of how emotions are involved in risky decision-making follows the standard *probabilistic* account of risk. If we entertain a *modal* account of risk, however, this changes the way in which a host of legal actors—members of the jury, judges, defendants, lawyers, legislators, regulators, and police—ought to think about how emotions impact risk evaluation. In what follows, I examine what taking a modal account of risk would mean for the way we understand emotions in the evaluation of legal risk: specifically, the risk of wrongful conviction.

The present chapter draws on contemporary research in the epistemology of risk to examine how emotions can influence the evaluation of legal risk. I first review a distinction between two understandings of risk—the probabilistic account and the modal account—and demonstrate how the probabilistic account is incomplete. Next, I highlight how emotion can be seen to mediate decision-making in a series of empirical studies on the assessment of gruesome photographic evidence. I then analyse the standard accounts of how emotions play a role in risk assessment, which build upon a probabilistic account of risk. A modal account of risk and emotion is then offered, demonstrating the ways in which emotions can contribute to the evaluation of risk understood modally. Finally, I consider what legal practices and structures need to be refined or abandoned in order to facilitate the conditions most conducive to harnessing the evaluative power of emotions in legal decision-making.

Introduction

When we imagine a criminal trial, we can picture various displays of emotion: an impassioned lawyer, a nervous defendant, an angry jury. The vibrant field of law and emotion aims to identify how emotions matter for legal theory and practice. This is a fundamentally interdisciplinary endeavour, taking insight from advances across the sciences, social sciences, and humanities. Emotions—as I will attempt to show—are dynamic processes that play a critical role in decision-making, especially collective decision-making in which multiple agents interact to form a decision. A pressing avenue of consideration is therefore the place of the emotions in group and institutional settings, including the justice system.

There exists a »persistent cultural script«¹ that insists upon a traditional demarcation between the two seemingly unbridgeable realms of reason and emotion. This script yields a number of serious concerns for the study and practice of law in particular, and is increasingly challenged by what we learn from psychology, neurobiology, the cognitive sciences, and other fields, including philosophy. We now see a move away from this dichotomy with the acknowledgement that the emotions do play an inescapable role in the law. This has led to a very exciting and a very new subfield of law and emotion as an interdisciplinary area of inquiry: with a focus less on demonstrating the pervasiveness of emotions within the law, but rather on the utility of analysing the emotions in responding to tangible legal concerns.

This chapter examines the concern of legal risks. We can identify at least three pressing areas of legal theory where risk plays a role:

1. the case of the ruthless risk taker (that is, »the killer whose conduct, whilst not directly designed to kill, nevertheless manifests such a callous disregard for human life as to merit the label of a murderer«²);

¹ Terry Maroney, »The Persistent Cultural Script of Judicial Dispassion«, *California Law Review* 99 (2011): 629–682.

² John E. Stannard, »Murder and the Ruthless Risk-Taker«, *Oxford University*

2. the risk of false acquittals; and
3. the risk of wrongful conviction.

For the purposes of this chapter, I will focus only on the last of these. Any change in how we understand risk will, of course, impact how we think about risk in the other cases, and so are live issues worthy of focus in their own right.

What the present chapter will do is look at contemporary research on the epistemology of risk to frame a discussion on how emotions can impact the evaluation of legal risk. In the first two sections, I review a distinction between two accounts of risk—the probabilistic account and the modal account—and argue that the probabilistic account is incomplete. Section 3 takes us into the courtroom, with a case study of empirical data on how emotion can be seen to mediate decision-making in the evaluation of gruesome photographic evidence. In section 4, I analyse the standard account of how emotions can be understood to play a role in risk assessment and evaluation, which has naturally built upon the standard probabilistic account of risk. In section 5, I present a modal account of risk and emotion. I draw out the relevant factors of how emotion might contribute to the cognitive process of evaluating risk along these modal lines. In the final section, I demonstrate how—if we accept the modal account of risk, and its resultant impact on how emotions may affect risky decision-making—emotion could best be reflected in the norms of legal decision-making practice.

1. The Probabilistic Account of Risk

The received approach to thinking about risk is set in terms of probabilities. The degree of risk is calculated by ascertaining how high a probability it is that the unwanted outcome of the risky situation will occur. In evaluating the risk of wrongful conviction,

Commonwealth Law Journal, (Winter 2008): 137–157. See also Law Commission, »Murder, Manslaughter and Infanticide« (*Law Commission* No 304, 2006) [2.19]. In Scots law, this disregard is termed »wicked recklessness«.

we settle on a threshold of acceptability and try to make sure that the criminal justice system does not pass that threshold. If, given the evidence, the probability that a defendant might be wrongfully convicted or executed is low enough, we can accept that level of risk. This is the account of risk that is employed almost exclusively in the legal theory literature, and also across engineering, safety science, biomedical ethics, and philosophy generally.³

I want to suggest that this account of risk fails to capture fully what we do when we engage in risk evaluation. In suggesting this, I follow Pritchard, and will use an example he gives to draw out the problem. The problem is: we can easily think of cases in which the probabilities of a risk event occurring are identical, yet one case is intuitively much more risky. The cases he gives are these:

CASE 1: An evil scientist has rigged up a large bomb, which he has hidden in a populated area. If the bomb explodes, many people will die. There is no way of discovering the bomb before the time it is set to detonate. The bomb will only detonate, however, if a certain set of numbers comes up on the next national lottery draw. The odds of these numbers appearing is 14 million-to-one. It is not possible to interfere with this lottery draw.

CASE 2: An evil scientist has rigged up a large bomb, which he has hidden in a populated area. If the bomb explodes, many people will die. There is no way of discovering the bomb before the time it is set to detonate. The bomb will only detonate, however, if a series of three highly unlikely events obtain. First, the weakest horse in the field at the Grand National, Lucky Loser, must win the race by at least ten furlongs. Second, the worse team remaining in the FA Cup draw, Accrington Stanley, must beat the best team remaining, Manchester United, by at least ten goals. Finally, third, the Queen of Eng-

³ Alfons Bora, »Risk, risk society, risk behavior, and social problems«, in *Blackwell Encyclopedia of Sociology*, ed. G. Ritzer (Oxford: Blackwell, 2007); Sabine Roeser, »The role of emotions in judging the moral acceptability of risks«, *Safety Science* 44 (2006): 690; Duncan Pritchard, »Risk«, *Metaphilosophy* 46:3 (2015): 436–461. See S. O. Hansson, »Philosophical Perspectives on Risk«, *Techné: Research in Philosophy and Technology* 8 (2004): 10–35, and »Risk«, *Stanford Encyclopedia of Philosophy*, ed. E. N. Zalta (2014) for two surveys of the philosophical literature on risk, demonstrating the dominance of probabilistic accounts of risk.

land must spontaneously choose to speak a complete sentence of Polish during her next public speech. The odds of this chain of events occurring is 14 million-to-one. It is not possible to interfere with the outcomes of any of the events in this chain.⁴

The probability of the bomb exploding is identical—we created the cases to be that way—so, on a probabilistic account of risk, they should be treated the same.

But something's not right here. What that is, is that even though the probabilities are the same, it at least appears that it would require a significant amount to change in the world for Case 2 to occur. All that would have to happen for the bomb to explode in Case 1 is just a few coloured balls twisting in the air and landing just so; whereas in Case 2 a lot more is required to bring that situation into being. Either Lucky Loser must run faster than she's ever ran before, or the other horses must underperform, or perhaps there's an accident on the racetrack and Lucky Loser (being so far behind, as usual) manages to avoid the incident and become the only horse to finish the race, winning. Something even more complicated must change about the world for Accrington Stanley to win, given the number of players involved; and then, of course, the Queen must learn Polish. The fact that more must change about the world from the way it is now for the conditions in Case 2 to occur can be understood as making it more difficult for that series of events to occur than for the lottery case to occur. It would be more *difficult* for someone to thwart the evil scientist's plans in Case 2 because she would have to actually *do more* to stop the risk event from occurring. Put another way, the relevant conditions for the Case 1 risk event to occur make that explosion something that could *more easily occur*. What this captures is an important distinction to be made between the *probability* of an event occurring, and the *possibility* of it occurring. To examine this distinction, and its relevance for evaluations of risk, we must enter the realm of possible worlds.

⁴ Pritchard, 2015, 441.

2. The Modal Account of Risk

In considering possibilities, as distinct from probabilities, the relevant standard is *modal closeness*. What this entails is a recognition that we intuitively order possible worlds in relation to how much they are similar to our world, the actual world. By ordering worlds in this way, we also order the possible events that obtain in those worlds according to the same standard. Similarity here is governed by how much would need to change in our world in order to make this world the possible world where the imagined event occurs. Close-by worlds are those that do not require a great deal of change; far-off worlds are those that do.⁵ Where probabilities measure odds, possibilities measure modal closeness.

In examining Pritchard's example above, it could be objected that the cases are so bizarre that they outstrip our ability to entertain the relevant probabilities. To overcome this objection, Whittington provides a more clear thought experiment that demonstrates how probabilistic accounts come apart from modal accounts, and thus how probabilities differ from possibilities. Consider:

ROULETTE: Take a roulette wheel with 38 pockets. The player places a bet on pocket number 37. The wheel spins and the ball lands in pocket number 38. The player remarks that they have been unlucky to lose.⁶

Understood in terms of probabilities, all pockets besides the winning one are equally losing pockets. Landing close to the winning pocket does not change those probabilities: the risk of losing, on a

⁵ For the seminal discussion of possible worlds see David Lewis, *Counterfactuals* (Oxford: Blackwell, 1973); and *On the Plurality of Worlds* (Oxford: Blackwell, 1987). Particular discussion on easy possibilities can be found in R. M. Sainsbury, »Easy Possibilities«, *Philosophy and Phenomenological Research* 57 (1997): 907–919.

⁶ Lee John Whittington, *The Metaphysics of Luck* (Ph.D. thesis, University of Edinburgh, 2015), 52. Whittington's modal account regards luck, rather than risk specifically. However, the account of luck he builds can be mapped onto risk.

probabilistic account, is always 37/38. However, as Whittington explains, »the close proximity of pocket 37 to pocket 38 means that, holding certain conditions fixed, there would not have been widespread violations of the actual world for the ball to have landed in the nearby pocket 37, making the roulette player a winner. Given that the ball did land in pocket 38, it could easily have been the case the ball could have landed in pocket 37.«⁷

Building from this model, we can offer a modal account of risk: where the level of risk is measured not by probabilities or statistical likelihood, but by how much would need to change about the world for it to be the case that the risk event occurs. When we consider legal risks, in particular the risk of wrongful conviction, it is this modal account that I want to entertain. What this will mean is that, in some cases, we can judge there to be a high risk of wrongful conviction, even though the statistical probabilities say otherwise. This shouldn't be too incredible. Our inability to make reliable inferences involving probabilities is well-documented,⁸ but we *are* really good imaginers. As Norris and Epstein have demonstrated in a series of experiments, it is the less cognitively-demanding »experiential« thinking style that is more successful at performing creative-associative tasks than the »rational« style employed in probabilistic reasoning. Such creative tasks assessed included: listing as many ways as possible how certain everyday items can be used; interpreting ambiguous drawings; and imagining the consequences of unprecedented counterfactuals, such as humans no longer needing sleep.⁹ Creative imagination of this kind lends itself to thinking about possible worlds and judging their similarity to our own. In fact, the empirical literature on the psychology of risk perception, risk criteria, and risk evaluation converge in noting that our decisions about

⁷ Whittington, 2015, 52.

⁸ Daniel Kahneman, et al., *Judgment under Uncertainty: Heuristics and Biases* (Cambridge: Cambridge University Press, 1982).

⁹ Paul Norris and Seymour Epstein, »An Experiential Thinking Style: Its Facets and Relations with Objective and Subjective Criterion Measures«, *Journal of Personality* 79:5 (2011): 1058.

risk are more (even primarily) responsive to the modal closeness of an event, and not to its probability.¹⁰

Now, there are many interesting questions to be put to a modal account of risk, and, in this chapter, I'm not going to defend it any further than this.¹¹ My aim here is simply to argue: if the modal account of risk has any traction in the evaluation of legal risk, it will require a radical change in the way we think about how emotions are involved in risk evaluation. The primary motivation for considering a modal account of risk is therefore the acknowledgment of the different roles emotions can be seen to play as cognitive tools in probabilistic reasoning tasks, as opposed to the role they play as cognitive tools in the creative task of imagining and ordering possible worlds—including those that explain the conditions under which a defendant is innocent.

3. Anger and Gruesome Evidence

Keeping this modal account of risk in mind, we can now begin to look at the relevant factors of what emotions might contribute to the cognitive process of evaluating risk along these modal lines. As a case study, I will examine a particular emotion (anger), and the eliciting condition of gruesome photographic evidence presented in court. In this context, the options involved in a decision would be the conviction and sentencing options available to the jury group.

¹⁰ Kahneman and C. A. Varey, »Propensities and Counterfactuals: The Loser That Almost Won«, *Journal of Personality and Social Psychology* 59 (1990): 1101–1110; K. H. Teigan, »Luck: The Art of a Near Miss«, *Scandinavian Journal of Philosophy* 37 (1996): 156–171.

¹¹ For more detailed defences of modal accounts of luck and risk, see Teigen, »When a small difference makes a big difference: counterfactual thinking and luck«, in *The Psychology of Counterfactual Thinking*, eds. David R. Mandel, Denis J. Hilton, and Patrizia Catellani (London, Routledge: 2005): 129–146; Whittington, 2015; and Pritchard, »Epistemic Luck«, *Journal of Philosophical Research* 29 (2004): 193–222; and »The Modal Account of Luck«, *Metaphilosophy* 45:4–5 (2015): 494–619.

In the United States and the Commonwealth, trial courts standardly admit visually presented gruesome evidence, including verbal accounts, videos, and photographs. The decision to admit gruesome evidence generally follows from an estimation that the probative value of the evidence—that is, its quality of affording proof—outweighs any potential prejudicial impact on the decision-maker.¹²

Judges have long assumed that gruesome evidence can influence juror verdicts.¹³ Until relatively recently, however, little was known about the precise manner in which gruesome evidence affects juror decision-making. It has only been in the last several years that dedicated studies have been carried out to test the hypothesis that verbally and/or visually presented evidence influences juror evaluation of evidence, estimations of guilt, and their overall verdict. I will briefly describe one of these studies, by Bright and Goodman-Delahunty, which is fairly paradigmatic. First, mock jurors are assigned to one of two *verbal* evidence conditions: gruesome or non-gruesome.¹⁴ The evidence differed in the amount of detail that was presented regarding wounds to the victim. Second, participants were further assigned to one of the three *visual* evidence conditions: no photographs, twenty neutral photographs, or twenty gruesome photographs. In the neutral conditions, photographs were of, for example, an internal door with damage to the outer panel; in the gruesome conditions, photographs depicted the victim postmortem, displaying deep wounds to the victim from different angles.

In this study, gruesome verbal evidence had no influence on mock juror verdicts. What we do see is that when gruesome visual evidence was presented, it led to significantly higher rates for each of the following:

¹² David A. Bright and Jane Goodman-Delahunty, »Gruesome Evidence and Emotion: Anger, Blame, and Jury Decision-Making«, *Law and Human Behavior* 30 (2010): 183–202.

¹³ Susan Bandes and Jessica Salerno, »Emotion, proof and prejudice: The cognitive science of gruesome photos and victim impact statements«, *Arizona State Law Journal* 46 (2014): 1003–1056.

¹⁴ Evidence is that from *R. v. Valevski*, 2000.

1. Conviction rate
2. Evaluation of the sufficiency of prosecution evidence
3. Evaluation of the inculpatory weight of prosecution evidence
4. Severity of punishment awarded

This leads the authors to conclude, »The increase in convictions in response to gruesome photographs confirmed the hypothesis that jurors are more prone to convict a defendant when gruesome photographic evidence is led in evidence, compared with the equivalent case in which no such gruesome evidence is submitted, or where such evidence is excluded by the judge«. ¹⁵ What is really interesting here are results two and three: that mean ratings of the sufficiency and inculpatory weight of the prosecution evidence were significantly greater than those who saw no photographs. This is striking because it demonstrates the impact of these images on the actual *evaluation of the evidence*, the cognitive process of forming an evaluation.

Where do emotions come in? Mock jurors who saw gruesome postmortem photographs of the victim reported experiencing significantly more intense emotional responses than did mock jurors who saw no photographs. They also reported higher levels of anger (specifically) directed at the defendant compared with those who didn't see any photographs, saw neutral photographs, or were presented with either condition of verbal evidence. Another factor that has been demonstrated in dozens of these studies is the finding that specific negatively valenced emotions (anger and disgust, mainly) were induced by gruesome photographs, which suggests that rather than impacting on negative affect in general, or producing a generally negative mood, gruesome visual evidence influences specific emotions. ¹⁶ What we see here is that mock juror anger toward the defendant mediated the influence of the gruesome photographs in the ways detailed above: in increasing the

likelihood of conviction, in enhancing the perceived sufficiency and weight of the evidence, and in increasing the severity of punishment.

What is of concern here is the extent to which the emotion mediates the influence of external information on the decision-making process itself. By connecting up research on information processing from the behavioural sciences with the gaps identified in the law and emotion literature, the hypothesis indicates that emotions may influence legal judgements in the following ways:

1. *Affecting the depth of information processing strategies*: Anger but not sadness leads to less systematic processing strategies, as well as a greater reliance on heuristics or stereotypes.
2. *Biasing perception, recall, and interpretation of information in the direction of the emotions*: Jurors experiencing the broadly negatively valenced emotions tend to interpret ambiguous information more negatively, to recall more negative information about a situation, to suppose a greater probability for angering events to occur in future, and to notice more negative information in one's environment.
3. *Providing informational cues to judgement*: Taking one's own emotional state to be directly informative of the events or environment at hand.
4. *Affecting how confident decision-makers are of their judgement*: Anger is shown in many studies to be associated with high levels of certainty. ¹⁷

So, we've got a problem here. Information presented in court elicits an emotion that results in increases across the board for conviction, sufficiency, inculpatory weight, and severity of punishment, but these results may be arrived at by faulty information processing strategies. If it can be demonstrated that anger impacts probabilistic reasoning in one way (e. g., by leading the decision-maker to predict a greater probability for negatively valenced

¹⁵ Bright and Goodman-Delahunty, 2010, 197.

¹⁶ Aaron Ben-Ze'ev, »The Thing Called Emotion«, in *The Oxford Handbook of Philosophy of Emotion*, ed. Peter Goldie (Oxford: Oxford University Press, 2010): 41–61.

¹⁷ Neal Feigenson, »Emotional Influence on Judgments of Legal Blame«, in *Emotion and the Law*, eds. B. H. Bornstein and R. L. Wiener (New York: Springer, 2010): 45–96.

events to happen in the future¹⁸), but modal reasoning in another (e.g., by leading her to judge the modal closeness of a counterfactual scenario as more certain, or to perceive less risk to new situations¹⁹) then it really matters which account of risk we are taking. If we are convinced by the modal account of risk, then our understanding of what anger contributes—positively or negatively—will impact whether the kinds of evidence that heighten anger ought to be admitted in court.

4. Competing Accounts of Emotion in Risk Evaluation

In recent years, we have witnessed an increasing interest in the role of emotion in decision-making under uncertainty. Empirical research has shown that people consistently rely on emotions in making judgements concerning risks.²⁰ Slovic and his colleagues generated a theory about the so-called ›affect-heuristic‹, according to which if a decision-maker has a positive attitude towards a risk event, they judge its risk as low and its benefits as high; if they have a negative attitude towards the risk event, they judge in the opposite way.²¹ On Slovic's view, this affect-heuristic can mislead us. Sunstein goes even further, demonstrating how emotion is a major source of flaws in our thinking about uncertainty and risk

in particular.²² If it is the case, and people do rely on emotions in evaluating situations of risk as Kahneman and Varey and Teigan have argued,²³ how do we deal? Two views have developed on this score, which will set the stage for how we can come to see the role of emotions under the modal account of risk.

The dominant view in risk perception and evaluation research holds that reason and emotion are distinct faculties. This view stems from the groundswell of research under the umbrella of the Dual Process Theory (DPT), a theoretical framework that has been developed in cognitive psychology and empirical decision theory.²⁴ In brief, according to the DPT framework, our mind works via two distinct systems. System 1 is evolutionarily prior; it is fast and intuitive, but unreliable. It is the ›quick and dirty‹ method that gets you in the ballpark, but doesn't let you choose your seat. System 2 developed later in our evolution; it is rational, analytic, reflective, and more reliable, but also slower and more demanding of effort and attention. It's the ›slow and steady‹ winner in the race to the truth. Proponents of the various versions

¹⁸ David DeSteno, et al., ›Beyond Valence in the Perception of Likelihood: The Role of Emotion Specificity‹, *Journal of Personality and Social Psychology* 78:3 (2000): 397–416.

¹⁹ Feigenson, 2010, 47–48; Jennifer S. Lerner and Dacher Keltner, ›Beyond valence: Toward a model of emotion-specific influences on judgement and choice‹, *Cognition and Emotion* 14:4 (2000): 478.

²⁰ M. Finucane, et al., ›The affect heuristic in judgments of risks and benefits‹, *Journal of Behavioral Decision Making* 13 (2000): 1–17; Paul Slovic, ›Trust, emotion, sex, politics, and science: surveying the risk-assessment battlefield‹, *Risk Analysis* 19 (1999): 689–701.

²¹ Finucane, et al., 2000; Slovic, et al. ›The affect heuristic‹, in *Intuitive Judgment: Heuristics and Biases*, eds. T. Gilovich, D. Griffin, and D. Kahneman (Cambridge: Cambridge University Press, 2002): 397–420; ›Risk as analysis and risk as feelings: Some thoughts about affect, reason, risk, and rationality‹, *Risk Analysis* 24 (2004): 311–322.

²² Cass Sunstein, *Laws of Fear* (Cambridge: Cambridge University Press, 2005).

²³ Kahneman and C. A. Varey, ›Propensities and Counterfactuals: The Loser That Almost Won‹, *Journal of Personality and Social Psychology* 59 (1990): 1101–1110; K. H. Teigan, ›Luck: The Art of a Near Miss‹, *Scandinavian Journal of Philosophy* 37 (1996): 156–171.

²⁴ S. Epstein, ›Integration of the Cognitive and the Psychodynamic Unconscious‹, *American Psychologist* 49:8 (1994): 709; J. Greene and J. Haidt, ›How (and Where) Does Moral Judgment Work?‹, *Trends in Cognitive Sciences* 6 (2002): 517–523; Haidt and J. Graham, ›When Morality Opposes Justice: Conservatives Have Moral Intuitions that Liberals May Not Recognize‹, *Social Justice Research* 20:1 (2007): 98–116; S. A. Sloman, ›The Empirical Case for Two Systems of Reasoning‹, *Psychological Bulletin* 119:1 (1996): 3, ›Two Systems of Reasoning‹, in *Heuristics and Biases: The Psychology of Intuitive Judgment* (2002): 379–396; K. E. Stanovich and R. F. West, ›Individual Differences in Rational Thought‹, *Journal of Experimental Psychology: General* 127:2 (1998): 161; F. Strack and R. Deutsche, ›Reflective and impulsive determinants of social behavior‹, *Personality and Social Psychology Review* 8:3 (2004): 220–227; and see Kahneman, *Thinking Fast and Slow* (New York: Macmillan, 2011) for a popularised overview of his own scholarly work on the subject. K. E. Stanovich, *The Robot's Rebellion: Finding Meaning in the Age of Darwin* (Chicago: University of Chicago Press, 2004) cites some two dozen variants of the DPT model.

of the DPT hold that emotions are part of at least System 1, and that analytic rationality takes place via System 2. Accordingly, if sound reasoning is a product of System 2 processes, then when evaluating risk, it follows that we should rely on System 2.

An outcome of this dichotomous view is that one System might impede, stifle, or overshadow the other. From this, we get the first of two competing conceptions of emotions in risk evaluation. This is the view that emotions get in the way of sound reasoning, and if they get in the way of sound reasoning, they will certainly get in the way of reasoning about risks. Proponents of this view aim to demonstrate that emotions both blur our understanding of quantitative information about risk,²⁵ and bias us in our judgement of the evaluative aspects of risk.²⁶ In particular, emotions contribute to what Sunstein calls »probability neglect« and what Slovic calls »availability«.²⁷ Here's Sunstein:

Probability neglect is especially large when people focus on the worst possible case or otherwise are subject to strong emotions. When such emotions are at work, people do not give sufficient consideration to the likelihood that the worst case will occur.²⁸

A second way emotions distort our quantitative reasoning is »framing«, that is, the phenomenon that the way information about risk is presented significantly determines evaluations about that information, for experts and laypeople alike. Tversky and Kahneman's well-known framing experiment allowed doctors to judge whether they would recommend a particular cancer treatment to a patient. The results:

One group of doctors got the information about the effectiveness of the treatment in terms of probabilities of survival, the other group in terms of probability of death, where the information was statistically equivalent. Representation in terms of probability of survival led to

significantly more positive evaluations of the treatment than representation in terms of probability of death.²⁹

A final distortion is »proportion dominance«, which in various gambling tasks results in gamblers determining the attractiveness of a gamble much more strongly by probabilities of winning and losing than by the monetary outcomes involved.³⁰ Given these ways the emotions affect our reasoning about risk for the worse, the dominant response has been to say that risk-related emotions ought to be corrected by rational and scientific methods.³¹

However, there is reason to question this persistent script regarding the opposition of reason and emotion. If it is emotion that impedes our ability to reliably and appropriately evaluate risk, then surely finding ways to turn off the emotions would make us excellent decision-makers when it comes to risk. However, as has been demonstrated in a famous series of studies by Damasio, those with damage to the areas of the brain associated with emotion tend to be even worse at evaluating risk.³² Research continuing on Damasio's work also demonstrates that those who lack the somatic markers of emotion »not only have difficulty making risky decisions, but they also choose in ways that turn their personal and professional lives to shambles.«³³

A competing conception of the role of emotion in risk perception and evaluation holds that there might be a positive place for emotion—or, at least, that emotion might not be the only problem. Most of the proponents of a positive view of emotions in risk evaluation would identify as part of the cognitivist theory of emotion. Emotional cognitivists allow, first of all, that emotions are intentional: that they have intentional objects, whereas other affective states such as feelings or moods do not.³⁴ This under-

²⁵ Slovic, 2004; G. F. Loewenstein, et al., »Risk as Feelings«, *Psychological Bulletin* 127 (2001): 267–286, at 271.

²⁶ Finucane, et al., 2000, 7; but see Roeser, 2006, 694 ff.

²⁷ Slovic, 2002, esp. 414, 410.

²⁸ Sunstein, 2005, 68.

²⁹ A. Tversky and Kahneman, »Judgment under Uncertainty: Heuristics and Biases«, *Science* 185 (1974): 1124–1131.

³⁰ Slovic, et al., 2004, 317.

³¹ Ronald de Sousa, »Here's How I Feel: Don't Trust Your Feelings!«, in *Emotions and Risky Technologies*, ed. Sabine Roeser (Delft: Springer, 2010): 17–35.

³² Antonio Damasio, *Descartes' Error* (New York: Putnam, 1994).

³³ Loewenstein, et al., 2001, 274.

³⁴ Ben-Ze'ev, 2010.

standing of emotional intentionality goes back to Plato, and is employed by cognitivists about emotion to demonstrate that emotions have critical potential.³⁵ Second, the cognitivist theory of emotion takes emotions to be evaluative. Working at the intersection of emotion, decision-making, and technological ethics, Roeser challenges Slovic to argue that emotions can play an important role in risk assessment, and in particular in judging the *ethical and evaluative* aspects of technological risks. Further, she argues that moral emotions can contribute to moral understanding, via imagination, empathy, and sympathy. For it does remain a crucial part of virtually all risk theories that risk is not only a quantitative notion but also an evaluative notion.³⁶ Some components of what makes a risk risky are evaluative aspects: risk events are »unwanted« events, and a risk is a risk to something that is valued.³⁷

Both of these two competing conceptions of emotion and risk evaluation, however, follow a squarely probabilistic understanding of risk. To see emotions as heuristic substitutes for sound rational thinking, is to assert that individuals lack the capacity to process information that maximises their expected utility. These heuristic shortcuts »invariably cause individuals' evaluations of risks to err

³⁵ de Sousa, »Moral Emotions«, *Ethical Theory and Moral Practice* 4 (2001): 109–126; Michael Lacewing, »Emotional self-awareness and ethical deliberation«, *Ratio* 18 (2005): 65–81. For the identification of emotional intentionality in Plato, see Lauren Ware, »Erotic Virtue«, *Res Philosophica* 92: 4 (2015): 2–3.

³⁶ Roeser, »Emotional Reflection About Risks«, in *Emotions and Risky Technologies* (2010): 238. On the role (and, often, requirement) of emotions for moral knowledge, see also Damasio, 1994; de Sousa, *The Rationality of Emotions* (Cambridge, MA: MIT Press, 1987); Haidt, 2001; M. O. Lettief, »Seeing and caring: the role of affect in feminist moral epistemology«, *Hypatia* 10 (1995): 117–137; Martha Nussbaum, *Upheavals of Thought* (Cambridge: Cambridge University Press, 2001); Roeser, *Ethical Intuitions and Emotions: A Philosophical Study*, (Ph. D. diss., Free University, Amsterdam, 2002); Robert Solomon, *The Passions: Emotions and the Meaning of Life* (Indianapolis, IN: Hackett, 1993); K. Schraeder-Frechette, *Risk and Rationality* (Berkeley: UC Berkeley Press, 1991), 30. Nussbaum, 2001, argues specifically that emotions are judgments of value.

³⁷ Pritchard, 2005, 1–2.

in substantial and recurring ways.«³⁸ Even if we accept that emotions function as heuristics in one way or another, the heuristic model is itself based on economic modelling of probabilities in the first place.³⁹ Both sides of the emotion and risk debate are still part of that probabilistic statistical framework.

5. Emotion and Risk on the Modal Account

When we think about how emotions are or can be involved in decision-making and evaluation, we can judge them on the basis of what they contribute to the cognitive task at hand. Whether a cognitive tool—like an emotion—steers us wrong depends on the purpose it is meant to serve. As we've seen, both the general literature on risk and its evaluation, and the more specific literature on emotions and risk take a probabilistic understanding of risk. It follows, then, that emotions are assessed as helpful or not with regard to how they impact reasoning about probabilities: weighing up and calculating about statistical likelihoods. It's no surprise, then, that there persists such a script regarding *Reason v. Emotion*: when rely on emotions we yet judge risk probabilities badly. However, if we entertain the possibility that risk can be understood along modal lines, rather than probabilistic lines, it will change that role that emotion has in the decision-making and evaluating processes. In this section, I will examine what a

³⁸ Dan M. Kahan, »Two Conceptions of Emotion in Risk Regulation«, *University of Pennsylvania Law Review* 156 (2008): 746; Christine Jolls, et al., »A Behavioral Approach to Law and Economics«, *Stanford Law Review* 50 (1998): 1471, 1477–1478.

³⁹ Susan Bandes, »Emotions, Values, and the Construction of Risk«, *Pennsylvania Law Review* 156 (2008): 15–16; Thomas Gilovich and Dale Griffin, »Introduction: Heuristics and Biases: Then and Now«, in *Heuristics and Biases: The Psychology of Intuitive Judgment* (2002), at 103; Steven A. Sloman, »Two Systems of Reasoning«, in *Heuristics and Biases: The Psychology of Intuitive Judgment*, at 379–396; and Keith E. Stanovich and Richard F. West, »Individual Differences in Reasoning: Implications for the Rationality Debate?«, in *Heuristics and Biases: The Psychology of Intuitive Judgment*, at 421–440.

modal account of risk might mean for how we understand emotion's role in the evaluation of that risk.

We can see why the data from the gruesome evidence cases can be problematic if we take that purpose to be ascertaining probabilities: anger consistently gets probabilities wrong. But what can emotions offer in evaluations of modal proximity? If what is involved in judgements of modal proximity is considering how much needs to change about the world for it to be the case that the defendant is guilty, *we need to shift the dialogue of the debate from how emotions impact calculations, predictions, and odds, to how they impact the cognitive tasks involved in ordering possible worlds.* Here's the speculation: at least some part of this is a distinctly creative and imaginative task; of considering degrees of similarity, and envisioning close alternatives that—even if statistically unlikely—are close and easy and could explain the nearby conditions under which a defendant is innocent. What we need to look at now is the role of emotions as cognitive tools in these evaluative-imaginative tasks. In what follows, I sketch four dimensions along which emotions as tools in evaluations of modal proximity can be investigated.

First, the significant body of research on emotions and creative problem-solving can be harnessed with specific reference to modal creative thinking. Empirical studies in psychology and cognitive science consistently demonstrate that »positive« emotions make positive outcomes appear more likely, whereas negative emotions make negative outcomes appear more likely.⁴⁰ Further, we can see that emotions create different mental sets that are more or less useful for solving certain kinds of problems. For example, happiness facilitates a mental set useful in creative tasks in which one must think flexibly,⁴¹ intuitively, or expansively, in order to make

⁴⁰ E. Johnson and A. Tversky, »Affect, generalization and the perception of risk«, *Journal of Personality and Social Psychology* 45 (1983): 20–31; J. D. Mayer, Y. N. Gaschke, D. L. Braverman, and T. W. Evans, »Mood-congruent judgment is a general effect«, *Journal of Personality and Social Psychology* 63 (1992): 119–132.

⁴¹ K. Fieldler, »Affective states trigger processes of assimilation and accommodation«, in *Theories of mood and cognition: A user's guidebook*, eds. L. L. Martin and G. L. Clore (Mahwah, NJ: Erlbaum, 2001): 85–98.

novel associations. Whereas sadness better conduces to the mental set in which problems are solved more slowly, with particular attention to detail, and through deliberate and more focussed strategies.⁴² Palfai and Salovey have argued that these two different styles of processing fit themselves to different kinds of problem solving: positive emotions making one better at inductive problems such as analogical reasoning, and negative emotions making one better at deductive logical tasks.⁴³ What might be most promising for assessing the role of emotions in modal imagining, however, is the work by Isen and her colleagues and the debates that ensued from this work. Two findings have become so robust they are now sometimes used as affect checks in other studies: first, that people in whom positive affect is induced are found »to give unusual (but reasonable) first associates, and have a more diverse set of associates, to neutral words«, and to produce artistic creations that are judged as more creative.⁴⁴ An understanding of how emotions—anger, or compassion, for example—induced in court affect counterfactual reasoning, can be the starting point for structuring legal environments so as to bring about the conditions which best facilitate creative imagining of possible worlds.⁴⁵

⁴² Alice Isen, K. A. Daubman, and G. P. Nowicki, »Positive affect facilitates creative problem-solving«, *Journal of Personality and Social Psychology* 52 (1987): 1122–1131.

⁴³ T. P. Palfai and P. Salovey, »The influence of depressed and elated mood on deductive and inductive reasoning«, *Imagination, Cognition, and Personality* 13 (1993): 57–71.

⁴⁴ A. Isen, M. M. S. Johnson, E. Mertz, and G. F. Robinson, »The influence of positive affect on the unusualness of word associations«, *Journal of Personality and Social Psychology* 48 (1985): 1413–1426; E. R. Hirt, R. J. Melton, H. E. McDonald, and J. M. Harackiewicz, »Processing goals, task interest, and the mood-performance relationship: A meditational analysis«, *Journal of Personality and Social Psychology* 71 (1996): 245–261. See Isen, »Positive affect and creativity«, in *Affect, creative experience, and psychological adjustment*, ed. S. Russ (Philadelphia: Brunner/Mazel, 1999): 3–17 for a thorough discussion of these topics.

⁴⁵ I consider the conditions in which the emotion of compassion can operate as a good heuristic guide in legal judgment in »Compassion in the Courtroom«, in *The Moral Psychology of Compassion*, eds. Justin Caouette and Carolyn Price (Rowman & Littlefield, forthcoming).

A second way in which emotions can play a role in the evaluation of modal risk is described in the research on *emotion and attention*: emotion aids in information-gathering, to the extent that motivationally-relevant objects receive greater attention.⁴⁶ This could provide an explanation as to why the angry juror judges anger-inducing events as more likely to happen in the future, and why she notices more anger-inducing events that are actually present to her. What we have here is an alternative explanation for the results of Bright and Goodman-Delahunty in the gruesome images cases. They judged the risk of wrongful conviction as lower, because they can imagine more acutely the risk of the killer going free due to the emotion itself making the anger-inducing possibilities appear more close-by. Now, we can see that a consequence of introducing rules of modality might make it possible for emotion to skew both ways. What it does offer though—which has not yet been explored in the literature on legal risk—is an explanation of the affective underpinnings of this outcome.

Third, we can consider what emotions contribute in perceptions of similarity. In the modal cases, we want to focus on perceptions of similarity between possible worlds. One common theme in the recent literature has been an appeal to perception as a useful model for understanding how emotions operate.⁴⁷ Perceptual emotion theories emphasise three aspects of emotion that can offer marked contributions to the kind of imaginative reasoning evaluation regarding modal proximity requires: the cognitive components of these emotions;⁴⁸ their world-directed intention-

ality;⁴⁹ and the proposed similarities between »the epistemic roles of perception and emotion—the former in justifying sensory knowledge of the world, the latter in justifying evaluative knowledge.«⁵⁰

Fourth, emotions are an important mechanism by which we are able to take multiple perspectives. This affords a dynamic role for emotions in imagining possible worlds. Nussbaum has argued persuasively for transforming public institutions to bring about these emotions for exactly this reason: so that we can picture the world from the perspective of other members of society. On her view, emotions such as sympathy and compassion can broaden our »circle of concern«.⁵¹ In her recent *Political Emotions*, Nussbaum builds a case for cultivating the emotions in educational curricula, in public art and ceremonies, and in political activity for their imaginative capacities.⁵² Harnessing »positional imagination« in a way that includes difference—taking the place, imaginatively, of stigmatised groups, dissenters, and the varied *other*—may generate a genuine commitment to considering possible worlds before counting on the security of a statistical model that privileges heuristics and stereotypes.

6. Scaffolding for a Creative Courtroom

Within the framework of the justice system, what structures can we put in place to facilitate the creative and imaginative thinking

⁴⁶ P. J. Lang and M. Davis, »Emotion, motivation, and the brain: reflect foundations in animal and human research«, *Progress in Brain Research* 156 (2006): 3–29.

⁴⁷ For two independently useful overviews of perceptual theories of emotion, see Julien A. Deonna and Fabrice Teroni, »Perceptual theories of the emotions«, in *The Emotions: A Philosophical Introduction* (London: Routledge, 2012): 63–75; and Mikko Salmela, »Can emotion be modelled on perception?«, *Dialectica: International Journal of Philosophy of Knowledge* 65 (2011): 1–29.

⁴⁸ Robert C. Roberts, *Emotions: An Essay in Aid of Moral Psychology* (Cambridge: Cambridge University Press, 2003).

⁴⁹ Ben-Ze'ev, 2010; Sabine Döring, »Explaining action by emotion«, *The Philosophical Quarterly* 53 (2003): 214–230; Thomas Reid, *Essays on the Active Powers of the Human Mind* (London: Thomas Tegg, Cheapside: 1843 [1788]).

⁵⁰ Cain Todd, »Emotion and Value«, in *Emotion and Value*, eds. Sabine Roeser and Cain Todd (Oxford: Oxford University Press, 2014), 3. See also Michael Tye, »The experience of emotion: An intentionalist theory«, *Revue Internationale de Philosophie* 62 (2008): 25–50, for the hypothesis that evaluative qualities are directly afforded to us via our perceptual experiences.

⁵¹ Nussbaum, 2001, and *Political Emotions: Why Love Matters for Justice* (Cambridge, MA: Harvard University Press, 2013), 11.

⁵² Nussbaum, 2013, esp. 61–62, 189–191, and 251–252.

about risk called for if one accepts a modal account of risk? Further, what practices need to be refined or abandoned for such facilitation?

One pressing area is in how this might alter our evidentiary standards. In the U.K. and U.S. legal systems, civil proceedings are governed by the *Preponderance of the Evidence* standard. A proposition satisfies this standard just in case that proposition's conditional probability, given the available and admissible evidence, is greater than .5.⁵³ If all we were concerned about in assessing the legal risk of a wrongful conviction is to ensure that risk remains below the 50% threshold of likelihood, then we could countenance evidence that—while very unlikely to generate a wrongful conviction—may yet make it an easy possibility that the risk event does occur. If we take a modal account of risk, our standard of evidence must change. For example, we might then require independent corroborating evidence of a kind that satisfies the *safety conditions* regarded for existing epistemic theories as necessary for knowledge.⁵⁴ A further consequence of these conditions might impact also the standard of reasonable doubt acceptable.

Second, if what we want from our emotions is for them to serve the cognitive aim of suitably tracking modal proximity via the imaginative lateral thinking best conducted by a positive affect, then a case can be made for sensitivity to otherwise overlooked

institutional welfare conditions of the variety of legal actors involved. This could range from monitoring fear and insecurity about wage loss in serving on a jury, to advocating for healthier and more enriching lunches, to taking on board the research that consistently demonstrates that we reason better and employ fewer biases when we have more sanitary deliberation space.⁵⁵

Third, this research might motivate legal regulators to reassess the order of proceedings. Perhaps, prior to the visual evidence that may spark emotions that stifle creative thinking, a dedicated period be instituted to engage in possibility deliberations. However, as we have seen, while emotions can be an important source of moral insight, they are no guarantee for success. An important part of these deliberations ought therefore to include a critical examination of those very emotions, and engaging in what Jäger and Bartsch term »meta-emotions«—emotional reflection about experienced emotion.⁵⁶ Lacewing also advocates with regard to »second-order emotions«, that is, how we feel about our emotions, that they can aid in deliberating about our first-order emotions.⁵⁷ One model legal theorists and practitioners may be able to exploit in creating conditions conducive to modal reasoning about risk is the recent work being done with regard to Participatory Risk Assessment (PRA) strategies. The aim of these projects is to widen the circle of debate regarding institutional risk to include not only experts, but those impacted by, among other things, risky technologies.⁵⁸ Two considerations championed in PRA strategies can be

⁵³ Michael Blome-Tillmann, »Sensitivity, Causality, and Statistical Evidence in Courts of Law«, *Thought: A Journal of Philosophy* 4:2 (2015): 102–112.

⁵⁴ These kinds of safety conditions are defended in Ernest Sosa, »How to Defeat Opposition to Moore«, *Philosophical Perspectives* 13 (1999): 141–154; Timothy Williamson, *Knowledge and its Limits* (Oxford: Oxford University Press, 2001); Pritchard, *Epistemic Luck* (Oxford: Oxford University Press, 2005), »Anti-Luck Epistemology«, *Synthese* 158 (2007): 277–297, »Anti-Luck Virtue Epistemology«, *Journal of Philosophy* 109 (2012): 247–279; and Martin Smith, »Justification, Normalcy and Evidential Probability«, M. S., <http://philpapers.org/rec/SMIJNA-2>. But see David Enoch, L. Spectre, and T. Fisher, »Statistical Evidence, Sensitivity, and the Legal Value of Knowledge«, *Philosophy & Public Affairs* 40 (2012): 197–224, for a different modal constraint on legal evidence, which draws on the sensitivity condition of Robert Nozick, *Philosophical Explanations* (Oxford: Oxford University Press, 1981).

⁵⁵ Simone Schnall, et al., »Disgust as Embodied Moral Judgment«, *Personality and Social Psychology Bulletin* 34 (2008): 1096–1109; Jonathan Haidt, »The Emotional Dog and its Rational Tail: A Social Intuitionist Approach to Moral Judgment«, *Psychological Review* 108 (2001): 814–834; Thalia Wheatley and Jonathan Haidt, »Hypnotic Disgust Makes Moral Judgments More Severe«, *Psychological Science* 16:10 (2005): 780–784; Jesse Prinz, »The Emotional Basis of Moral Judgments«, *Philosophical Explorations* 9:1 (2006): 29–43.

⁵⁶ Christoph Jäger and Anne Bartsch, »Meta-Emotions«, *Grazer Philosophische Studien* 73 (2006): 179–204.

⁵⁷ Lacewing, 2005, 80.

⁵⁸ Sabine Roeser and Udo Pesch, »An Emotional Deliberation Approach to Risk«, *Science, Technology, & Human Values*, online first (July 2015).

effectively coopted to better integrate emotional deliberation in creating a legal environment more conducive to the kind of creative reasoning successful risk assessment requires on the modal account. First, by *creating symmetric setups of deliberation* that afford a positive role for expert testimony, but also and intentionally allow for all participants to deliberate in a spirit of »equality and empowerment«⁵⁹. Second—and this is a strategy which should please philosophers—by creating a space to *ask questions*: in actively asking lay members of a community consultation group considering the risks of a proposed nuclear energy proposal, »Under what conditions would you be less worried?«, decision-makers become immediately engaged in modal thinking about risk.⁶⁰ A legal framework that could facilitate these kinds of participatory deliberation may harness the creative power of emotions within a just and ordered courtroom.

Conclusion

Evaluating legal risk in accordance with the modal account opens up a new direction of study within the forefront of law and emotion research. Of particular public importance is how we might structure legal and political institutions such that they not only reflect what purpose emotions serve, but also appraise, channel, and educate the emotions, with an eye toward creating the conditions for a deliberative and creative justice system. What's exciting as well is the potential for this examination of the role of emotions in risk and decision-making to shed light on areas outside the courtroom in which risk features prominently: for example, in crisis intervention, in security risk analysis, and in the assessment of medical risks. Emotions offer a uniquely powerful insight into what is at stake—for the individual and for social groups—in

⁵⁹ Ibid., 13–14.

⁶⁰ J. Nihlén Fahlquist and Sabine Roeser, »Nuclear Energy, Responsible Risk Communication and Moral Emotions: A Three Level Framework«, *Journal of Risk Research* 18:3 (2014): 333–346.

these debates. The possible ways in which we can harness this insight remain open.⁶¹

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⁶¹ An earlier version of this paper was presented at the 2nd annual conference of the European Philosophical Society for the Study of Emotion, held at the University of Edinburgh in July 2015. I am grateful to the conference participants for their very helpful comments; and to Lee John Whittington and Alfred Archer for further discussion of the topics in this chapter.

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