Emotion Researcher
ISRE's Sourcebook for Research on Emotion and Affect

New Editor Search

Time for new blood at the helm of Emotion Researcher! ISRE is seeking one or more new editors, who should take over in April 2017. It is a fun and highly rewarding job. Nominations of suitable candidates are also encouraged.

THE ROLES OF EMOTIONS IN THE LAW

In this issue of Emotion Researcher, we focus on the roles emotions play in the law. We will explore the emotions of jurors, judges, defendants, attorneys and other legal actors.

Editor's Column

Click on the post's title to get a quick overview of the contents. Come along, there is much to enjoy in this issue on Law and Emotions.

Call for Papers

ISRE 2017 aims to present the very best in contemporary emotion theory and research, in the welcoming setting of Saint Louis, Missouri.

ISRE Matters

ISRE's President talks about law and emotions, exploring the impact of emotion theories on our understanding of legal responsibility.

An Interview With Jim Russell

Read an interview with Jim Russell, one of the world's leading affective scientists. Jim clarifies what underlies his trademark skepticism about traditional emotion theories, and how he came to develop the influential concept of the circumplex and psychological constructionism as a research program.

Spotlight

This issue's spotlight is on Eva Krumhuber, a psychologist from University College London who studies emotional expressions, trying to understand how the dynamic quality of facial displays is used to understand their affective meaning.

Traffic Count ———— HOME ———— **Resources**

Editor's Column

🌐 **emotionresearcher.com**/2016/10/emotions-and-the-law/

October 2016 – In a poignant passage of *To Kill a Mockingbird*, Harper Lee makes the following remarks: "in our courts, when it's a white man's word against a black man's, the white man always wins…The one place where a man ought to get a square deal is a courtroom, be he any color of the rainbow, but people have a way of carrying their resentments right into a jury box". As it turns out, it is not only resentments that jurors carry into the jury box, but a panoply of other emotions, including empathy, anger, hatred, loathing, fear, anxiety, sadness, grief, compassion, mercy, disgust, and pity.

This is true whether the jurors are black, white or any other color of the rainbow, even though Harper Lee was certainly right to emphasize that racial discrimination, beginning long before cases are tried by juries, is pervasive in the American justice system. Furthermore, jurors are not the only legal actors who are deeply affected by their emotions. Judges, prosecutors, defendants, attorneys, clerks, witnesses, experts, family members, spectators, policemen, prison administrators, probation officers, and legislators are all swayed in complicated ways both by their own emotions and by their understanding of what emotions other actors are feeling.

Does the murderer feel remorse for what he did? Is the rape victim deeply distraught? Was the policeman genuinely in fear for his life? Was the aggravated battery committed in the heat of passion? Is the sexual abuser ashamed enough not to repeat the offense?

Until very recently, we had no systematic understanding of how emotions affect the law. This is because the law largely embraced an age-old fiction, namely that legal actors are, or at least ought to be, passionless practitioners of pure reason. The emergence of Law and Emotion as a field of investigation, ushered in partly by the downfall of the reason-passion dichotomy in the sciences of mind, is finally starting to dispel this fiction, shedding much needed light on how the emotions of legal actors affect the legal system.

As Susan Bandes points out in this issue's opening article, the guiding principle of Law and Emotion is that the law should make its assumptions about emotions explicit, and evaluate them in light of the best available scientific evidence. In many cases, the assumptions are not only implicit, but also based on non-existent or faulty evidence. For example, it is commonly assumed that whether a defendant is truly remorseful is easily perceivable, or that "shaming" punishments can function as deterrents. Both assumptions have a major impact on how defendants are sentenced, but they are highly questionable in light of psychological evidence: remorse is not reliably expressed in facial expressions or body language and "shaming" punishments often discourage offenders from improving their behavior rather than work as deterrents. After exploring a variety of other examples of implicit and/or problematic assumptions about emotions in the law, Bandes proceeds to discuss some possible ways in which better knowledge about how emotions work could lead to legal reform.

Terry Maroney focuses her attention specifically on the emotions of jurors and judges. With respect to jurors, she points out that current studies rely largely on mock jury experiments, which have significant heuristic limitations. Bracketing those, Maroney explores how *emotion-congruency* mechanisms and *affect-as-information* mechanisms may explain some of the empirical data on how anger and sympathy in particular affect juror's judgments of blameworthiness and deserved punishment. With respect to judges, Maroney explores the detrimental effects of holding judges accountable to an unrealistic standard of "dispassion". The ideal of dispassion in effect forces judges to hide their emotions, and ultimately stands in the way of distinguishing legitimate from illegitimate influences of emotions on the decision-making of judges.

Sam Pillsbury's article explores the relation between emotions and theories of punishment. Pillsbury reminds us that there are two main theories of just punishment. According to the theory of punishment as retribution, punishment is

just if it is deserved according to the nature of the wrong done. According to the theory of punishment as deterrence, punishment is just if it deters future wrongs by the offender and by society at large. In either case, it is assumed that sentencers will make decisions about punishments largely unencumbered by emotions. Pillsbury points out that in real life things work quite differently, because the application of both retributivist and deterrentist principles is far from emotion-less. The article then proceeds to explore whether emotional expressions by victims and defenders at sentencing provide information that is relevant to determine either offender culpability (for retribution) or offender's future dangerousness (for deterrence).

Eyal Aharoni and Nicole Vincent introduce the emerging field of neurolaw, which focuses on how neuroscientific knowledge can inform legal decisions, by using psychopathy as a case study. One of their main points is that we have to be careful in applying neuroscientific results to legal settings. First, the notion of emotion implicitly held in legal doctrine differs in various ways from the notion of emotion used in neuroscience. Second, the scientific determination that an agent's capacities are impaired, as they appear to be in the case of psychopathy, is not the same as the legal determination that an agent's capacities are impaired. As they note, a diagnosis of psychopathy is almost never legally excusing. In the later part of their paper, they explore some possible reasons why neuroscientific and legal criteria of impairment may differ.

In his customary *ISRE Matters* column, Arvid Kappas, ISRE's President, writes on the theme of emotions and the law, focusing on how different theories of emotions may influence the way we think of responsibility in the commission of a crime. Kappas argues that our assessments of legal guilt will be fundamentally different depending on whether we think of emotional responses as being reflex-like, and consequently not the result of choice, or whether we think of emotions as biasing, in ways we may or may not be aware of, our decision-making.

The *Young Researcher Spotlight* of the issue is on Eva Krumhuber, who works on emotional expressions, studying in particular their dynamic change over time. In her research, Krumhuber has explored how the speed at which a smile unfolds affects the degree to which it is perceived as authentic (roughly, the shorter the onset and offset of the smile, the less authentic the smile). Generalizing from this research, Krumhuber has argued that we should move beyond the static pictures of facial expressions traditionally used by basic emotion theorists, and include in our exploration of the affective meaning of expressions contextual information about their temporal dynamics.

Last but not least, the interviewee of this issue is Jim Russell, one of the world's leading affective scientists. In his interview, Russell tells us about how he became interested in emotions, and how early in his career he came to develop the influential concept of the circumplex. Russell also clarifies what underlies his trademark skepticism about traditional emotion theories, which is grounded both in the realization that emotion concepts have a prototype structure and in evidence about their cross-cultural variability. Russell also reminisces about his editorship of *Emotion Review* and outlines his current attempts to integrate psychological constructionism with other research programs in affective science.

To whet your appetite, let me also say that a new issue of ER on Emotions and Politics is in the works. It will be published a little after the US Presidential elections, and it will all help us make sense of the wild, unexpected, scary, entertaining, silly, and momentous campaign we are all witnessing. As usual, be in touch with comments, suggestions, ideas for future issues, feedback on the website, and anything else that strikes your fancy. And enjoy this issue!

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Previous Editor's Columns

Editor's Column – Guilt Issue

Editor's Column – Understanding Love Issue

Editor's Column – Facial Expressions Issue

New Editor Search

10/2/2016

I have decided to step down as editor of Emotion Researcher in April 2017, after about 4 years of editorship. I have very much enjoyed transforming the Emotion Researcher into an online resource, and developing it into an inter-disciplinary reference work accessible to emotion researchers the world over. I am proud of what has been achieved. But it is time for some new blood. The Emotion Researcher is still in its infancy as a Sourcebook, and it needs lots of tender and loving care to further grow into the terrific online resource it can and should be.

Andrea Scarantino

ISRE Matters – Emotions and Law Issue

[Arvid Kappas, Psychology, Jacobs University Bremen, ISRE's President](#)

Why Did the Shark Do That?

October 2016 – Many years ago (>20 years), during an ISRE dinner, I was seated next to Phoebe Ellsworth, who, of course, holds the Frank Murphy Distinguished University Professor of Law and Psychology at University of Michigan. We had exchanged some lawyer jokes over the course of the evening (I still remember one about people stranded on an island and it involved sharks – ask me to tell you the joke the next time you see me), and I felt that our conversation (including the jokes) was one of highlights of the evening. However, it was only in the days following that I thought more seriously about the connection between emotion research and the law. Something I hadn't done before. And then, it disappeared again in some stack of my memory.

Do you *do* emotions* or do they make you do stuff?

Fast forward, perhaps two decades, and a very persuasive student convinced me to give her an independent studies course on criminology. I knew immediately that my impulse to accept her request was probably a mistake and that it would cost me dearly in time that I did not have. But a promise is a promise. We agreed on an introbook to provide the structure of the course and then I went off to learn a bit about criminology. To my amazement and possibly shock there appeared to be a dominance of *rational choice theory* in the text. Basically, according to this view, people did bad things, because they *decided* to do bad things. Those of you who know me, know that I am not a friend of rational choice theory. Actually, come to think of it, few emotion researchers are friends of rational choice theory, regardless of their disciplinary background. And that time, a few years ago, was when I started to think a bit more seriously about *Emotions and the Law*, the topic of this issue of the *Emotion Researcher*. While the contributions in this issue deal primarily with the emotions of humans in the legal system, such as judges or jury members, I will address briefly the issue of how we conceive of emotions as playing a role in committing crimes. This has important implications for the assessment of legal responsibility.

* The section title refers to Averill's notion that we perceive emotions as passions – things that happen to us, but that they are essentially actions – [transitory roles](#) that we might choose to enact. In this sense we may *do* emotions.

What kind of relationship do we believe emotions and criminal actions to have?

One of the fascinating aspects of emotion research is that there is a large variety of theories on whether emotional states are discrete or continuous, how many emotions there are, how they are expressed, and how the different emotional components relate to each other. Some even use the term "emotion" as being synonymous with "feeling", while others think of emotions as syndromes that encompass responses to external or internal events that are explicitly or implicitly processed (appraised) and that cause changes in central and peripheral physiological activity, expressive behavior, subjective experience, and action-tendencies or -readiness. Whether emotions are mere feelings or complex syndromes, the question is: Do they make us DO anything? To develop the point a bit, is the relation between emotions and actions reflexive and standardized, or do emotions just change the probability of the occurrence of certain behaviors? If the latter, does the individual have a genuine choice to follow the action tendency suggested by the emotion?

Scherer, for example, has proposed that emotions decouple stimuli and fixed reactions, as would be the case in reflexes. In this case, the individual would have a choice to act in a particular way. Other theories inspired by James have been interpreted to mean that emotions do not really make you do anything, because they would come too late in the causal order. You do not strike because you are angry, but rather are angry because you strike. However, this is mainly because James talks about feelings and is a bit vague on the elicitation of what most people today think of as emotion (see also Ellsworth). The way we settle the question of emotion-action causation is very important with regard to the relationship between emotions, free will, and actions.

When deciding how guilty we consider an individual in certain circumstances to be or what punishment would be appropriate, it is intuitively crucial to establish whether their actions were freely chosen.

Consider the following three possibilities:

1) Emotions are crucial part of a conscious analog information-processing system that gives us a short-hand summary, coached in terms of feelings and perhaps felt action tendencies (consider the Feelings-as-Information Theory). Example of a hypothetical internal monologue:

There is person X who did something to me, and I feel like I want to pour my glass of beer right over his head. Now! But maybe I won't – it would not change the cause of my problem with him and besides, he'd probably do something rather unpleasant to me – so I just won't do any such thing. (perceptions are neutral, I am aware of my feelings and they help me to decide what to do – this is somewhat of a straw man position for the sake of my argument, as few humans will feel this neutral and detached while being aware of emotional tendencies).

2) Emotions bias my perceptions, judgements, and behaviors in ways I don't even know and realize. Example of internal monologue:

This guy is an idiot, I never liked him in the first place, I won't support his bid for the promotion. (Here there seems to be freedom of action, I am not aware that my perception of the situation is already very much affected by the emotional processes triggered by the events at hand).

3) Emotions hijack our behavior and make us act.

Yes, I told him he was an idiot. To his face. I know that was stupid, but at the time I was so upset, I just said it out loud, spontaneously, whether it was a good idea or not. (Here the individual is driven by passion – or perceives it this way).

It is clear that, on the one hand, these scenarios relate to how we conceive of emotions from the layperson point of view. As Jim Averill has pointed out – lay-folk tend to perceive emotions as passions – things that happen to us, rather than as actions – things we do. If we *do* emotions, in the sense that there is a free will to enact the roles that the emotions would suggest, then indeed punishment might be swift. If I know that I have been insulted, and my culture knows the role of the male in a particular position that has the right to physically attack another male under such circumstances, then I can simply let go, punch someone, and do what was proper in that situation. People would understand. They would say that what happened was simply what had to happen, given that anger was righteous, the behavior was accordingly appropriate.

So how is a judge, or a jury to think of emotions? Are we slaves to our emotions? Do they rob us of personal responsibility? Are they something like drugs, or alcohol? The consequences of the way we think about these questions are enormous. By affecting how legally guilty we take agents are in emotional situations, they can make a difference between whether someone spends life in prison, a few years, or is acquitted. And who can provide the judge with scientific evidence on the matter? We, emotion researchers? Apparently. So, if I say "Emotions last between 500ms and 4000ms", as some of us think, then it is plausible that I punch someone who pours a glass of beer over my head *because the emotion made me do it*. It's all within the super-brief time window of four seconds. But what about that nasty thing I did to that nasty person who said the nasty thing about me *yesterday*? Is that still the same emotion

driving my behavior today? Can I be debilitated by the "mysterious powers" of my anger for a day, or weeks, or years? Or is revenge a dish best served cold?

These types of thoughts also occur when looking at so-called honor crimes. Someone might kill his sister because she was seen with another man, bringing shame to the family. Is that shame an emotionally cool cultural concept that implies a change in the meaning structure of the value of my family's worth in my social network? Or is that shame a hot emotional spear through my heart that constantly makes me tremble and sweat? In other words – is it cold or hot? These issues of how emotions relate to behavior are crucial to how we interpret whether a particular behavior is acceptable or not, and to what degree laws should sanction it.

Perhaps you get intrigued if you did not yet think about emotions and choice, or emotions and actions in that way and how your own research relates to emotions and law. Arnold and Frijda for example thought of emotions as changing action tendencies, or changes in action readiness – a bias of response hierarchies if you will that reorganizes the probability of certain behaviors to occur.

A short side note for my appraisal friends – why is the intensity of emotions so high in certain territorial contexts, such as someone cutting in a queue at a supermarket, or sneaking into our parking space? In both cases people may literally rage, even if the relevance of the goal violation (in appraisal terms) is not so high. Or are there biologically prepared goal violations that involve territory, partner fidelity, and a couple of other ones – oh, I smell a nice topic for a debate here …

The Emotion Issues that Call the Emotion Researchers' Bluff

These days, I spend much time in the context of affective computing and I enjoy it very much, because trying to build emotional systems means that one has to be explicit regarding one's assumptions of what emotions *are* – or, as Nico Frijda would put it, about "The Laws of Emotion". There is no hiding behind "*no comment*", "*we do not know*", "*we are not sure" or "come back in 5 years"*. Artificial emotion systems are beingimplemented as we speak, so we, as emotion researchers, must take position on all thorny questions relevant to building systems such as emotional robots. In practical contexts there is a necessity to be explicit with regard to what emotions actually do, how long they last, and to what degree (successful) regulation of them could or could not occur. This is particularly the case in a legal or crime contexts. And just like the robot implementer must make a decision, so must the judge.

So we better think hard about these questions – how long do emotions last? Are there affective behaviors that could not be regulated? Or are there even situations or events that have to be appraised in a particular way that behaviors are unconditional. To complicate matters – apart from these issues somehow related to free choice, there is the issue of what stance to take from the outside. Guilt and punishment are never independent of a societal consensus. Many countries, for example, will argue that someone who is a child, someone who is mentally not an adult, someone who is intoxicated or is suffering from some psychopathology might not be as responsible as a healthy adult of the same society. Hence, they should not receive the same type of punishment. Here, emotion researchers might give advice, but when it comes to issues of responsibility of action, emotion researchers probably do not step up to the plate. It really matters how we think about emotions, it really matters to what degree there are empirical data that support our point of view. The ubiquity of autonomous machines also triggers much thought regarding responsibility and guilt in machines – but I will leave this for another occasion.

Are You Planning Already?

One more thing before I close – we are getting more concrete regarding the planning of our next conference. As posted on the list-serve, our Facebook page, and our twitter stream – the next ISRE meeting will take place in St. Louis, MO, July 26-29, 2017 at the Chase Park Plaza Hotel. Check out the time-line for submissions in the Call for Papers posted on the front page of Emotion Researcher.

By the way, at the ISRE2017 meeting my term as president of ISRE will end, unless we change the bylaws so that I can remain for eternity and beyond. I assume this to be an unlikely event, so we will need someone to take over. If you want to propose someone, please send a mail to president@isre.org. Self-nominations are possible.

Call for Papers

We are pleased to announce that the next meeting of ISRE will be held in the USA in the city of St. Louis, Missouri. The dates are **26-29 July 2017**. Our goal at ISRE 2017 is to present the very best in contemporary emotion theory and research, encompassing the wide range of disciplines that convene at ISRE's biannual meetings.

We want to feature the topics and issues that most interest emotion researchers. The conference program will feature an invited plenary speaker each day, and otherwise will consist of talks and posters selected from members' submissions. Nonmembers will discover that it's easy to join ISRE! The conference's interdisciplinary and international Program Committee, chaired by Jerry Parrott, invites proposals for symposia (of up to 5 papers), individual oral presentations, and posters. Unconventional formats, such as debates or workshops, will be considered as well as conventional panels of speakers.

All relevant disciplines are welcomed, including psychology, philosophy, sociology, neuroscience, linguistics, affective computing, history, anthropology, and the humanities and social sciences generally. Symposia that include more than one discipline are especially encouraged so as to facilitate cross-disciplinary communication. Authors are asked to keep in mind the interdisciplinary nature of the audience when designing their presentations. The Program Committee intends to announce acceptances by late January to allow ample time for attendees to arrange travel and funding. The deadline for submissions will be **20 December 2016**.

The Organizing Committee, chaired by Hillary Anger Elfenbein, aims to create the perfect atmosphere for this meeting. St. Louis is a thriving metropolitan area filled with cultural riches to explore. The city was a transportation hub in the days of the railroad and Mississippi riverboats, and was considered the "Gateway to the West" as the starting point for wagons on the Oregon Trail. The conference will be held in the city's Central West End, which has a European feel with small walkable streets and large sidewalks full of outdoor dining. Eateries feature upscale, local, and ethnic cuisine. Our venue will be the famed Chase Park Plaza, which often ranks as one of the best hotels in the US due to its luxurious renovation that preserves historical details of the landmark property. A light rail system to the airport is half a mile (1 km) from the hotel. Washington University in St. Louis is a top school in the US and a generous supporter of the ISRE conference. St. Louis has easy flight connections across the US and to major airline hubs overseas.

Further information about the conference, along with links for submissions and registration, will be posted at isre.org/isre2017.

THE ROLES OF EMOTIONS IN THE LAW

10/2/2016

In this issue of Emotion Researcher, we focus on the roles emotions play in the law. We are assisted in our exploration by some of the leading figures in the burgeoning field of Law and Emotion:

1. Susan A. Bandes, DePaul University College of Law: What Roles Do Emotions Play in the Law?

2. Terry A. Maroney, Vanderbilt Law School: Emotion in the Behavior and Decision Making of Jurors and Judges

3. Samuel H. Pillsbury, Loyola Law School: Emotion and Criminal Punishment: In Principle and in Practice

4. Eyal Aharoni, Dept of Psychology, Georgia State University & Nicole A Vincent, Dept of Philosophy, Georgia State University: Psychopathic Brains on Trial

What Roles Do Emotions Play in the Law?

emotionresearcher.com/what-roles-do-emotions-play-in-the-law/

Susan A. Bandes, DePaul University College of Law

October 2016 – The legal system has long been inhospitable terrain for the study of emotion. The standard model of legal education treats law as a science, legal reasoning as a purely deductive process (Langdell 1871), and emotion as the enemy of reason. In this model, emotions are individual, arbitrary, unanalyzable, and ultimately a threat to the proper functioning of the legal system. They are, in the words of one prominent legal scholar, "inconsistent with the very norms that govern and legitimate the judicial power" (Fiss 1990). This attitude is still pervasive in law. The current Federal Rules of Evidence, for example, declare that evidence should not be admitted at trial if it encourages the jury to decide on an improper basis, "commonly…an emotional one" (Federal Rule of Evidence 403).

This attitude is at odds with the growing consensus in other disciplines that emotions are deeply intertwined with the reasoning process (e.g. Damasio 1984). Until recently, legal scholars and jurists have taken the attitude that knowledge from other disciplines is irrelevant to law—that the legal system is and should be a self-contained system of thought (Langdell 1871). This attitude has helped perpetuate the legal system's antiquated attitude toward emotion despite all evidence contradicting its accuracy; a state of affairs that is deeply problematic. When legal rules or decisions are based on unsupported or mistaken notions of how people behave, justice may be compromised.

The traditional assumption that those trained in the law should not traffic in emotion has led to large gaps in our knowledge about a whole range of legal actors, including prosecutors, defense, attorneys, and legislators. Although jurors are often studied, these studies rarely focus on their emotions, and even more rarely on their emotions as a collective body. As Terry Maroney discusses in this issue, the emotions of judges receive even less attention, in large part because judges, unlike jurors, are viewed as emotionless practitioners of pure reason. The sharp emotion versus reason dichotomy clouds the issue of how arguments persuade (Bandes and Salerno 2014). The belief that emotion plays no good role in reasoning has also had a powerful, and often pernicious, effect on the education of law students (Bandes 2006a).

Lawyering in general raises a host of other emotional issues. For example, client relationships may raise issues of loyalty, empathy, anger, frustration and sadness. Capital defense attorneys must address their clients' hopes and fears and establish trust under difficult circumstances; they must also deal with their own emotions when a client is sentenced to death or executed (Scheffer 2013). Prosecutors must deal with the emotions of victims and their families and with a community's anger (Bandes 2006b). These are just a few of the emotions evoked by lawyering, and yet law school and the legal profession, for the most part, proceed on the assumption that the tools of the trade are purely cognitive.

The field of Law and Emotion aims to address the disconnect between legal assumptions about emotion and findings in psychology, neuroscience, sociology and other relevant disciplines. I will first describe the emergence and goals of the field, discussing several current approaches to the study of law and emotion. I will then suggest directions for future study.

The Emergence of the Field of Law and Emotion

In the early twentieth century, the Legal Realist movement argued that the legal system's insularity blinded it to the

political, psychological and social influences that help shape legal reasoning and legal institutions (see e.g. Llewellyn 1962). Although it might seem evident that legal theory and legal practice are influenced by social and political forces, this insight was widely resisted until the 1980's. By the late twentieth century, particularly in the wake of the influential Law and Economics movement (which uses economic theory to analyze law and to predict the behaviors governed by law), legal scholars were becoming more accustomed to looking toward other disciplines for insight into the workings of the legal system. In addition, feminist scholars (e.g. Minow 1987), critical race scholars (e.g. Bell 1992) and others were mounting powerful challenges to the idea that legal reasoning is a value-free enterprise. These developments coincided with renewed focus on emotion in fields like psychology, neuroscience, sociology, and philosophy. At this juncture, the study of emotion's role in law at last gained a foothold.

The guiding principle of the field of Law and Emotion is that the law should not rely on untested or inaccurate assumptions about how emotions work, but should make choices, and design institutions, in light of the best available knowledge. In the helpful framework suggested by legal scholars Kathy Abrams and Hila Keren (2010), the project of Law and Emotion scholars is threefold. First, to identify and illuminate the assumptions about emotion that pervade the legal system. Second, to evaluate whether these assumptions are accurate in light of the available knowledge about how emotions work. And third, where legal practice is based on erroneous assumptions, to determine what steps the legal system ought to take in light of the disconnect.

Identifying assumptions about emotion

The legal system is a vast apparatus for predicting, regulating and influencing human behavior. Therefore it is not surprising that legal rules, decisions and institutions rest upon assumptions about how emotions influence human behavior in a wide range of situations. Some of these assumptions are explicit; most are implicit. Some assumptions are borne out by findings in psychology or other fields and some are unsupported by evidence or flat out wrong. This section identifies some of the assumptions about emotion, both implicit and explicit, that pervade the law. The following section discusses the evidence that supports or refutes these assumptions, and also describes a category of normative assumptions that are not susceptible to empirical proof.

Explicit Assumptions about Emotion

At times the legal system makes its assumptions about emotion explicit. For example, a homicide is considered less culpable if it is committed in the heat of passion, instead of after cold calculation (Finkel and Parrott 2006). An excited utterance "made…under the stress or excitement caused by [an] event," (Federal Rules of Evidence 803 (2)) is considered so reliable that it counts as an exception to the hearsay rule, which bars the admission into evidence of a statement made by someone who is unavailable for cross examination in court. A judge may impose a "shaming punishment," such as requiring a man who had bullied handicapped children to carry a sign reading "I am an intolerant bully" (Morrison 2014), or require that a domestic abuser attend "anger management" sessions. A judge may instruct a jury not to permit "sympathy" to influence its decision whether to sentence a convicted murderer to death (California v. Brown 1986). In all these examples, emotions are explicitly invoked. The assumptions underlying this invocation may be explicitly stated as well. For example, judges assume (erroneously, as it turns out; see my discussion below) that shaming punishments will deter offenders from repeating their criminal behavior. The drafters of the Federal Rules of Evidence assumed that the emotional nature of "excited utterances" means they are unreflective and therefore less likely to be deceptive. But even if this is so, excitement and stress are known to distort perception and cloud memory (Lempert et al 2000).

Implicit Assumptions About Emotion

Many of the legal system's assumptions about emotion are implicit rather than explicit. The term "emotional" is frequently used as a code word for "unreasonable" or "unreliable," in reliance on the implicit assumption that emotion is incompatible with reason, despite the fact that this assumption is out of step with the modern consensus in psychology and other fields. The anti-sympathy jury instruction mentioned above provides an example of this use of the category "emotion." "Sympathy" is singled out as "emotional" and therefore harmful to the jury's deliberative process.

But there is substantial evidence that juries in death penalty cases experience other strong emotions, including anger and disgust at the defendant (Deise and Paternoster 2013). Notably, the standard jury instructions make no mention of these emotions, likely because they are regarded as natural responses and therefore "rational" rather than "emotional" (Bandes 2009).

Even sympathy is not always viewed as "emotional" and therefore irrational, provided it is directed at the proper target. In one vivid account of a capital jury deliberation, a juror who expressed sympathy for the defendant was berated for being too emotional. The other jurors told her that she should instead direct her sympathy to the victim and his family (Sundby 2005). Sympathy for the victim was regarded as natural and rational. By dismissing the juror's sympathy for the defendant as emotional, the other members of the jury framed that juror's perspective as illegitimate (Sundby 2005).

In addition to assumptions about what counts as "emotional," legal rules and decisions also rest on assumptions about what emotions defendants, victims, judges, jurors and other legal actors feel, and how these emotions ought to be expressed or displayed. And it is not only those in the courtroom, or those explicitly associated with lawmaking, whose emotions need to be scrutinized; it is also those in the institutions law regulates, such as workplaces, hospitals, schools, and even the home.

So for example, sexual harassment law requires legislatures and courts to determine what constitutes harassment in the workplace, or what makes for a hostile work environment (Fisk 2001). One measure of whether a workplace practice or action is prohibited is whether it is humiliating. But, as I argue below, employment law reflects an innacurate understanding of the dynamics of humiliation, its corrosive effects in the workplace, or the other emotions it engenders, and so it has difficulty determining which sorts of behavior cross the line.

In the criminal law context, the Fourth Amendment to the U.S. Constitution prohibits unreasonable searches and seizures. In determining what is unreasonable, courts often need to evaluate the emotions of either the police officer (or other government agent) conducting the search or seizure, or of the person complaining about it. For example courts may need to assess whether a police officer was in reasonable fear for his safety, and whether the amount of force he used was commensurate with what he feared. Or, as in a recent Supreme Court cases involving the strip search of a thirteen year old female middle school student in the principal's office, courts may focus on the degradation such a student might experience to determine whether the search was so intrusive it outweighed the school's interests in safety and security.

Assumptions about emotion pervade every aspect of law—even less obvious areas such as real estate law. For example legal scholar Brent White pointed out that courts view individuals who default on their mortgages very differently from corporations or government agencies who do so. He argued that when individuals find their homes "underwater" (that is, they owe more than the home is worth), it may be in their best financial interests to walk away rather than make good on their mortgage commitments. Nevertheless, courts treat the individual homeowner's decision to default as one that should elicit shame. At the same time, he argued, courts tend to treat governmental or corporate decisions to default on massive housing projects as purely economic decisions—and therefore no cause for shame (White 2010).

And in the medical realm, the Supreme Court in Gonzales v. Carhart (2007) upheld a rule against late term abortions based on several assumptions about what a woman obtaining such an abortion will—or ought to– feel. Justice Kennedy wrote for the majority that "respect for human life finds an ultimate expression in the bond of love the mother has for her child." And so although he admitted there was no reliable data supporting his assumption, it seemed to him "unexeceptionable to conclude" that some women will feel regret about their decision, and that severe depression and loss of esteem might follow.

Many such assumptions are taken to be so commonsensical that they don't need to be mentioned, much less defended. For example, judges and jurors widely believe that defendants ought to feel remorse, and that this remorse will be outwardly visible. When a defendant does not look appropriately remorseful, his sentence is likely to be harsher.

In a capital case, perceived lack of remorse is one of the main factors leading juries to sentence a defendant to death (Haney, Sontag & Constanzo 2010).

In jury deliberations, jurors may gain or lose credibility with the group depending on the emotions expressed. As one study found, the rules for emotional expression may be gendered. An angry male juror is regarded as persuasive; an angry female juror as shrill, emotional and therefore unpersuasive (Salerno and Peter-Hagene 2015).

Rape law is a fertile area for the study of implicit emotion norms. Legal actors often have firm beliefs about what a "true" rape victim will feel and how she will express those feelings. For example, investigators often believe a rape victim ought to act hysterical rather than calm shortly after the crime. See, for example, the harrowing account of a rape victim whose account was disbelieved and who was charged with perjury for reporting the rape, based largely on her flat affect (Miller and Armstrong 2015). Once rape victims appear in the courtroom, however, one troubling study found that judges in Minnesota adjudged these victims most credible when they expressed compassion or forgiveness for their assailant, rather than anger (Schuster and Propen 2011).

Evaluating assumptions about emotion

I have considered a number of explicit and implicit assumptions about emotions and their role in the legal system in the previous section. It is important to emphasize that not every use of emotion in law is based on unsupported assumptions. For example, there is a growing body of research showing that apologies by doctors decrease the likelihood they will be sued for malpractice (Korobkin and Guthrie 1994). In light of these findings, a number of jurisdictions have sought to encourage apologies, and presumably to encourage better doctor-patient relations, by passing statutes establishing that a doctor's apology, which could be construed as an admission of error, cannot be used as evidence of doctor error in a malpractice suit.

Nevertheless, many "commonsense" beliefs about emotion are contradicted by findings in the sciences and social sciences, or at least require further study (Maroney 2009). Law and emotion scholars aim to subject these beliefs to scrutiny, identifying misconceptions and gaps in understanding. Once the legal system's beliefs about emotion are evaluated in light of knowledge from fields like psychology, many of them turn out to be innacurate. In addition, some assumptions are not empirical in nature at all: they rest on normative views about how people ought to act. These assumptions, too, must be debated and evaluated, but they cannot be definitely proved or disproved.

Empirical Assumptions

Let us turn first to some explicit empirical assumptions. As mentioned earlier, courts sometimes impose "shaming penalties" because they believe those penalties will deter offenders from repeating their criminal behavior. The psychological literature shows this assumption to be false: rather than reforming offenders, shaming punishments often have the opposite effect– stigmatizing offenders in ways that discourage them from improving their behavior and instead make them feel worthless and hopeless (Massaro 2000).

I have also discussed how laws governing the workplace prohibit certain types of behavior, such as sexual harassment or creating a hostile environment, in part on the grounds that these behaviors are humiliating. Catherine Fisk (2001) argues that courts have no firm grasp on the concept of humiliation. She draws on psychological literature that views humiliation as an interpersonal emotion involving at least a triad: a humiliator, a victim, and a witness whose good opinion matters to the victim. The victim may experience a range of emotions, including shame, embarrassment, rage and despression. She argues that courts too often underestimate the harms humiliation inflicts upon the victims, do not understand the toxic effects of humiliation on the workplace culture as a whole, unrealistically demand evidence that the humiliating behavior had physically measurable effects on the victim, and do not understand the range of emotions an episode or a culture of humiliation might evoke. In her view, this inaccurate understanding of humiliation protects behaviors that ought to violate laws against workplace harassment.

Carhart v. Gonzales, the late-term abortion case, stands as one of the clearest examples of decision-making based on assumptions that are not only unsupported, but contradicted by the available evidence. In that case, the Court's

decision turned largely on its assumption about the prevalence of post-abortion regret. Chris Guthrie was one of several scholars who argued that the Court misunderstood the dynamics of regret and ignored the available evidence that most women who choose abortion manage their feelings of regret and use them in constructive ways. Their primary feelings are positive emotions like relief (Guthrie 2007-2008).

The empirical assumptions that go unstated are particularly hard to evaluate. We all have expectations, some of them culturally specific and some of them more widely shared, about what emotions should be expressed in various circumstances (happiness at a wedding, joy at a pregnancy, sadness at a funeral). Such subconscious scripts also permeate the courtroom, and many of them are quite harmful.

Consider the assumptions discussed above about the feelings that "real" victims of rape are expected to express. These widespread assumptions often lead investigators to disbelieve claims of rape unless the victim appears highly emotional. Yet rape victims react in a variety of ways; there is no one response that marks a "true" rape victim. For example shock, denial and other common responses may lead rape victims to display outwardly unemotional affects (McKimmie, Masser and Bongiorno 2014).

Consider also the assumption that criminal defendants' remorse is easily detectable. Capital jurors are not generally instructed about remorse, but they implicitly assume it is important and also that they can evaluate remorse simply by watching a defendant's facial expression and body language in the courtroom. Defendants who don't look sufficiently remorseful are likely to be sentenced to death. It is worth noting that since jury deliberations occur in secret and U.S. juries are not required to explain their verdicts, the powerful effect of perceived remorse on juries could have gone undiscovered without the work of the Capital Jury Project, which conducted extensive post-sentence interviews with capital jurors.

Now that the role of perceived remorse has been documented, the U.S. criminal justice system faces a pressing problem: there has been scant investigation of whether remorse can in fact be reliably identified. Or to put the point more directly: there is no evidence that remorse can be identified via facial expression and body language, and a disturbing amount of evidence that evaluations of remorse are distorted by factors like the youth of the defendant (Duncan 2002), the race of both the defendant and the judge or juror (Bowers, Steiner and Sandys 2001); and the mental disability of the defendant (Stobbs & Kebell 2003). Another implicit assumption about remorse that drives both juries and judges is that a remorseful offender is unlikely to offend again (see e.g. U.S. v. Beserra 1992). This too is an empirical assumption with little evidence to support it (Proeve and Tudor 2010: 90). Here is a rich set of research questions, and until these issues are explored, defendants will continue to be sentenced to death and long prison terms based on unexamined assumptions about remorse.

The case I introduced earlier about the strip search of the middle school student demonstrates that at times the legal system can examine and correct its own assumptions—at least if it is open to a multiplicity of viewpoints. At the oral argument in the case, it became clear that many of the judges did not understand how degrading such a search would be to a thirteen year old girl. They assumed it would be similar to the experience—with which they were quite familiar– of male student athletes suiting up in a school locker room. Justice Ginsburg, the sole female member of the Court at the time, emphasized to them the degradation and embarrassment such a search would cause, and "friend of the court" briefs from psychologists, psychiatrists and social workers supported her view. The ultimate decision in the case reflects that the Court came to view the strip search as unduly intrusive and degrading. (Safford v. Redding 2009).

Normative Assumptions

The examples above focus on assumptions about how particular emotions work, or what emotions people display in particular situations. These are empirical questions that can be investigated by psychologists, criminologists, and others who study human behavior. But not all evaluations of emotion's role in law are empirically grounded. Some have normative dimensions that may be illuminated by philosophy. Note, however, that the line between the normative and the empirical (or between what courts assume people feel and what courts assume people "ought to"

feel) is not always clearly delineated. For example, jurors believe that criminal defendants who feel remorse are less culpable. In part this is an unsupported emprirical assumption that such defendants are less dangerous, more empathetic, or less likely to repeat their bad conduct. In part it is a deeply held belief about what people ought to feel after they've caused grievous harm.

Attitudes about the meaning of "love" also highlight the intertwining of the empirical and the normative. In Carhart v. Gonzales, the abortion case discussed above, the Court used the emotion of "love" in a troubling way. Although it was a case involving women who sought abortions, Justice Kennedy began with the assumption that the natural feeling between a mother and her child is love—thus portraying the plaintiff's desire to abort as against nature. To Justice Kennedy, this may have seemed an accurate description about what pregnant women feel, but it also happens to track what he believes pregnant women ought to feel. Notions of romantic love raise similar issues. As Cheshire Calhoun (2000) wrote, many of the opponents of same sex marriage simply could not conceive of the bond between two same sex partners as a bond of romantic love, because to them romantic love and intimacy were possible only for a man and a woman, and only for those who could engender biological offspring.

Some questions about what role emotions should play in the law are normative. For example, as Sam Pillsbury discusses in this issue, the criminal justice system's reliance on remorse raises the normative question of whether remorse should be part of the punishment calculus at all. This is a question that philosophy can illuminate (see e.g. Murphy 2007), though it is ultimately for the legal system to decide. In a similar vein, the criminal law treats some homicides as more culpable than others. As mentioned earlier, a homicide committed in the heat of passion is considered less serious than a calculated homicide accompanied by no discernible emotion at all. Psychology can inform us about the emotional states that accompany homicides; it cannot determine whether passion or cool calculation should be more serious in the eyes of the law.

One of the early, influential philosophical debates about law and emotion centered on the role of disgust in the law. Legal philosopher Martha Nussbaum (2000) argued that disgust ought to play no role in law (she makes the same case for shame, and, in her most recent work, for most forms of anger as well). To simplify, her view is that disgust misconstrues its objects as animal reminders, revealing a "way of hiding from our humanity that is both irrational in the normative sense, embodying a wish to be a type of creature one is not, and unreliable in the practical sense, frequently bound up with narcissism and an unwillingness to recognize the rights and needs of others" (15). As a result, disgust can lead to discrimination against women and other marginalized groups based on bodily aversions. Dan Kahan (2000) responded that disgust has a useful moral dimension—it helps us identify conduct that the law ought to condemn.

Reforming Law in Light of Improved Knowledge of Emotion and Emotional Dynamics

It is important to emphasize that even when law rests on demonstrably wrong assumptions, it does not necessarily follow that the law must change. Whether reform is necessary is ultimately a legal question. For example, courts recognize an "insanity defense" to murder, but have struggled to align the defense with rapidly shifting knowledge of mental illness (see the article by Aharoni and Vincent in this issue). As a practical matter, legal standards –"insanity," for example–must be crafted with an eye toward values like equal treatment, predictability and fairness, and these values sometimes conflict with the goal of case-by-case psychological accuracy. And as a normative matter, the question of what counts as a mental illness that makes an accused murderer less culpable (or excused from criminal liability entirely) is ultimately a legal question, not a psychological one.

Nevertheless, the disconnect between folk knowledge and actual knowledge about emotions often matters greatly, and when it does, a variety of corrective actions may be possible. Shaming punishments are a case in point. Since they were adopted in order to encourage criminal offenders to stop breaking the law, and since available evidence shows that they don't serve this purpose, shaming punishments are indefensible and ought to be discontinued.

In other cases, corrective actions are less straightforward. Consider the remorse example once again. Juries are sentencing men and women to death based in part on their misguided faith in their own ability to read remorse from

facial expression and body language. The solution in this case is a bit more complicated. The problem with remorse is part of a larger problem with courtroom decision-making. The U.S. legal system, like many legal systems, places great stock in what is called "demeanor" evidence. It is an article of faith that there is much to be learned about a person's trustworthiness and credibility by observing his outward demeanor. This assumption is highly questionable (Wellborn 1991), but it persists. And as long as juries are encouraged to observe the demeanor of the accused, they will tend to look for evidence of remorse, and judge harshly when their expectations go unmet. Some possible solutions to this problem include having judges instruct juries not to take remorse into account, or providing expert witnesses to testify to the problems with evaluating remorse generally and in specific situations (such as cases involving juveniles). Whether expert testimony and jury instructions are effective in guiding juries is yet another important research topic.

One barrier to understanding emotion, as Arlie Hochschild pointed out long ago (Hochschild 1983), is the misconception that emotions are private and internal. Studies of the emotions of individuals in labs have yielded many important insights, but they cannot capture the complex dynamics of emotions unfolding in real-life contexts. Mock jury studies that focus on individual jurors cannot capture the interplay of emotions during jury deliberations. For example, studies about how individual jurors evaluate a defendant's remorse need to be supplemented by studies about what happens in the jury room. Jury deliberation will likely affect the emotions of the individual jurors as they consider the case, their evaluations of one another's credibility, the emotional climate of the jury room, and their collective assessments of the defendant's remorse.

There are promising new studies focusing on the collective dynamics of the jury room, such as work by psychologist Sam Sommers on how the racial composition of the jury affects deliberation (Sommers 2006). There is some work on how the collective setting affects juror emotions, such as the study of angry jurors and gender discussed above. More such work is needed, focused not only on the jury room, but on the courtroom and the myriad other institutions that make up the legal system (such as prosecutors' offices, law school classrooms, panels of judges), and that are regulated by the legal system (such as police departments, schools, hospitals, the workplace). Sociologists (see e.g. Turner and Stets) and criminologists (see e.g. Karstedt et al) are increasingly focusing on the role of emotions in group and institutional settings, and this focus ought to be more fully incorporated into Law and Emotion studies as well.

Legal institutions can be improved in light of current knowledge of emotional dynamics. Here is another example. There is a disturbing pattern of prosecutors refusing to revisit wrongful convictions, even of those on death row. The emotional dynamics of the office help explain this phenomenon. Prosecutors feel loyalty to victims and their families, and gain satisfaction from helping victims. They may feel reluctant to deliver distressing news or to reopen old wounds. Moreover, prosecutors who question convictions may be perceived as disloyal to their colleagues and their office, and may be shunned. The emotional impact of shunning—or of belonging—can be a powerful incentive (Bandes 2006b). To avoid these painful outcomes (and the very real chance that they will not be re-elected if they are perceived as 'soft on crime'), they may be willing to overlook injustice in order to gain approval and stature. Efforts to reform the institutional culture or organization of the prosecutors' office ought to take these emotional dynamics into account when determining how to encourage prosecutors to keep an open mind and do the right thing without losing the satisfactions and rewards of their job.

Conclusion

The focus of the essay thus far has been on the emotions that influence legal decision-making and that shape legal institutions. Just as important, the legal system and legal rules can shape or guide emotions and emotion norms (Bandes and Blumenthal 2012). The interplay among public opinion, social norms, and the development of law is complex and bi-directional. Consider the example of same-sex marriage discussed earlier. Three decades ago the Supreme Court upheld laws criminalizing sex acts between same sex partners (which it called "homosexual sodomy") (Bowers v. Hardwick). This decision evoked outrage which led to a powerful political movement (Gould 2001). 17 years later the decision was overruled (Lawrence v. Texas) and in 2015, the Court held that there is a con-

stitutionally protected right to same-sex marriage (Obergefell v. Hodges). The Court's evolution in this area of law was influenced by rapidly changing public opinion, and public opinion was certainly galvanized by the Court's decision in Lawrence. This is an example of the complex interplay of social norms and Court's decisions.

To take another example, law helps shape norms about appropriate punishment. It can encourage, discourage or channel the emotions that underly the urge to punish (Darley 2009). Or, as in the example about mortgage defaults above, it adopts and communicates norms by framing acts as not merely illegal but shameful. More generally, legal decisions, rules and institutions can help shape norms about empathy, tolerance and other values. Debates about how to structure legal institutions must focus on what goals those institutions ought to achieve. They must also be informed by accurate knowledge about human behavior and human emotion, by a realistic appraisal of how much there is still to learn, and by a determination to fill in those gaps in knowledge.

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Emotion in the Behavior and Decision Making of Jurors and Judges

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October 2016 – What we in colloquial language refer to as "the legal system" is far from a unified entity. Rather, it is comprised of many individual actors: legislators, police, border control agents, prosecutors, clerks, attorneys of many sorts, regulators, court-affiliated treatment providers, experts, compliance inspectors, prison administrators, and so on. Each of these individual actors is embedded in a particular structural context—a family court, say, or a public benefits fair-hearings office—with its own zone of competence and power. Despite the oft-invoked rhetoric insisting on law's dispassion, it should be no surprise that the legal system is deeply influenced by the emotions of its many human participants (Feigenson, 2015), and that each participant's structural position within the legal system affects both emotional experience and its expression (Bergman Blix & Wettergren, 2015).
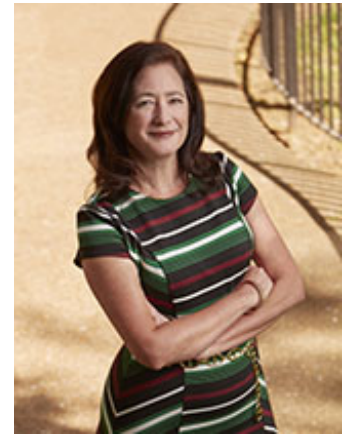
As others in this issue have noted, the empirical research base on emotional experience and expression within the legal system is relatively thin. It also is uneven. By far the greatest share of such research has focused on jurors (or, more often, mock jurors); a far smaller share focuses on judges; and the many other system participants are largely ignored.

In this article I synopsize the major lessons to date from research not only on the influence of emotion on jurors, but also on the equally important and neglected influence of emotion on judges. An important distinction between the two should be noted at the outset. In traditional legal narratives, the assumption is that jurors are, if left to their own devices, likely to experience emotion and allow it to influence their decisions; the task of the system is therefore thought to be to dampen jurors' emotional experience and neuter its influence. In contrast, judges are thought to be uniquely capable of going about their business without emotional influences. Indeed, the capacity for emotionlessness long has been thought to be a marker of competent judging (Hobbes, 1651). These theoretical assumptions affect the empirical questions that researchers tend to pursue.

Jurors' emotions

The fundamental questions animating empirical research on jurors are nicely summarized by Neal Feigenson, who asks: "Which emotions, elicited by which sources, under what conditions, affect what kinds of decisions, to what extent, mediated by what other kinds of thoughts or feelings (Feigenson, 2010, p.45)?"

As distilled in a recent review (Feigenson, 2015), juror emotion appears to affect information processing; judgments of responsibility and blame; and severity of imposed punishment. These effects generally are observed both when the juror's emotion is *integral* to the case—that is, prompted by case-relevant information, such as gruesome testimony about a victim's injuries—or *incidental* to the case—that is, prompted by information extrinsic to the juror's judgment task, such as anger at a fellow juror for rude behavior, anxiety over being pulled away from work and home obligations, or disgust with unsanitary courtroom conditions (Feigenson, 2010, p.52).

First, jurors (or, far more commonly, laypersons assigned a juror-like task in an experimental setting) display informational processing effects that are consistent with the effects demonstrated in non-legal experimental settings. As would be predicted by the literature on appraisal tendencies, mock jurors process evidence in a manner consistent

with the underlying appraisal structure of their emotional states. Those emotional states therefore have an effect, of which jurors are unlikely to be conscious, on how evidence is evaluated, and on how jurors reach crucial decisions on vital issues such as witness credibility, criminal culpability, and civil liability.

For example, mock jurors who are primed with emotions associated with certainty—such as anger—approach juror decision making tasks with greater certainty. They analyze information less systematically, are more inclined to rely on heuristic cues, and take into account fewer factors when reaching decisions (Tiedens and Linton, 2001; Lerner, Goldberg, & Tetlock, 1998). In contrast, mock jurors primed with sadness approach those same tasks with a more cautious and skeptical eye. They appear to analyze information more carefully and are better able than neutral controls to identify testimonial inconsistencies (Semmler & Brewer, 2002).

Second, jurors' emotions appear to affect not just their information processing style but also the content of their decisions. This impact has been shown as to both attributions of blame and severity of recommended punishment. Two mechanisms for this impact have been proposed. An *emotion-congruency* mechanism might explain why jurors who are angry tend to blame more, as the cognitive structure of that emotion makes more salient aspects of a case that cohere with that structure, such as attributions of responsibility and the causation of unwarranted harm (Feigenson, 2015; see also Lerner et al., 1998; Ask & Pina, 2011). Both sympathy for victims of wrongdoing and anger at perceived wrongdoers can increase judgments of responsibility and blame, and can mediate legal determinations as to the relative share of fault in comparative negligence cases (Feigenson, 2010, at p.50). Similar effects have been found in a criminal scenario, in which increases in mock jurors' anger were associated with increases in willingness to vote for the death penalty (Georges, Wiener, & Keller, 2013).

The *affect-as-information* mechanism might explain similar effects, at least as to integral emotions (Feigenson, 2015). Jurors might regard case-relevant emotions as a direct information cue bearing on judgment. Research suggests that integral emotion functions as a *mediator* in mock criminal and civil cases, affecting judgments of a tortfeasor's blameworthiness for causing severe injuries to an accident victim (Bornstein, 1998) as well as judgments of criminal defendants' blameworthiness and deserved punishment (Laurent, Clark, Walker, & Wiseman, 2014; Paternoster & Deise, 2011; Wevodau, Cramer, Kehn, & Clark, 2014). Highly triggering visual stimuli such as gruesome crime scene photographs might also exert a direct effect on jurors' judgments of blameworthiness and deserved punishment (Bright & Goodman-Delahunty, 2006).

The extant research base thus tends strongly to confirm the common-sense notion that jurors experience emotion when hearing evidence and reaching judgments, and that those emotions have a potentially powerful and often unacknowledged influence. Perhaps counterintuitively, this may be true even when jurors are made aware that the primed emotion is entirely irrelevant to the task before them; in other words, even when jurors are fully informed that the emotion and its trigger have nothing to do with the case, the emotion continues to exert an influence (Loewenstein & Lerner, 2003).

However, extant studies bear an imperfect relationship to the real world of jury service. Because direct observation of actual jurors is difficult and variables not easily isolated for manipulation, researchers working with mock jurors must develop theories for how experimental results might reflect real-world impacts. A preliminary meta-analysis of experimental work suggests that emotion effects on juror judgments of legal responsibility are likely to be in the modest to moderate range (Park & Feigenson, 2015).

Even these relatively low-level estimates might, on the one hand, *overstate* emotions' impact (Feigenson, 2015). Real jurors are over the course of a case exposed to a wide variety of emotionally salient stimuli, sometimes contrasting ones—for example, a highly sympathetic defendant, gruesome evidence, an annoying expert, and an unsympathetic complaining witness. Some of the emotionally salient stimuli will be intrinsic, others extrinsic. Stimuli of both sorts will present at various moments in time, in no particular order. Jurors also are exposed to a wide range of relevant stimuli with very low emotional salience—for example, the precise layout of a particular intersection in which an accident occurred and witnesses' lines of sight thereof. Their attention therefore is not likely to be as consistently focused on the emotionally salient subset of stimuli as a mock juror's is likely to be. Jurors deliberate in a group, and

emotionally infused group dynamics invariably have an impact of their own. Real jurors appear to take seriously their obligations to consider the evidence fairly and carefully, and are instructed to set their emotions aside when doing so (though we have little idea what they think that instruction means or how they try to comply with it). They also know they will be at least somewhat accountable for their decisions and likely are conscious of the real-world stakes (Feigenson, 2015)

On the other hand, modest-to-moderate range estimates might significantly *understate* the influence of juror emotion (Feigenson, 2015). The difference between emotions evoked in a laboratory and those evoked in a real case—-particularly one involving highly traumatic facts and severely injured persons—cannot be gainsaid (Feigenson, 2015; Shuman et al., 1994; Wiener, Krauss, & Lieberman, 2011). Finally, emotions and judgments likely reinforce one another through a recursive feedback loop, further complicating the picture. For example, a juror who determines that a civil defendant is responsible for a harm may then feel angry at that defendant; her anger may influence how she processes evidence about the extent of the victim's damages; a finding of greater damages may create more anger; and so on (Feigenson, 2010, at p.52). The process of deciding is influenced by emotion but also likely generates emotions of its own, which then may exert further influence.

In short, juror emotion is a highly complex phenomenon. Extant studies helpfully illustrate some aspects of that complexity, strongly suggesting that emotion influences both jurors' decision-making processes and the outcomes of those processes, such as judgments of blame and assessments of relative blameworthiness. These findings are consistent with the weight of evidence about emotion's processing and decisional effects in non-juror settings.

Further research is needed, however, to explore the contours of juror emotion, particularly in field settings. Mock juror studies have many advantages, not least among them their relative ease of construction and implementation. Jurors, like experimental subjects, are laypersons who are presented with a constrained universe of stimuli and asked to make discrete decisions. The parallels between the world inside the laboratory and the one outside it, though, are not as elegant as we might hope. Ease of experimentation might serve the needs of the research community far more than it does those of the legal community (Maroney,2012b). In the coming years, one hopes, controlled laboratory experimentation on juror emotion will be seen primarily as a source for robust hypotheses to be tested in complex field settings rather than an end unto itself.

Judges' emotions

If we seek thoroughly to understand emotions' influence on the legal system, it is vital that we widen our research lens far beyond jurors, even real-world jurors. The simple reality is that a vanishingly small share of legal disputes involves jurors at all. About 98% of civil cases and 95% of criminal cases are disposed of without trial, let alone a jury trial. Cases that never involve a single juror do involve a wide range of other legal actors, particularly lawyers and—apropos of the present discussion—judges.

It long has been true that "dispassion" is regarded as a core judicial virtue. Thomas Hobbes declared in *Leviathan* that the ideal judge is "divested of all fear, anger, hatred, love, and compassion (Hobbes, 161, p.203)". This view has proved itself remarkably sticky even in modern times. In this traditional narrative, emotion is a mysterious, subjective, and unruly force that ought not influence a decision-making process that is meant to be transparent, objective, and guided by public concerns (Maroney & Ackerman-Lieberman, 2014). The script of dispassion complicates the study of judicial emotion, as the stigma it creates for those judges who do admit to experiencing emotion discourages transparency (Posner, 2006, p.1065).

Notwithstanding this difficulty, the theoretical literature on judges' emotions is small but growing (Maroney, 2011a & 2011b; Maroney, 2012), and the same is true of the empirical literature. With all the caveats attending a new area of inquiry, the extant research strongly suggests that judges, too, experience emotion in the course of their work and that such emotion influences their behavior and decision-making. We are just beginning to understand with greater precision how emotions affect judges, and to develop theories for distinguishing legitimate influences from illegitimate ones.

Evidence of judicial emotion and its impact comes, first, from a small group of qualitative studies. Surveyed Australian judges reported a range of emotions, disproportionately negative ones (Anleu & Mack, 2005; see also Mack & Anleu, 2010, Anleu & Mack, 2013). One described judicial work as "seeing absolute misery passing in front of you day in, day out, month in, month out, year in, year out (Anleu & Mack, 2005, p. 611)". Researchers in Sweden are uncovering evidence of judicial emotion even in a culture with muted display norms, with direct observation and self-report showing experiences ranging from anger at litigants (for example, for the harms they have caused) to shame at falling short of professional expectations (for example, by failing to provide a required instruction at the appropriate time) (Bergman Blix & Wettergren, 2015). State-court judges in Minnesota, responding to questions about victim impact statements delivered at criminal sentencing, reported emotions including frustration, anger, and compassion (Schuster & Propen, 2010). One described feeling that he was going to cry after hearing a mother describe a moment in which she thought her son was going to die, and then regaining "what he thought was necessary composure because 'you are not supposed to cry on the bench when you are a judge' (Schuster & Propen, 2010, p. 89)."

As the last example suggests, judges' professional norms require them to engage in significant efforts to control their emotional expressions. This emotional labor (Hochschild, 1983) is difficult, particularly as it operates in tandem with the labor they must expend responding to and attempting to control the emotional experience and expression of others in their ambit, such as witnesses, jurors, spectators, and lawyers (Maroney, 2011b). Further research is required to understand in detail how judges perform this emotional labor; the psychological literature on emotion regulation yields a number of promising hypotheses as to the regulatory strategies likely to be most and least adaptive in the judging domain (Maroney & Gross, 2014).

An even smaller group of quantitatively oriented studies sheds some further light on judicial emotion. A research trio known primarily for showing the extent to which judges are affected by ordinary cognitive heuristics and biases recently published a study implicating the affect heuristic, understood as a rapid, felt sense of *goodness/liking* or *badness/disliking* that drives choices we then rationalize (Wistrich, Rachlinski, & Guthrie, 2015; Maroney, 2015). In a series of experiments involving real judges presented with hypothetical situations, they manipulate a variable with emotional elements—for example, whether a person accused of entering the country without legal permission to do so is a father trying to save his desperately ill child's life, or a hired assassin for a drug cartel—and that bears no relationship to the decision-making task—for example, determining whether a particular manner of altering a passport is proscribed by a specific statute. The feelings of *like* or *dislike* prompted by the independent variable have a statistically significant effect on the judges' resolution of purely legal questions—precisely the sort of questions to which emotion ought to be least relevant.

Another recent study examined real judges' decisions in actual cases implicating gender equity, such as employment discrimination claims (Glynn & Sen, 2015). Male judges, particularly politically conservative ones, tend to rule differently in such cases when they have daughters. The authors propose, quite plausibly, that the differential can be attributed to these fathers' love for their daughters. That love, they propose, motivates and facilitates male judges' learning about the realities of women's lives, which then pushes their jurisprudential views in a particular direction. These results suggest more generally that a highly personal, emotionally rooted empathic connection with dissimilar groups—disabled persons, for example—might affect judges' decisions (Glynn & Sen, 2015).

Finally, both the qualitative and quantitative literature cohere narratively with judges' occasional emotional self-reports. Because stigma remains high, such reports are sporadic (particularly among judges serving actively in states in which they must seek re-election, rather than those who enjoy life tenure). Though it is difficult to extrapolate from a small cluster of voices to the larger population, that cluster tends to express similar themes. The late US Supreme Court Justice William J. Brennan, Jr. proclaimed that judges must embrace "passion,"which he described as "the range of emotional and intuitive responses to a given set of facts or arguments, responses which often speed into our consciousness far ahead of the lumbering syllogisms of reason"; only this passion, Brennan insisted, would anchor judicial rulings to human realities, preventing the law from becoming sterile and bureaucratic (Brennan, 1988, p.9). With this theory Brennan picked up a theme earlier articulated by the late US Supreme Court

Justice Benjamin Cardozo (Cardozo, 1921), one that has been further echoed by prominent contemporary judges (Posner, 2001, 2008; Calabresi, 1993). Judges have spoken about the high emotionality of criminal sentencing, describing the weighty burden of having to pass judgment on a person's fate, the sadness they feel about the harms victims have suffered, the anger they may feel at the person who caused them, and the simultaneous sorrow they may feel for those persons and their families (Chin, 2012; Bennett, 2011). Judges also have spoken eloquently of the role of mercy in their judgments (Kennedy, 2003). The importance of an emotional connection with and commitment to law's subjects is a frequent theme; for example, the late US District Judge Edward Devitt wrote that "[i]f we judges could possess but one attribute, it should be a kind and understanding heart" (Devitt, 1979, p. 1175).

It is not a stretch to say that judges are given seemingly irreconcilable commands, namely both to be dispassionate and to maintain an open and caring heart. Navigating those competing commands is itself a significant challenge. An Australian magistrate judge vividly described that challenge: "Now, there's two things that can happen to you. Either you're going to remain a decent person and become terribly upset by it all because … your feelings are being pricked by all of this constantly or you're going to … grow a skin on you as thick as a rhino, in which case I believe you're going to become an inadequate judicial officer because once you lose … the feeling for humanity … I don't believe you can do the job" (Anleu & Mack, 2005, p.612).

A retired Canadian trial judge provided another vivid account of emotional challenge and labor in a recent memoir. Among other things, she recounted an incident in which she kept her demeanor "as professional and calm as ever," despite being "angry at having seen yet another trial where there was no evidence beyond the testimony of the child" who complained of being sexually abused, and in which she acquitted the defendant; in such situations, "though I might squirm internally or feel angry or sympathetic, there was little I could do legally" (Corbett, 2016, pp. 26, 31). Being hemmed in by legal constraints, as this judge describes, might lead to frustration; it also leaves a normal emotional response with little room to be expressed. This judge also recalled the physical imprint of her emotional labor. "The judge's back bears the daily grind of justice," she wrote, her required "rigidity of posture … exacerbated by the stress of continually making decisions, large and small, in an arena of confrontation and while under public and professional scrutiny" (Corbett, 2016, p.70). Further, because she frequently had to literally bite her lip to keep others from seeing her laugh or smirk, a "tiny red bruise on my lower lip had become a permanent feature" (Corbett, 2016, p. 130). As this account suggests, a judge's emotional labor is difficult and it takes a toll, all the more so because of the absence of acceptable outlets for expression.

To sum up, judges' emotions are, just like those of jurors, a highly complex phenomenon. They are, however, far less frequently studied, even though—given the decline of jury trials—they are much more important in the ordinary course of affairs. At this early stage of inquiry we can say with certainty that judges experience a wide range of emotions in connection with their work; that coping with these emotions is difficult, particularly given the confusing and conflicting norms with which they are expected to comply; and that these emotions and judges' efforts to regulate them certainly have some impact on their decisional processes and outcomes. We have yet to assemble reliable data as to the precise nature of that impact.

Conclusion

Judges and jurors present unique opportunities for the emotion researcher. Not only is the field relatively open but the answers that a robust research program might yield are vitally important. Is it possible to tease out the influence of case-relevant (i.e., intrinsic) and case-irrelevant (i.e., extrinsic) emotion on actual juror decision making? Are there juror instructions that could help jurors to use their emotions in legitimate ways but not in illegitimate ones? Might lawyers and judges be able to counteract predictable information-processing effects of certain highly likely evidence-triggered emotions? Can judges improve their skills at emotion regulation, and might such improvements improve either their subjective experience of judging, the quality of their decisional processes and outputs, or both? These are of course very broad questions, but a serious research program to address them would be a service both to science and to the law.

In this growing field there is ample room for all approaches, wherever they hit along the qualitative to quantitative

spectrum, and for all disciplinary orientations, ranging from the sociological to the psychological and even neuroscientific. The people who populate the legal system inevitably are affected by the full panoply of human emotion. Efforts to ignore or suppress this reality are doomed to failure; efforts to understand and shape it can meaningfully advance justice.

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Emotion and Criminal Punishment: In Principle and in Practice

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October 2016 – How *should* emotion inform punishment decisions in modern criminal justice? How does emotion, *in fact*, affect decisions about and perceptions of just punishment in the contemporary criminal process? How might current courtroom practices in America that give legal protection to emotional expressions by both defendants and victims suggest a *different view of justice* than that provided by classical theories of retribution and deterrence?

These are the questions I pursue here.

I begin with the main classical theories of punishment: retribution and deterrence. After laying out their essential precepts, I consider how they treat sentencer emotion. Both theories envision the determination of punishment as an entirely reasoned process, without regard to sentencer feelings. Then I turn to the actual practice of punishment and explore the real life significance of emotions on sentencer decisions. Unsurprisingly, sentencers are often affected by their emotional responses to offenses and offenders. Because emotional responses may or may not prove congruent with punishment principles, we must make an effort to moralize their influence.
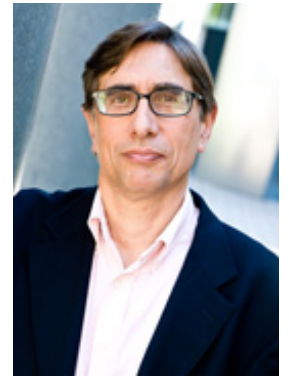
In the last section I take up legally sanctioned expressions of emotion by both defendants and victims at sentencing. What is the purpose of these emotive practices, which at least on the victim side are relatively new to the American legal scene? Answering this question reveals how current practices relating to emotional expressions at time of sentencing have outrun traditional punishment theory. I will argue for a concept of justice that goes beyond judgments on individual offenses and offenders to encompass relations between persons affected by crime. I will argue that contemporary expressive practices are better justified under a restorative justice approach than by either retribution or deterrence.

Emotion and Principles of Punishment: Retribution and Deterrence

Punishment, as I use the term here, refers to negative sanctions imposed for a criminal conviction. In the United States these sanctions range from community service requirements, fines or probation, to lengthy prison terms or capital punishment. Concern with emotions relating to punishment normally centers on the feeling-responses of the sentencer to the wrong of the offense and the character of the offender. Later I will look at the significance of emotional expressions by victims and defendants.

The Western concept of just punishment has for centuries centered on the principles of *retribution* and *deterrence*. These were classically set out in the eighteenth century by philosophers Immanuel Kant (1999) (retribution) and Jeremy Bentham (1968) (deterrence). As Kant originally posited, and modern theorists like Michael Moore (1987) hold, punishment for wrongdoing is just if it is deserved according to the nature of the wrong done. Under the *principle of retribution* there should be a fundamental moral connection between crime and punishment. The worse the offender's choice to do wrong, the worse the punishment; conviction and sentence should reflect the offender's individual culpability. Under a strict retributive approach, the consequences of punishment for both the individual punished and society are irrelevant to justice. Thus whether the punishment might dissuade the offender, or others, from committing future offenses, does not matter in determining what punishment is deserved.

The retributive sentencer uses first principles of right and wrong conduct (what is right and wrong in and of itself) to assess the nature and severity of the defendant's offense. The severity of the harm done and the nature of the offen-

der's choice to inflict that harm are evaluated together. Murder is punished more than burglary, rape more than theft because in each of these pairings the first-listed offense involves a greater harm (the taking of life, disregard for sexual autonomy) than the second (disregard for autonomy in residence and property rights). Connected to assessment of harm is assessment of the defendant's choice to act as he or she did.

Choices to offend can be assessed according to the defendant's purpose in acting – whether the person had the conscious aim of doing harm, for example, or the extent of the defendant's awareness of legally critical facts. In an assault case, an attack made with the purpose to inflict great bodily injury will be judged a more culpable act than if the attacker did not intend to inflict severe injury, but was aware of a significant and unjustified risk that significant physical harm might occur. In homicide, assessments of culpability can include emotion states and motives, as in the distinction between a premeditated murder, in which the defendant made a carefully calculated decision to kill, and a heat of passion killing (normally classified as voluntary manslaughter) which involves a more spontaneous, highly emotional choice to kill, under circumstances where a reasonable person might also be strongly tempted to serious violence. Retribution explains all of these distinctions on the ground that the more the actor consciously chose to do harm, the more culpable his or her conduct, and therefore the more deserving the actor is of punishment.

It is important to distinguish here between retribution as the word is used in law and moral philosophy from the way it is often used in ordinary conversation. In casual discourse the words retributive or retribution often signify a person's desire for payback against a wrongdoer and the infliction of harsh punishment. They suggest an angry punisher. The principle of retribution, though, says nothing about a personal desire for payback. Nor does it require or imply an angry sentencer. The determination of deserved punishment should be made according to universal moral principles on behalf of the community; the determination of deserved punishment is dispassionate. Nor does retribution, in principle, dictate harsh results. In some cases, a punishment that is deserved may be more lenient than that called for by other theories such as deterrence.

The *principle of deterrence* is often seen as the main rival to retribution. Where retribution is deontological, because based on concepts of fundamental right and wrong, deterrence is teleological, finding its justification in the consequences of punishment – in the observable good that punishment achieves. Deterrence, as originally set out by Bentham (1968), and presented in contemporary versions by Nigel Walker (1994) and James Q. Wilson (1983), is based on a utilitarian calculation of costs and benefits, with those costs and benefits assessed according to basic measures of human pleasure and pain. Because it involves the infliction of pain, punishment represents a significant disutility. It can only be justified to the extent that the disutility of its pain is outweighed by its utility, meaning the social benefit that it provides in preventing future instances of crime.

Like other utilitarian theories, deterrence assumes that human beings are rational calculators, who will adjust their behavior according to the consequences of their actions. Individuals will try harder to avoid committing a serious crime in order to avoid the serious penalties that will follow from conviction.Deterrence provides for proportional punishment according to the idea that the crimes that cause the most social harms are those that need to be deterred the most, hence their commission merits the highest (deterrent) penalty. Less harmful crimes merit lesser punishment on the same reasoning. Deterrence may be divided into general deterrence, preventing future crimes by others, and specific deterrence, preventing future crimes by this offender.

There are two other consequence-oriented punishment justifications which may be fit under the utilitarian umbrella of deterrence, though they are often treated as theories in their own right: incapacitation and rehabilitation. Incapacitation justifies the forcible restraint of an individual to prevent future offenses against members of (free) society during a period of punishment. Rehabilitation justifies loss of liberty to effect a change in an offender such that he or she will become a productive and law-abiding citizen; to ensure, in other words, that he will not offend again.

Advocates for deterrence champion the theory's grounding in empirical assessment. Deterrence eschews retribution's reliance on purportedly fundamental, but perhaps just subjective, moral principles in favor of assessment

of observable facts: the harms of certain crimes and the penalty needed to deter them efficiently. Similar to retribution, the calculation of social utilities and disutilities under deterrence is meant to be dispassionate. The personal feelings of the sentencer – whether angry or fearful, sympathetic or disgusted – are irrelevant to calculations of a penalty that produces the greatest good for the greatest number.

To sum up, classical theories of punishment posit a sentencer who decides punishment without emotion. Emotion is unnecessary. Actually, as we will see, emotional influence is viewed as dangerous under these theories, because of its potential to distort the decision making process. Theories of punishment do not decide particular sentences, however. Humans beings do. And when we look at how human sentencers make their decisions, we see that the practice of punishment often looks very different from its theoretical conceptions.

Emotion and the Practice of Punishment: Problems with Sentencer Emotion

Punishment practice does not generally follow either retribution or deterrence as classically described, because few sentencers are punishment theory purists: they do not limit themselves to either retributive or deterrent principles. Instead, most sentencers view both principles as valid sources of guidance. Some offenses and offenders may inspire the sentencer to take a more retributive approach; others may inspire a largely deterrent approach. For example, a judge might determine that an elderly man who murdered his sick wife might deserve a significant sentence by virtue of his premeditated decision to kill (a retributive approach) rather than because he needs a long sentence to deter him from future criminality (a deterrent approach).

By contrast, consider punishment for a young woman who was peripherally involved in an organization that committed widespread identity theft. Although her contribution to the scheme was modest and of brief duration, and can be traced to the influence of a controlling boyfriend, the larger organization caused significant economic and psychological harms. This is also an offense on the rise, presenting significant public safety concerns. Under retribution, this defendant would deserve only modest punishment due to her limited personal culpability, but a court concerned about general deterrence of identity theft might impose a more significant sentence here.

Equally significant for the problem of regulating the influence of emotions, principles of retribution or deterrence are so broadly stated that they provide few means of ensuring that particular decisions are rendered in accord with punishment principles alone. It can be extraordinarily difficult to tell the difference between a purely reasoned retributive judgment, for example, and one that might be motivated by a sentencer's personal anger at the offender . Similarly, how can we distinguish between a purely utilitarian assessment of punishment and one that is influenced by personal fear of the offender? This means that it can be difficult to say whether a given sentence was based on principle or emotion.

Sentencing in criminal cases responds to events that often inspire a high degree of emotion. Although courts presume that punishment decisions will be rendered dispassionately, legal scholars have increasingly recognized the inevitability of emotive influence in punishment decisions. Emotions cannot be simply banished from punishment decisionmaking by moral or legal fiat. This is especially apparent when we realize that in a democracy, important penal decisions are made in legislative halls as well as courtrooms. Legislators set the upper and lower limits of lawful punishment through statutory enactments. With minimum mandatory penalties, legislators can effectively dictate punishment in some cases, leaving judges with little sentencing discretion. Legislators of course are elected officials who must regularly answer to voters; this makes them highly susceptible to the influence of public emotion. For this reason, mandatory penalties do not solve the problem of emotive influence on sentencers; they just shift the problem from judges to elected officials.

Probation officers who write presentence reports should also be considered important decision-makers in the sentencing process. The way an officer gathers information about offense and offender, how she or he presents it in the presentence report and the recommendation the probation officer makes to the judge on sentence, all can have a significant influence on the ultimate judicial decision. Thus the susceptibility of probation officers to emotional influence should be a concern as well.

Given that sentencers, at least in cases of serious crime, will inevitably be influenced by emotional responses to the offense and offender, any adequate conception of just punishment must take account of the potential effects of emotion on sentencer decisions. The effort must be at least twofold: (1) to determine how emotion is likely to influence sentencers, and (2) to devise mechanisms to minimize the chance that emotion will motivate an unjust sentence. Addressing these in turn, we must first learn more about the fraught relationship between sentencer emotion and punishment principles. We must determine how emotional influences may coincide with punishment principles and how they may conflict. Then we can attempt to moralize emotive influence; this will prove more constructive than trying to suppress it entirely.

While Western thought has long treated emotions as irrational and therefore opposed to deliberative reason, the cognitive and rational basis of much emotion is widely recognized in contemporary philosophy, psychology and legal scholarship (Solomon 1983, De Sousa 1987, Lazarus & Lazarus 1994, Bandes 1999). In some instances at least, emotional judgments may work in sync with moral and legal judgments.

Anger is the emotion most associated with retributive punishment decisions, because its judgment structure bears a significant similarity to retribution's. Anger begins with a assessment of wrong. We become angry with someone who has wronged us or another. This leads to the felt urge to set the wrongdoer right by criticism or punishment. Thus anger in response to a crime might prompt a personal judgment that punishment principles would approve as well. Anger at rape, or a brutal murder, or a fraud scheme against senior citizens who were targeted for their vulnerability – these emotional responses might track retributive judgments. Anger's judgment here might parallel a reasoned assessment of deserved punishment that was based on careful evaluation of the harm done and the offender's culpable choice to cause it. The relationship between anger and moral judgment remains deeply uncertain, however. Anger is not necessarily morally based. Sentencer anger, for example, could be rooted in race or ethnic bias, convincing sentencers to impose punishment that is not in fact deserved.

Some have sought to reconcile the realities of emotion in punishment, and especially anger, through expressive theories of punishment (Feinberg 1970, Pillsbury 1989, 2002; Duff 2001). These theories generally marry retributive principles and expressive justification for penal practice. Punishment does and should affirm the importance of the community values that were violated by the defense. In this way, the value of public anger at wrongdoing is acknowledged, but the expression of that emotion is kept within the bounds of deserved punishment.

Under deterrence's rule, fear of what the offender might do in the future or what others similarly situated might do, may mirror a reasoned assessment of the need to prevent future criminality. Fear can be notoriously subjective, however; its assessment may depend on personal sensitivities that do not accurately weigh relevant social costs and benefits in imposing punishment. Again, class and race biases may be particularly dangerous. Certain defendants by virtue of their group classification may be perceived as more dangerous than they actually are. Others may be seen as less dangerous than they truly are.

Under both retribution and deterrence, sentencers are susceptible to what I call mercy discrimination, in which sentencers feel more sympathetic to some defendants than others based on class and race distinctions. As a result, the favored (few) get individualized and often merciful treatment; the less favored (meaning most defendants) receive the standard severity of American penal practice. A defendant who is white, or perhaps Asian, from a middle class background with significant educational and other achievements, family support and good career prospects who is convicted of a sexual assault may receive a light sentence by a judge who focuses on the defendant's individual life circumstances.

The sentencer may perceive the defendant as less "criminal" and therefore less dangerous or culpable than others appearing before the court, and perhaps also see the defendant as more sensitive to punishment and therefore less needful (under a deterrence regime) of a harsh sentence. Meanwhile an African American or Latino convicted of the same offense, who comes from an economically struggling family, who has few educational achievements and only modest career prospects, will receive the full measure of the law's punitive force. Here the court will emphasize the severity of the defendant's offense in terms of both culpability and dangerousness. The sentencer may not admit to

any hostility to minorities, but special empathy for nonminority defendants will produce biased decisions all the same – because of nonmoral emotive influence.

Regardless of punishment theory, moralizing emotive influences requires that sentencers make a conscious effort at emotional self-knowledge. The most dangerous emotional dynamics in sentencing stem from self-deception. Self-deception can take several forms. A form of self-deception encouraged by law can be found in what has been called the myth of dispassion (Pillsbury 1989, p. 666). This myth holds that legal decisionmakers can and should decide issues without emotion. Following this myth, the sentencer may, even in a highly emotional case, deny that he or she has experienced any emotion in reaching the punishment decision, ignoring the ways that initial inclinations and even final judgments may have been affected by unnoticed or unacknowledged feelings. Or, the sentencer may acknowledge personal feelings about the case, but believe that based on his or her own professional rectitude, that the anger, fear or other emotion experienced is morally principled. It simply could not be the product of merely personal concerns.

To combat these tendencies, sentencers should engage in formal self-examination about emotion. What am I feeling about this case? What do I feel about the person to be sentenced? Are these feelings justified by the facts as assessed under punishment principles? If not, how can I reach a reasoned decision, putting aside irrelevant personal feelings?

Another set of tools to moralize emotive influence comes from better articulation of the varieties of emotion and their moral characteristics. A more rigorous classification of emotion types than is found in ordinary language will permit better distinctions between feelings that may support and those that may contradict just punishment decisions. Along these lines, a number of contemporary legal and moral philosophers have begun to explore different emotions and relational perspectives that are potentially relevant to punishment. Exploring negative emotions, commentators have looked at the moral relevance of resentment and disgust (Moore 1987, Kahan 1998, Nussbaum 1998). On the positive side, writers have examined the possible connection between mercy and forgiveness on just punishment (Hampton & Murphy 1988, Murphy 2003).

Although it is not my focus here, I should also note a long-standing tradition of analyzing public emotions about punishment, an analysis that may be used to support or to critique punishment practices. In the early 20th century, sociologist Emil Durkheim described and celebrated the moral educative effects of punishment. His argument was that punishment of crime reflected and reinforced public commitment to basic social values (1984). Contemporary social scientists tend to be more critical, exploring how modern harsh punishment regimes respond to and express social fears and anxieties (Simon 2007, Garland 2001).

The Emotional Expressions of Victims and Defendants: Restorative Justice and the Relational Turn

While much of the legal and philosophical consideration of emotion and punishment in recent years has focused on the emotions of sentencers, there have also been significant controversies about the emotional expressions at sentencing hearings of persons directly affected by the crime or its punishment. Here, most discussion has centered on personal statements by victims at sentencing which detail the personal harms of the offense. Legal commentators have also considered the normative status of emotional expressions by defendants at sentencing, particularly statements of remorse (see Murphy 2012, Ward 2006).

Modern law provides both defendants and victims the chance to speak at sentencing in most US jurisdictions. Defendants have a right of allocution which guarantees the opportunity to address the court directly prior to sentencing. Victims rights legislation, enacted in most American jurisdictions in recent years, gives individual victims and victim-survivors the right to address the court as well. Victims often deliver what is called a victim impact statement, in which they detail how they and loved ones have been affected by the offense. These statements are formally directed to the court, but victims often envision the defendant as their primary audience. As an example, here is a recent impact statement by a rape victim that was widely publicized, and that is directed primarily at her convicted attacker:

> **Your Honor, if it is** all right, for the majority of this statement I would like to address the defendant directly.
>
> You don't know me, but you've been inside me, and that's why we're here today.
>
> On January 17th, 2015, it was a quiet Saturday night at home. My dad made some dinner and I sat at the table with my younger sister who was visiting for the weekend. I was working full time and it was approaching my bed time. I planned to stay at home by myself, watch some TV and read, while she went to a party with her friends. Then, I decided it was my only night with her, I had nothing better to do, so why not, there's a dumb party ten minutes from my house, I would go, dance like a fool, and embarrass my younger sister. On the way there, I joked that undergrad guys would have braces. My sister teased me for wearing a beige cardigan to a frat party like a librarian. I called myself "big mama", because I knew I'd be the oldest one there. I made silly faces, let my guard down, and drank liquor too fast not factoring in that my tolerance had significantly lowered since college.
>
> The next thing I remember I was in a gurney in a hallway. I had dried blood and bandages on the backs of my hands and elbow. I thought maybe I had fallen and was in an admin office on campus. I was very calm and wondering where my sister was. A deputy explained

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Despite early judicial controversy (Booth v. Maryland 1987) and significant academic critique (Bandes 1995), there is a present consensus in American law today that emotional expressions by victims at sentencing are valuable and even essential to the justice process (Payne v. Tennessee 1991; Cassell 2009). Why they are important is not so clear, however, especially, under classical punishment theories.

A key question in law has been whether victim impact statements provide relevant and important information to the sentencer. Do victim statements provide judges with additional, significant information about harm and offender culpability (for retribution), or about the future dangerousness of the offender (for deterrence)? Or is the contribution made by such statements essentially emotional? Often it appears to be the latter. The harms and wrongs of the offense and the dangers of future wrongdoing are generally well established in the case before victims ever speak. What is distinctive about victim statements is the way that the consequences of the offense are expressed in emotionally salient terms. Few can listen to such statements and not be (emotionally) moved.

Here, for example, is a link to a couple of victim impact statements given at the sentencing of a notorious serial killer.

To the extent that the value added by victim statements is essentially expressive, they would not seem needed for just punishment under either retribution or deterrence. Instead, such statements might be *excluded* given their potential to emphasize racial, class and other personal characteristics of victims, which may exacerbate the most dangerous aspects of emotive influence – race and class bias. By encouraging more severe punishment in cases with particularly sympathetic or articulate victims, such statements may lead to further inequity in a criminal justice system already rife with inequality (Bandes 1996, 2009). In sum, the dangers of nonmoral emotive influence might argue against giving victim impact statements the pride of place that they now have in the American sentencing process.

Now we turn to defendant expressions of remorse at sentencing. These always been part of punishment decision-making. Following conviction, defendant's frequently offer remorse statements, either personally or through counsel. They may express regret for the wrong done and the harm inflicted. If the convicted offender does not express remorse prior to sentencing, prosecutors are quick to point out that fact. Prosecutors may also question the sincerity of any remorse that defendants do express. Sentencing judges commonly make their own assessments of defendant statements of remorse. Given the importance of such statements, we might expect that they would have strong justification under both classical punishment theories. In fact, remorse statements are only important to deterrence assessments, and even then their significance may be contested.

Offender remorse is not relevant to retribution. Punishment is deserved according to the defendant's past wrongdoing; subsequent developments, including a shift in the offender's outlook, do not matter. Deterrence of course looks ahead, which makes remorse potentially significant. A remorseful offender is less likely to offend again and thus there is less need for punishment to achieve specific deterrence. Given the offender's obvious remorse, there might also be less need for punishment to make an example for other potential offenders. And yet considerations of remorse raise many procedural, pragmatic and substantive law issues (Ward 2008). A major problem is evidentiary: how do we assess the sincerity and significance of offender remorse? How can we tell if words of remorse are sincere expressions of personal responsibility as opposed to expressions of regret for capture, conviction and punishment? Even if sincere, does remorse predict future behavior? Regretting past mistakes and avoiding similar conduct in the future can be quite different things.

Notice that this discussion of remorse focuses on the effects of emotional statements on the sentencer. But what of their impact on victims present in the courtroom? Victims of wrongs both civil and criminal often say that what they want most is an apology from the person who harmed them. Expressions of remorse can change the victim's view of the offender, transforming a thoroughly negative relation characterized by anger, hatred and resentment, into a relation of acceptance, where the offender's humanity is acknowledged. In effect the offender's recognition of the victim's humanity permits the victim's recognition of the same in the offender. Sometimes this can encourage the victim to forgive the offender, an act of moral and emotional significance, though not necessarily of legal import (Bibas & Bierschbach 2008). The relational shift that may occur following defendant expressions of remorse and apology may lift part of the emotional burden borne by victims. This would seem to make such expressions a valued part of the punishment process. Yet changes in state of moral and emotional relations between offender and victim are not addressed by retribution or deterrence, as these theories are concerned only with the *state's* response to criminal wrongdoing.

For an example of a remorse statement at sentencing, see this by a young man convicted of killing a small child he was asked to babysit who would not stop crying.

To appreciate the potential value of victim and defendant emotional expressions at sentencing we must leave the realm of retribution and deterrence to consider an alternative approach to criminal justice known as *restorative justice* (Zehr 2015). Restorative justice is best understood as a general theory of justice rather than a theory of punishment. Restorative justice principles do not aim to justify and guide the state's imposition of negative sanctions for criminal conduct in the way that classical theories of punishment do. The restorative justice approach does have much to say about the process of sanctioning wrongdoing, however. Most importantly for our concerns, restorative justice addresses the potential value of direct personal communication and relational transformations between wrongdoers and those hurt by the wrong.

Restorative justice views crime as a violation of community relationships. It holds that responses to crime should seek to repair those relationships. Restorative justice contemplates a community-directed, rather than state dictated, process of interaction between victim, offender, their supporters and community stakeholders to establish the responsibility of each participant. Ultimate outcomes frequently include statements of apology by the wrongdoer, and acts of restitution and atonement to those hurt.

As an example, consider a case in which two 14-year-old boys broke into an elementary school on a weekend, did extensive damage by smashing chairs, tables and spray painting walls. They also stole two computers from administrative offices. Based on surveillance images and an ill advised attempt to sell one of the computers, the boys are soon arrested and confess their involvement to the police. Assuming no significant prior criminal histories, these boys are likely to be sentenced in juvenile court to community service (with the type of service likely to be determined by the probation department), a fine and/or restitution, and a term of probation that carries with it a number of conduct mandates and restrictions (such as attending school regularly, not using drugs or alcohol) and also the potential for additional punishment if the terms of probation are disobeyed. The judge is likely to find such a sentence appropriate under either retribution or deterrence. The offense likely is not serious enough to merit incarceration under re-

tribution, and the dangers of future similar criminality can be addressed by a non-incarceral sentence as well. The sentencing hearing will probably feature a prosecutor describing the damage done, statements of remorse made by defense counsel on behalf of the boys, and a sentencing address by the judge that will include both moral judgment on wrongdoing and warnings to the boys about the legal consequences of future misdeeds.

Now imagine a restorative justice response. Following preparatory work to explain the restorative process and to gain agreement to participate, stakeholders would be assembled, including representatives of the school, the boys, and their parents. School representatives might speak about the economic and human damage done by this crime. They might describe how upset young students were to see the smashed furniture and graffiti when they came to school on Monday morning, how disheartening it was for school teachers and administrators, and the anger of parents after they learned of the attack on the school. The boys' parents might speak about what was going on in their boys lives that might have contributed to their conduct. The boys' parents might also speak about their own response to the crime. The boys would speak about what they did, what they were thinking at the time, and how they feel now. The boys would be encouraged to express personally and plainly their regret for hurting others.

At some point the process would move to an creating an agreement for relational repair. The boys might, for example, agree to come to the school on a weekly basis over the next four months to work with groundskeepers and others on school maintenance and repair. The boys might agree to write a letter or record a video to apologize to students, staff and parents for what they did. There might also be an agreement of stakeholders to meet other needs that the boys may have, which might be connected with their offense, such as needs for educational, psychological or medical help, or to provide opportunities for building skills. The process would be lengthy, and often emotional, because it would call for an honest and personal recounting of the effects of the offense on the community.

The following link provides an example of some of the dynamics of restorative justice, in an exchange between victim and offender.

From the punishment and emotion perspective, what is striking about the restorative justice model is how it makes emotional expression central to doing justice. The restorative process depends on direct personal interactions between those most affected by the offense. It relies on the emotional responses of participants to reach a just community resolution.

From this account of restorative justice, we see how its principles may make better sense of contemporary practices relating to statements of defendant remorse and victim injury than do retribution and deterrence. Sincere expressions of remorse by an offender, especially if made directly to a victim, and victim statements of injury, especially if made directly to an offender, may transform moral and emotional relations between these persons and help repair community relations torn by the offense. This provides intriguing evidence that an important part of criminal justice is relational: transforming moral and emotional relations between offender, victim and community.

Conclusion

We have seen here that the relationship between sentencer emotion and just punishment is morally complex. We have seen that sentencers, as human decision makers engaged in often highly emotional situations, are susceptible to emotive influence. The best approach to reconciling emotions with just decision-making is not an attempt – fruitless in any case– to ban it from the legal arena, but to moralize its effects through self-knowledge and a more sophisticated understanding of the interaction between the emotional, the moral and the legal.

We have seen that the emotional expressions of victims and defendants that sentencing may make important contributions to justice, though these are not always well captured by traditional views of punishment. The restorative justice model, which sees the transformation of relationships as critical to justice, gives us a better way of understanding contemporary practices that encourage emotional expressions by victims and defendants at sentencing.

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Psychopathic Brains on Trial

emotionresearcher.com/psychopathic-brains-on-trial/

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October 2016 – The law is obsessed with emotions. For instance, in criminal cases, a great deal might rest on whether the defendant was consumed by jealousy just before the commission of the crime, whether he feared for his life, or whether he felt remorseful after the crime was committed. Concern also surrounds the emotions of those making legal decisions, such as whether jurors are likely to be disturbed by gory images, or whether some judges are more empathetic than others. In search of deeper insight into the emotional life of legal actors, legal systems increasingly turn to recent discoveries, techniques, and technologies from the neurosciences.

A greater understanding of the brain basis of emotion could potentially be relevant to many branches of the law including tort law, medical law, policing, and criminal litigation. However, not all neuroscientific findings on emotion are relevant to, or ready for use in, legal settings. Therefore, to understand how best to integrate the descriptive knowledge of the neurosciences with the normative challenges and duties of the legal system, a highly interdisciplinary effort is required. This interdisciplinary effort has led to the emerging field of neurolaw.
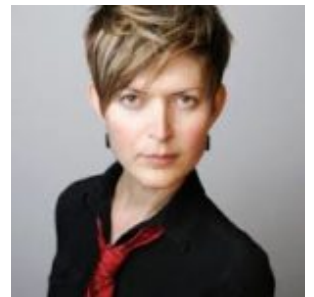
In this paper, we aim to contribute to the scholarship on emotion in neurolaw by critically evaluating the degree to which neuroscientific research on emotion can inform legal decision making in one particular context, that of psychopathy and criminal responsibility. However, in order to appreciate what the science of psychopathy can offer to legal decision making, it is important to first understand the specific ways in which scientists define emotion because these definitions often differ from legal ones. Therefore, we begin our discussion with neuroscientific definitions of emotion followed by an examination of how neuroscientific research on psychopathic emotion processing measures up against common criteria for reduced criminal responsibility. We close by discussing some potential caveats in the application of the neuroscience of emotion to legal decision making in the context of psychopathy.

Neuroscientific Understandings of Emotion

The law typically relies on common-sense or folk definitions of emotion. But when asking what the neurosciences bring to bear on our understanding of the role of emotion in law, it is important to recognize that the neurosciences define emotion differently than legal systems do. This is important because if the legal and scientific understanding of emotions is not the same, then this may cause miscommunication between lawyers and scientists, and subsequently undermine the relevance of the science of emotion to legal questions. Neuroscientific definitions of emotion differ from legal definitions in at least three important ways, which we describe below.

Explicit vs. Implicit Emotion

Whereas folk notions of emotion emphasize the phenomenological or "explicit" qualities of emotions, such qualities are neither a necessary nor a sufficient component of neuroscientific conceptualizations of emotions. From a neuroscience perspective, an emotion is a suite of measureable physiological and neurological changes, not all of which are necessarily felt by the subject or recognized as emotion. For example, although we might think that our attitudes toward other social groups are based on a fair, rational, or at least, consistent set of values, prejudicial attitudes can be easily induced outside our awareness through simple emotional manipulations such as recalling a

time when you were angry (e.g., DeSteno, Dasgupta, Bartlett, & Cajdric, 2004). So, we do not always have explicit access to emotional states that influence us. Yet, these "implicit" emotions enable neuroscientists to predict and explain changes in the organism's outward behavior, independently of the felt emotion. This fact raises important questions for the law about an agent's ability to control behavior that may be influenced by factors outside his/her awareness.

States vs. Traits

Another distinction relevant to the neurobiology of emotion is the concept of mental states versus traits. A mental state is an acute, temporary phenomenon such as a bad mood. The mood might be triggered by an environmental cue such as being mistreated, and may dissipate in a matter of hours or minutes. An emotional trait, in contrast, can be defined as a stable, dispositional character attribute that maintains consistency over long periods, such as when a person is highly empathetic across various situations over time (Davitz, 1969). This distinction between states and traits is relevant to legal inquiry insofar as it reveals something about an actor's inherent tendency, and perhaps capacity, to behave in a particular socially acceptable or unacceptable way.

Disruptive Events vs. Adaptive Systems

Legal doctrine often characterizes emotions as disruptive and dysfunctional. Many neuroscientists, however, view emotions as helpful biological strategies that evolved to enable organisms achieve their biopsychosocial goals. For example, social emotions like anger, guilt, gratitude, and jealousy are believed to have evolved to solve recurring problems involving social exchange (Tooby & Cosmides, 2008). The variety of goals subserved by adaptive emotion systems can be organized into at least five broad classes: (a) perception: selecting and interpreting external information including others' mental states, (b) motivation: preparing the organism to engage in a particular kind of action, (c) regulation: exerting inhibitory control over emotional compulsions, (d) communication: signaling one's needs to others, and (e) calibration: resetting one's own internal expectations and thresholds for action. This systems approach to emotion is potentially relevant to the law to the extent that the law must assess what individuals (such as a particular defendant) might have perceived during a particular event, what they might have intended, how easy it was for them to control their behavior, whether they are likely to learn from their mistakes, and so on.

In summary, neuroscientific definitions of emotion differ in various ways from folk and legal conceptions. This requires careful analysis of the tacit assumptions surrounding emotion talk in the legal profession and in neuroscience, to avoid misunderstanding. Furthermore, if emotions are part of the implicit biological machinery that generate particular kinds of actions, as neuroscientists believe, then neuroscientific findings presents both an opportunity and burden for legal entities to evaluate when these causes of behavior are relevant to legal decisions such as decisions hinging on assessments of an individual's perceptions, motivations, capacities, and values.

Implications of Emotion for Criminal Responsibility: Psychopathy as a Case Study

In order to assess how neuroscientific perspectives on emotion could play out in real legal decisionmaking, it is instructive to consider very specific problems in particular sub-areas of the law. Our case study focuses on criminal responsibility in psychopathy. Psychopathy has been described as a personality disorder with a constellation of affective and behavioral characteristics including impulsivity, manipulativeness, and lack of empathy and remorse (Hare & Neumann, 2008). Though they make up less than 1% of the general population, they are disproportionately represented in correctional settings (Hare, Hart, & Harpur, 1991).

Psychopathy is a useful case study because there is a sizeable scientific literature implicating psychopathy as a neurobiological disorder involving aberrant emotional processing, and yet psychopathy is almost never a legitimate defense in a court of law. Clearly, a gap remains between the descriptive scientific results and normative legal criteria for reduced responsibility, but exactly what normative criteria are being used to evaluate the legal status of psychopathy—and whether these criteria are doing justice to the science—is far from clear. Our aim is to elucidate some of these questions by considering how well the neuroscience of psychopathic emotion processing measures

against legal standards associated with the insanity defense. Specifically, we will investigate whether psychopathic individuals who commit crimes can justifiably invoke defenses involving impairments in perception, judgment and control. But before doing so, it is important to remind our readers of how our legal system defines crime and responsibility.

Legal definitions of crime and responsibility

Crimes are acts or omissions defined as offenses within the criminal statutes of a given jurisdiction, they are prosecuted by the state and at the state's discretion, and a finding of criminal guilt may result in the offender's being punished by the state. Furthermore, criminal offenses are defined by two elements—an "actus reus" and a "mens rea". In order for a person to be convicted of having committed that specific criminal offense, both elements must typically be proven beyond reasonable doubt. The *actus reus* element (forbidden act) specifies what a person must have done or failed to do—for example, unlawful killing of a human being, non-consensual sexual intercourse, or failing to come to another person's aid (the last of these being an example of an omission). And the *mens rea* (guilty mind) element specifies the degree of intention with which that *actus reus* must have been committed—for example, on purpose, with knowledge, recklessly, negligently, or in some cases regardless of intention (also known as "strict liability"). Thus, to be guilty of a hate crime, for instance, part of the mental element of that crime must be that it was motivated by hatred—or, at least, the *behavior* preceding the actus reus must convey the appearance of hatred—of a recognized and prohibited sort (e.g. of a racial group) at least in the context where it functions as a motivation for the commission of the prohibited act.

A defendant may escape a finding of criminal guilt (and thus criminal liability) if he or she successfully raises a recognized defense such as any of a number of mental capacity related defenses. Our focus here will be on the insanity defense.

For instance, under the M'Naghten rule for insanity—upon which many Anglo-American jurisdictions' insanity rules are based—guilt is diminished when "at the time of committing the act, the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing; or if he did know it, that he did not know what he was doing was wrong" (M'Naghten 1843). We take the reference to knowing the nature and quality of the act one is doing to be a reference to the capacity for right *perception*, and the reference to knowing whether what one does is wrong to be a reference to the capacity for right *judgment*, reason, or rationality. The Irresistible Impulse test, derived from Parsons v State (1887) (for discussion see e.g. Hauer 1944; or Gerber 1975), adds a volitional prong to the M'Naghten defense, allowing for diminished responsibility when defendant's capacity to *control* their actions was significantly impaired.

All three prongs—that is, perception, judgment, and control—are mentioned under the Model Penal Code's formulation (American Law Institute, 1962). There, guilt is said to be diminished if as a result of mental disorder the defendant lacked substantial[1] capacity either to appreciate the wrongfulness of his action (appreciation presumably requires both right perception and the ability to judge or reason correctly about what one is doing) or to conform his conduct to the requirements of law (which we take to be a reference to control). Much of the above thinking about responsibility rests on the idea that responsibility tracks mental capacity. In lay thinking, this is why children, the senile, and the mentally ill are thought to be less than fully responsible for what they do (i.e. because they lack the right kind and/or degree of mental capacity), why adolescents can acquire more and/or greater responsibilities (i.e. because mental capacities develop as children mature), and how responsibility is supposed to be reinstated on recovery from mental illness (i.e. because mental capacities are recovered) (Vincent, 2011).

Given this capacity-centric framing, impaired perception, judgment, or control—as long as it is a consequence of a (sufficiently severe) recognized disease of the mind—may diminish criminal guilt *via* its impact on *actus reus* (e.g. like in sleep-walking cases where the lack of consciousness means that the behavior is treated as a form of "automatism" rather than as genuine action, as something that happened to the offender as much as to their victim) or *mens rea* (like in the insanity defenses briefly discussed above).

Given the above sketch of what crimes are, of the elements of a criminal offense, and of how criminal guilt can be diminished, if it could be shown that certain emotions can undermine (or are needed for) accurate perception, judgment, and control, then the influence of those emotions may have a bearing on a person's criminal guilt.

A growing body of evidence suggests that individuals with psychopathy exhibit failures in perceptions of emotion, emotion-based judgments, and emotion regulation/control. In what follows, we use the example of scientific studies of psychopathy to demonstrate how scientific evidence of emotional deficits in psychopathic criminal offenders arguably diminishes psychopaths' criminal guilt by adversely impacting on their mental capacities that are relevant to actus reus and mens rea, and thus to their criminal guilt. We do this by examining the utility of neuroscientific evidence of emotion dysfunction in psychopathy for addressing legal criteria for diminished mental capacities in perception, judgment, and control.

Emotion and Perception

A substantial body of research suggests that individuals with psychopathy exhibit failures detecting and representing others' affective states. For example, Blair and colleagues found that psychopathic offenders were less accurate than non-psychopathic offenders at perceiving fearful displays presented facially (Blair et al., 2004a) and vocally (Blair et al., 2002). Biological evidence has demonstrated high convergence with such behavioral findings including evidence that people high in psychopathy show a reduced startle response to emotionally unpleasant images (Patrick et al., 1993) as well as a reduced skin conductance response to distress cues (Blair, 1997). Moreover, functional neuroimaging studies suggest that brain regions that subserve emotional processing, such as the amygdala and ventromedial prefrontal cortex, are less strongly engaged in psychopathic individuals in response to facial displays of emotion (Gordon et al. 2004), emotional pictures (Muller et al. 2003, 2008), and emotional memory tasks (Kiehl et al. 2001; see Blair, 2008). Correspondingly, structural neuroimaging research has found a negative association between psychopathy level and volumetric measures of the amygdala (Tiihonen et al. 2000; Ermer et al. 2012).

Emotion and Judgment

Research in moral reasoning has long supported the view that emotional and instrumental reasoning processes both play active roles in normal moral judgment. While both of these processes are likely to interact in complex ways to produce normal moral judgment, studies suggests that they are at least partly, experimentally dissociable. One such study asked healthy participants undergoing functional brain imaging to make decisions about hypothetical moral dilemmas (e.g., killing an innocent person to save five others) for scenarios that varied in how "up-close and personal" they were (e.g., killing by pulling a lever or pushing a person). The assumption here is that more upclose and personal dilemmas are more emotionally demanding. Unique areas of activation were found for the more personal dilemmas and included regions such as the medial frontal cortex and cingulate gyri (Greene, Sommerville, Nystrom, & Darley, 2001). Furthermore, the introduction of cognitive load during moral judgment tasks in healthy adults has been shown to interfere with instrumental moral judgments but not emotion-driven ones (Greene, Morelli, Lowenberg, Nystrom, & Cohen, 2008).

Research on moral judgment in psychopathy converges with the findings among healthy populations. In similar moral dilemma tasks, participants high in psychopathy are more likely than their low psychopathy counterparts to endorse judgments achieving instrumental as opposed to emotional ends (Bartels & Pizarro, 2011), and they are more likely to recommend punishments based on practical considerations of future dangerousness than emotional considerations of deservingness (Aharoni, Weintraub, and Fridlund, 2007). This judgment pattern parallels that of patients with ventromedial prefrontal cortex damage in similar tasks (Koenigs et al., 2007), lending support to the conclusion that medial frontal regions play a distinctive role in typical, emotionally-driven moral judgment.

Emotion and Control

Behavioral research suggests that individuals with psychopathy have blunted fear conditioning—that is, they have problems inhibiting a tempting action in order to avoid an aversive stimulus. For example, classic research on

avoidance learning showed that when psychopathic individuals were tasked to navigate a difficult maze that punished incorrect moves with an electric shock, these participants made significantly more commission errors relative to control subjects (Lykken, 1957; see also Blair et al. 2004b; Hare 1970; Newman 1987; Schmauk 1970). Interestingly, Schachter and Latané (1964) were able to reduce such commission errors in psychopathic individuals by increasing adrenaline concentrations in the bloodstream, suggesting an important role for the physiological stress response in inhibitory processes.

The ability of psychopathic individuals to regulate their impulses has been observed in risky decision making tasks such as the Iowa Gambling Task described above. In a typical task, participants are presented with several decks that, unbeknownst to the participants, differ in their proportion of "good" (rewarding) versus "bad" (punishing) cards. Unlike healthy participants, those high in psychopathy are more likely to persist in drawing from bad decks (van Honk et al. 2002), a pattern that is similar to patients with ventromedial cortex damage (Anderson et al., 1999; Koenigs et al., 2010) and orbitofrontal damage (Yechiam, Busemeyer, Stout, & Bechara, 2005). Given evidence that the healthy frontal cortical areas receive projections from the amygdala and are believed to down-regulate emotional input (Blair, 2008), these results suggest converging evidence that psychopathic individuals have a reduced ability to learn from punishment, and this dysfunction has roots in aberrant emotional processing.

The strong case for emotional dysfunction in psychopathy

Drawing upon the evidence of emotional dysfunction in psychopathic perception, judgment, and control processes, scientists have theorized that psychopathic antisocial behavior is accounted for by impairments to the neurophysiological mechanisms that implement perceptual, cognitive, and volitional mental capacities. For example, according to Blair's Violence Inhibition Model, a prominent theory of psychopathic dysfunction, individuals with psychopathy may be more susceptible to engaging in violent behavior because they lack some of the physiological and neurobiological equipment that otherwise help to perceive distress (Blair, 1995; Blair, 2007). Perceiving distress is important because it helps us to know when we might be causing someone harm so we can inhibit that behavior. Without this ability, individuals may be less likely to empathize with others because they do not recognize their distress as clearly. Consequently, they may be less likely to inhibit an inappropriate action because they fail to see reason to do so. To summarize this argument, behavioral and neuroscientific evidence appears to converge on the view that psychopathic individuals have diminished capacity to process emotion which plays a crucial role in accurate perception, proper judgment, and adequate control.

A similar position is often echoed in the philosophical literature, much of which is informed by the above-mentioned and related scientific research. For instance, in recent years, the mantra that mental incapacities can excuse criminal behavior has also played a prominent role in what various people have said about the moral and legal responsibility of individuals with psychopathy. Philosophers cite empirical studies which suggest that alongside reason, affect also plays an important role in moral judgment (e.g. see the special issue edited by Gerrans & Kennett, 2006; especially Prinz, 2006), and that psychopathic individuals have deficits in both affective and rational mental capacities (Blair, 2008; Hare & Neumann, 2010; Kennett, 2010). These deficits appear to be congenital—i.e. they have at least a partial genetic and neurophysiological basis (Harenski et al., 2010) for which psychopathic individuals cannot be straight-forwardly blame. As a result, some have argued that psychopathic individuals should be at least partly excused for what they do, or that their sentences should be partly mitigated (Fine & Kennett, 2004; Levy, 2007; Haji, 2010). Those who endorse this mental incapacity account usually characterize psychopathy as a kind of insanity or moral madness, for example, as a deficit, disorder or mental illness/disease. For instance, they talk about psychopathic individuals being significantly less able than non-psychopathic individuals to do certain things which moral agents must be capable of doing, and about them having neurocognitive deficiencies which they compare to blindness and disability. This approach and related terminology depict people high in psychopathy as victims of mental disease, not dissimilar to criminally insane individuals, for example, as patients who labor under the weight of an all-encompassing medical disorder which (by impairing their perception, judgment, or control) is the true cause of their abnormal, harmful, illegal and immoral behavior.

A key point in this view is that if neuroscientific definitions of emotion are correct—if emotions are potentially implicit, goal-directed biological systems with some degree of trait-like stability—then it would be reasonable to suspect that abnormal emotional processing in psychopathic offenders could consistently influence their behavior in a way that is outside of their awareness and control, much like an "incapacity".

Unanswered Questions in the Application of Neuroscientific Approaches to Psychopathic Emotion in Criminal Law

Despite the growing body of neuroscientific and behavioral evidence we have reported, a diagnosis of psychopathy is virtually never legally excusing. Yet, psychopathy seems to share some common characteristics with other mental disorders that are more widely regarded as reflecting reduced capacity. For example, autism spectrum disorders are characterised in part by a limited ability to represent others' thoughts and feelings, a finding supported by neuroscientific evidence (e.g., Baron-Cohen et al., 2000; Mason et al., 2007; Kana et al., 2009). Few would object to the claim that autism entails some reduced capacities that should have a legal bearing.

So why do intuitions about the criminal responsibility of psychopathic individuals differ from that of other mental disorders? One possible answer is that despite the evidence that psychopathic individuals show abnormal behavior in laboratory settings, none of these studies demonstrate a true lack of capacity per se. It remains possible that, under the right conditions, psychopathic individuals can perceive harm, judge wrongfulness, and control their behavior to a reasonable degree. Indeed, there is some justification for this view (Maibom, 2008; Borg & Sinnott-Armstrong, 2013). A second possible reason why psychopathy is treated differently from some other mental conditions is that the evidence regarding psychopathic incapacity is simply less complete, and that more research will be needed before psychopathy can be legitimately compared alongside other well-understood conditions. A third possible reason is that we hold psychopathic individuals to a higher standard, perhaps because of our own preconceptions about their capacities. Regardless of which of these explanations is correct, it remains far from clear what scientific criteria should count as evidence of legal incapacity.

Admittedly, scientific observation will never be able to provide a smoking gun for evidence of incapacity because that would require (impossibly) observing the subject's behavior in all possible circumstances. However, this is not to say that scientific observation is wholly unuseful in such assessments. We know this because scientists frequently make such assessments in clear-cut cases. For example, we can conclude that a person in a vegetative state lacks the capacity to perform arithmetic. Likewise, we can be fairly confident that a person with a severe autism disorder will, on average, be less capable of understanding others' intentions. Such conclusions rely at least on implicit if not explicit criteria for capacity, criteria which are informed by empirical observation. This fact assures us that, even without a smoking gun, the prospect of developing criteria for defining certain kinds of capacities among psychopathic individuals may be both valuable and empirically tractable.

In order for the neurosciences to become more useful to the law, they must overcome some important limitations. The first and arguably most compelling is the necessity to develop a 'translation manual'. Given the differences we have discussed earlier concerning what legal theorists and neuroscientists take emotions to be, cross-purpose talk is inevitable unless major efforts are made to clarify what the various parties "mean" by emotion, and how scientific findings map onto the legal framework.

Once we bar the possibility of terminological misunderstandings, progress will become easier. But we must be clear about what sorts of contributions the neurosciences can offer. For example, a major responsibility of the law is to evaluate past mental and motivational states of individuals, such as whether a defendant feared for his life on a particular evening last year. At present, the neurosciences are not well-equipped to answer retrospective questions about fleeting mental states and should not be used in this way.

On the other hand, neuroscience can inform other types of inquiries, such as questions that rely on stable, group-level data. For example, if it is known that most people with a particular brain disease lack the capacity to regulate their emotions in the way that a healthy, reasonable person would. If the defendant is a member of this population

(i.e., carries the same diagnosis), then a strong case can be made the the defendant, too, has difficulty regulating his emotions. Such inquiries can be relevant to legal decision making as long as we have cross-validated ways (e.g., both neurobiological and clinical) of knowing whether the individual in question is a member of that group.

In some cases, neuroscientific research could become more helpful to the law if it specifically targeted legal concerns. For example, in legal settings the question is often not whether or not the defendant had a certain emotion, but why the failed to have a certain emotion given that they had the capacity for it. For instance, on the assumption that the defendant has the capacity for empathy, a judge may ask why he or she exercise it when seeing the victim's cash sticking out of her purse? In other words, why did the defendant's immediate desire for money override his internal value to do no harm when these two goals were placed in conflict? If neuroscience research is to become more useful to the law, it needs to do more to address these complex questions about motivational conflict.

Conclusion

This paper has set out to examine issues in the application of neuroscience to questions of emotion in legal decision making. We argued that before the neuroscience of emotion can be responsibly used in legal settings, it is important to appreciate how neuroscientific definitions of emotion differ from legal ones in terms of their functions, stability, and availability to conscious awareness. Using psychopathy as a case study, we entertained the argument that to the extent that emotions reflect implicit, goal-directed motivational strategies, how these strategies operate could potentially help inform questions of capacity (and thus, responsibility) by revealing when such strategies are likely to fulfill their aims. We focused on the example of psychopathy because courts remain unmoved by the scientific evidence on psychopathic emotion processing, obviating the need to further specify criteria for responsibility. Yet, many remaining questions must be addressed before our intuitions about responsibility can be formalized into a set a criteria that painlessly integrate scientific knowledge about emotion processing with our ethical and legal standards. Our present purpose is not to advance any substantive normative, legal, or scientific claims, but to provide a potentially useful approach for evaluating scientific questions about emotions and law.

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[1] Another important difference between the Model Penal Code's formulation and other formulations of the insanity defense is that instead of asking whether the defendant *completely* lacked the requisite capacities, it acknowledges that one may not completely lack a required capacity but may still be insane on account that their impairment was *substantial*.

The Circumplex, and the Psychological Construction of Emotions

emotionresearcher.com/the-circumplex-and-the-psychological-construction-of-emotions/

An Interview With Andrea Scarantino (October 2016)

James A. Russell is professor of psychology at Boston College. He has published over one hundred scientific papers, all on some aspect of emotion. His current work focuses on an approach to emotion called psychological construction, especially on ways to integrate this approach with other research programs such as appraisal theory and social construction. James was Editor-in-chief of Emotion Review from 2007 – 2014. He has co-edited The Psychological Construction of Emotion (2014) with Lisa Feldman Barrett, and The Psychology of Facial Expression (1997) with Jose Fernandez-Dols.

Jim Russell

Where did you grow up? What did your parents do? Can you tell me something about your family?

I grew up in a working-class family in Los Angeles, California. My father worked in a gasoline station, and my mother stayed at home. They divorced when I was 14. My mother went to work in real estate sales, and she continued to work until the day she died. Los Angeles is best known for Hollywood. My paternal grandmother moved to Hollywood when it was movie studios among the orange groves. She appeared in silent films under the stage name Vola Vale. (Here's a still photo from one of her films: http://fanpix.famousfix.com/gallery/vola-vale). One of my aunts, Virginia Bruce, was also in films, in the 1930s and '40s. (She was pretty good; take a look below):

Another aunt, Nancy, was secretary to Bing Crosby's wife. As a high school student, I worked at Desilu Studios in Hollywood, delivering the mail.

Tell me about your education. Did you develop an early vocation for academic work? What led you to study psychology?

I was educated in a Catholic grammar school and high school. I had no academic ambitions. If fact, I had no particular ambition at all and did not apply to college. But, as an advance-placement high-school student, I took some of my courses at UCLA. I enjoyed those courses, and so I simply stayed on for my college degree. Doing so was possible because I had a scholarship that paid tuition, and I worked in a physics lab for my living expenses. As an undergraduate, I was thinking about religion (I was raised a Catholic, but were the teachings reasonable?) and the big social and political issues of the day (civil rights, Vietnam war). I stayed an undergraduate as long as possible to obtain a deferment from military service in Vietnam, but also because I enjoyed being a student. I would have stayed longer if they had let me. I had a hard time selecting a major because I enjoyed almost all my courses from science and math to history, literature, and philosophy. I began as a physics major, but eventually switched. Psychology was a compromise, in that it combines philosophy with biology, two disciplines I found attractive.

Jim in high school
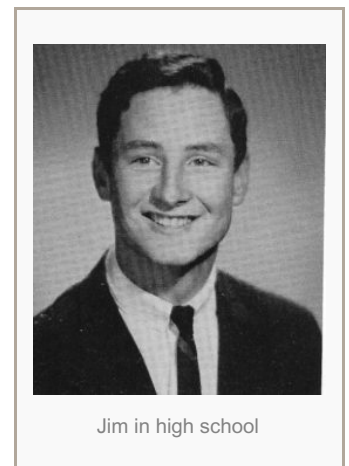
You got your PhD in psychology in 1974 at UCLA. Who were your mentors? Your dissertation focused on how the emotional quality of places affects behavior. Why did you choose this particular topic and what

were the main results of your dissertation?

My advisor was Albert Mehrabian, who studied nonverbal communication. I worked in his lab as an undergraduate research assistant. I failed to apply to grad school, but Albert arranged that I could stay on at UCLA as a grad student with a scholarship. I still had no academic ambitions, although I enjoyed research. I benefited from Albert, Bernie Weiner, Hal Kelly, and Peter Bentler – all of whom were personality-social psychologists. In the 1970s, the physical environment was becoming a large social issue (issues such as overpopulation and extinction of species; the first Earth Day occurred). So studying the psychological effects of natural and built physical environments appealed to me. Environmental psychology was emerging as a field, and Albert and I decided to try our hand at it.

Albert Mehrabian
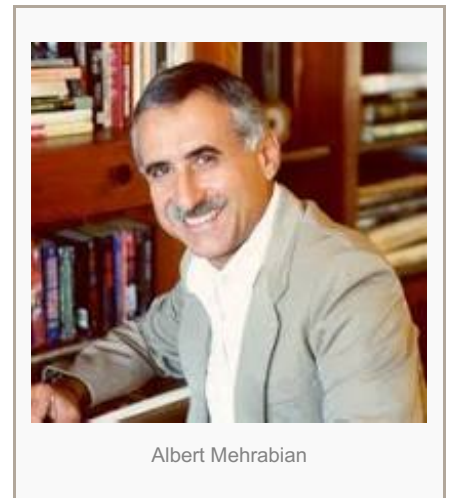
Thinking about this topic, it struck me that environments have an uncountable number of effects, depending on details, but a common factor was that they all tend to have an emotional impact; they create a mood: some are distressing, others relaxing, some exciting, others depressing. I spent my Christmas vacation in 1970 in Mexico taking slides of places that illustrated these emotional qualities and could be used in studies. Research for my dissertation provided the core of the book we wrote (Mehrabian & Russell, 1974). The book offered a simple framework for characterizing the psychological effects of large-scale environments. Environments alter the emotional feelings of people and thereby influence people's behavior: whether they feel like staying or leaving, affiliating or being alone, working or not, and so on. We drew mainly on prior research to propose a 3-dimensional structure for emotional impact, using the three dimensions of Pleasure, Arousal, and Dominance (PAD). So, my interest in emotion started as an interest in environmental issues.
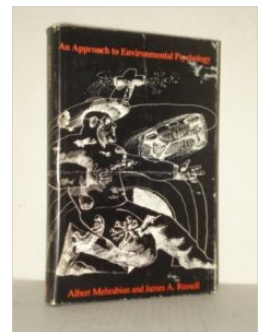
What was your first job in academia? Was it hard to find your career path? What do you like most and what do you dislike most about academia?

By 1974, I had finished my PhD and looked for a job. I had no academic ambition, but enjoyed what I had been doing in the Mehrabian lab, and I enjoyed teaching. My first job interview did not go well. No one told me that I would be expected to give a talk, and so had nothing prepared. I did not get that job. The next year, I got several more interviews, for which I did prepare a job talk. I was hired in environmental psychology at the University of British Columbia (UBC), which is in Vancouver, Canada – perhaps the closest place you'll find to paradise on earth. I tried to do applied work in environmental psychology, but found I had no talent for it. So, I continued with basic research questions, such as the nature of emotion. I wondered, for example, how to reconcile the simple PAD structure (which we used for emotional impact of places) with the appearance of a large (but elusive) number of separate discrete emotions: Could only three dimensions give a good account of people's avowed discrete emotions, which number in the hundreds, from angst to zeal?

I love academic life. I cannot imagine a better career for me. I get to do what interests me, to work with smart students, and interact with brilliant and caring colleagues. My colleagues are thinking hard about unanswered questions and want their work ultimately to make the world a better place. A university campus (with talks on science and humanities, musical concerts, plays in the drama department, and shows in the art department) is a wonderful place to spend time. At UBC, I did not like mandatory retirement and, because of it, left behind a wonderful department in a wonderful country. I moved to Boston College (which now has a wonderful psychology department as well), where I am now.

The article that really put you on the map as a major figure in affective science is "A circumplex model of af-

fect", published in 1980 in the *Journal of Personality and Social Psychology.* Can you briefly explain what inspired the circumplex model, how the model works, and how your understanding of the model has changed since the 1980s?

As an undergraduate research assistant, I had a tiny office with a chalkboard. In trying to make sense of the notion of "emotional impact of places," I thought about emotions and drew schemas on my chalkboard. The problem was that a list of the hundreds of different emotions was unwieldy, and so I needed a simple way to represent emotion. Based only on my own intuitions, I ended up with a circle with similar emotions near each other and opposite emotions far apart. (So, happy and sad were 180 degrees apart, but happy and thrilled were close to each other.) At UBC, Jerry Wiggins was interested in the circumplex as a mathematical model of the structure of personality traits and interpersonal behavior. I resurrected my emotion circle to apply his idea to emotions.

A circumplex is a mathematical representation of how variables within a domain are related to one another. The variables are arrayed on a circle, and there are ways to assess how well that arrangement fits the data. You begin with a measure of relatedness, usually the correlation coefficient. Variables that are more highly and positively correlated fall closer together on the circle, less correlated farther apart, and negatively correlated farther still. In the affect circumplex, variables on opposite sides of the circle are highly negatively correlated, and variables at right angles to one another are uncorrelated.

The affect circumplex begins by asking people to report their current state by rating the extent to which they feel each item on a list (happy, sad, etc.). The general finding is that different feelings are highly (positively or negatively) correlated: Allegedly discrete emotions are not independent of one another. People who report one negative emotion tend to report many others, for example. Ditto for positive ones. The circumplex model fit our data on self-reported feelings surprisingly well. An updated version of the affect circumplex is shown in Figure 1 below.

XII
Activation
(e.g., aroused, activated)

XI
Unpleasant Activation
(e.g., frenzied, jittery)

I
Pleasant Activation
(e.g., energetic, excited)

X
Activated Displeasure
(e.g., distressed, upset)

II
Activated Pleasure
(e.g., enthusiastic, elated)

IX
Displeasure
(e.g., unhappy, dissatisfied)

III
Pleasure
(e.g., satisfied, pleased)

120° 90° 60°
150° 30°
180° 0°
210° 330°
240° 270° 300°

VIII
Deactivated Displeasure
(e.g., sad, gloomy)

IV
Deactivated Pleasure
(e.g., serene, peaceful)

VII
Unpleasant Deactivation
(e.g., sluggish, tired)

VI
Deactivation
(e.g., quiet, still)

V
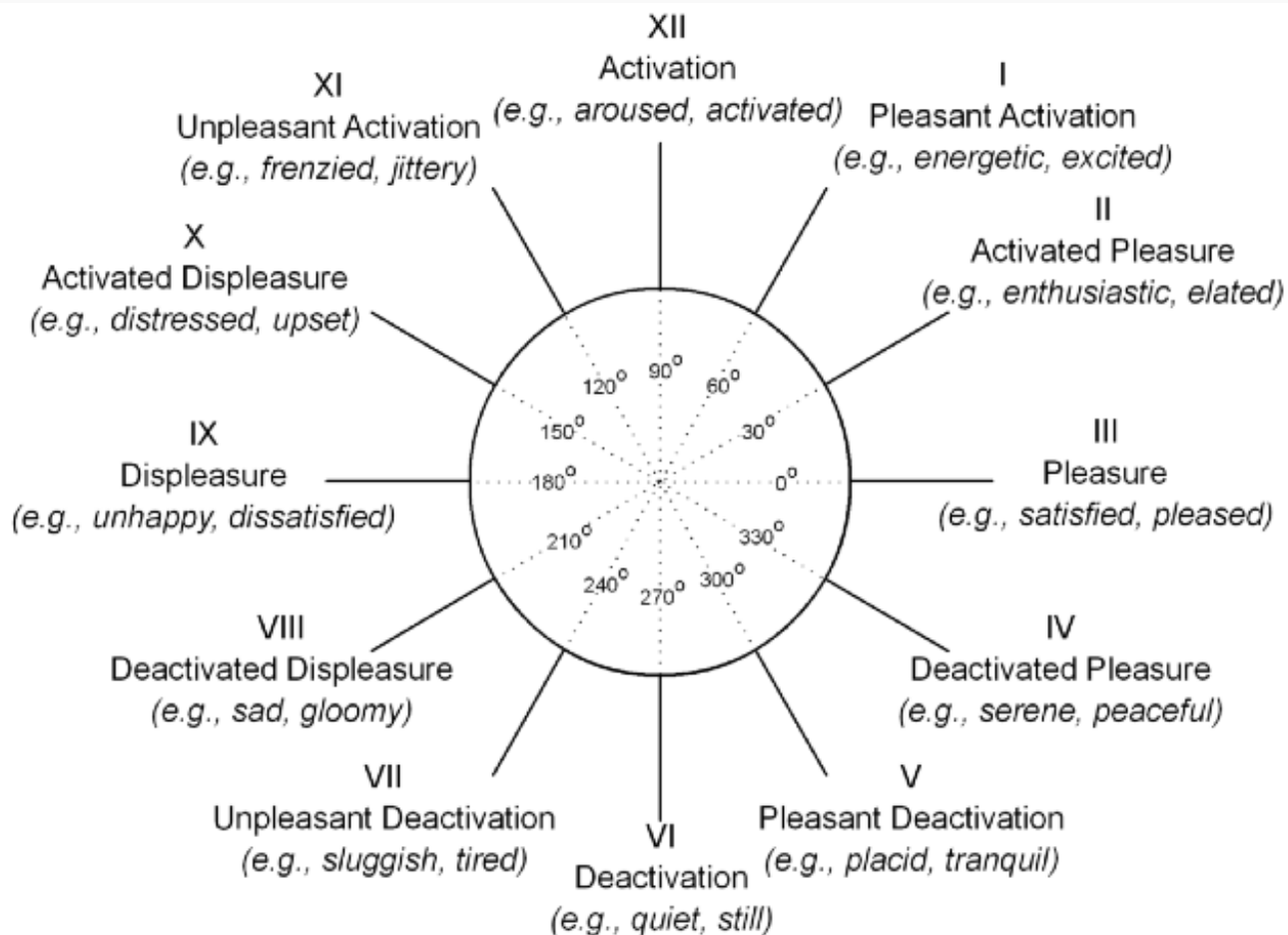Pleasant Deactivation
(e.g., placid, tranquil)

Figure 1. The 12-Point Affect Circumplex Model (12-PAC). The vertical axis represents the degree of Activation-Deactivation, and the horizontal axis represents the degree of Pleasure-Displeasure. Reprinted with permission from Yik, Russell, and Steiger (2011)

Interpretation of this result is another matter and more difficult. One question is whether the feelings assessed are all emotions. Some certainly seemed to be (such as happiness and sadness), but other less so. Still, empirically, all the items were systematically related to one another. Two orthogonal axes of the circle were readily interpretable. The placement of specific feelings around the affect circle suggested underlying dimensions of pleasure and arousal: that is, what the feelings that fall close to one another appeared to have in common was similar pleasure and arousal. *Thrilled* and *excited* are close because both are pleasant and aroused. *Serene* and *contented* are both pleasant and low in arousal. Feelings that fell on opposite sides of the circle appeared to be opposite in pleasure and arousal. *Excited* is pleasant and aroused, whereas *bored* is unpleasant and low in arousal. Pleasure is the continuum from misery to ecstasy. Arousal the continuum from sleep to high energy (what might be called an adrenalin rush.) Complementary evidence on this interpretation of the circumplex was that when pleasure and arousal are assessed directly, they predict self-reported discrete emotions surprisingly well.

The circumplex thus resonated with my earlier work on Pleasure, Arousal, and Dominance (PAD) as representing the emotional impact of places, but left out the D. So, the circumplex didn't capture everything about emotion (it leaves out not only D but other dimensions as well). An obvious example of differences being left out is that fear and anger are close on the circumplex, because both are unpleasant and high in arousal; so the circumplex does not capture the difference between fear and anger. It captures what various emotions and emotion-related feelings have in common, but not what is unique to a specific emotion. To make sense of what is and what is not captured by the circumplex, I suggested that the circumplex is interpretable as all possible combinations of the P and A dimensions. These two dimensions, in turn, capture a certain aspect of one's internal state, which, although influenced by the external environment, can vary independently of it (we can simply feel good or bad, energized or enervated, due to no known external circumstance and even despite external circumstances). In contrast, D can be thought of as one's

appraised power relative to external circumstances. D seems to make sense only relative to the outside world. Fear and anger share unpleasant and aroused feelings but differ in the external precipitating cause and in the typical overt behavioral reaction. In short, the circumplex captured an important part of but not the whole of an emotion.

I continue to examine the circumplex, including its underlying neuroscience (Posner, Russell, & Peterson, 2005), the assumption that opposite emotions are mutually exclusive (Russell, in press), the relation of the pleasure axis to the arousal axis (Kuppens et al. in press), and the presence of pleasure and arousal combinations in different cultures (Russell, Lewicka, & Niit, 1989).

Another important strand of your research emerged in the 1980s, and it concerns the structure of emotion concepts. In your work with Beverly Fehr, you argued that the concept of emotion, and the concepts subordinate to it like anger or love, have a prototypical structure. Can you explain what that means, and what evidence you relied on to establish such results? Secondly, are you still committed to a prototype structure for emotion concepts, or are you open to other possible models for emotion concepts (e.g. exemplar models, theory-based models, situated conceptualization models a la Barsalou, etc.), as long as they deny that there are individually necessary and jointly sufficient conditions for something to be an emotion/anger/love and so on?

From my undergraduate days, I was intrigued with Wittgenstein's philosophical analysis of concepts, according to which, counterintuitively, instances of a given concept do not all share common features but bear only a family resemblance to one another. It seems that the objects or events grouped together under a common name (such as all activities called games) need not have an essential set of features. Concepts defined by individually necessary and jointly sufficient features – often called *classical* concepts – are achieved by hard work (in math or logic or science), rather than inherited from the language of everyday thinking. In the 1970s, I discovered Eleanor Rosch's work on everyday semantic categories (e.g., Rosch, 1973). Eleanor pioneered empirical methods to examine everyday semantic categories and found that they possess an internal structure (some dogs are doggier than others; think German shepherds vs chihuahuas) and borderline cases (elevators are not only poor examples of a vehicle, but might not be vehicles at all, in the sense that ordinary language users are evenly split on their status as vehicles and the same person sometimes changes his or her mind when asked a second time). Many everyday terms label family resemblance concepts rather than classical concepts.

Ludwig Wittgenstein
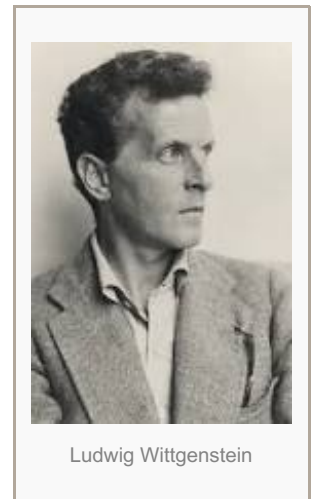
Bev Fehr and I used Rosch's methods to look at the everyday concepts of emotion, love, anger, and so on. We reported reaction time studies and task performance studies to make the case that emotion concepts fit Rosch's account (Fehr & Russell, 1984, 1991; Fehr, Russell & Ward, 1982; Russell & Fehr, 1994). Native speakers of English do not have classical definitions for these everyday concepts in terms of individually necessary and jointly sufficient features, even implicitly (they are unsure how to answer certain questions and disagree with each other and even with themselves over time). Instead, emotion concepts have a graded internal structure: some instances of emotion/love/anger are clear and prototypical cases, some are clear but non-prototypical cases, some are at the borderline for membership (borderline cases), and some are clear non-cases. For example, fear is a clear and prototypical type of emotion, regret is a clear but non-prototypical type of emotion, and serenity and boredom are borderline types of emotion. Indigestion is not an emotion. In addition, sentences that seem obviously true about emotion (including sentences about emotion taken from textbooks) – e.g., emotions are a stirred up state of mind – are judged by sub-

Eleanor Rosch

jects to hold true about the prototypical cases but not true about the non-prototypical and borderline cases (e.g. anger involves feeling stirred up, but neither regret nor boredom do).

To capture this structure, Bev and I suggested that the prototype of, for example, fear can be thought of as a *script* with prototypical subevents arranged in a causal and temporal order. These subevents (appraisal of the antecedent precipitating event, changes in peripheral physiology, expressive signs, conscious feelings, and overt expressive and instrumental behavior) are now commonly called *components*. Actual events are members of the category 'fear' to the extent they resemble the script, but resemblance is a matter of degree. Put differently, a script is a kind of schema or template. People rely on schemas to process the events they experience or witness by assimilating information to a familiar structure.

On your second question, I have no strong preference for prototype structure over exemplar models, theory-based models, etc. for everyday concepts. I was satisfied to argue against the classical view. I'll leave it to cognitive psychologists to determine the best alternative.

Is there a difference between the concepts of emotions held by adults and by children?

Sherri Widen and I have studied the development of emotion concepts, which, indeed, change considerably with experience (Widen & Russell, 2002, 2004, 2008, 2010). Children's earliest emotion concepts are simple, perhaps merely distinguishing positive from negative emotions, but they then gradually differentiate until the adult structure is reached. I believe that the positive – negative distinction is pancultural, but that further differentiation stems from some combination of preparedness and learning rather than simple maturation. Evidence for this suggestion is that the adult structure varies from one individual to the next, from one society to the next, and from one historical period to the next, although the structures show similarity as well. If so, then we should not assume that the semantic structure for emotion concepts that English-speaking children eventually reach is somehow privileged or inevitable or necessary. Those children would develop somewhat different concepts if they grew up in a different culture and spoke a different language.

Your last remark leads me to ask about cross-cultural differences in emotion concepts. In your "Culture and the Categorization of Emotion" (1991a, *Psychological Bulletin*), you reviewed the literature then available on how emotions are conceptualized in different cultures. Can you summarize some highlights from your review?

Much academic work on emotion takes the English word *emotion* to define the domain of study, and thus to specify the set of events that any theory of emotion must explain. Similarly, words for specific emotions (*anger, sadness, fear, happiness*) are treated as fundamental concepts in scientific theories of that domain. The question whether these English terms are good scientific tools prompted me to ask whether they are specific to Western culture or even English-speaking cultures. So, I searched for ethnographic accounts of emotion lexicons. Not all languages have a term translatable as *emotion*. Some English words for specific emotions have no translation equivalent in some other languages, and vice versa.

Perhaps the best known example is the Japanese word *amae*, which has no equivalent in English, and which desig-

nates a pleasant state of childlike dependence on an authority figure. Tahitians lack a word that translates as *sad*. The Baining people of Papua New Guinea have the category of *awumbuk*, which combines sadness, lassitude, tiredness, and boredom caused by the departure of visitors, friends, or relatives. Indeed, closer examination of what had been taken to be translation equivalents indicates that some are not equivalent. This review reinforced my growing conviction that English emotion terms are not inevitable as fundamental concepts in scientific theories in our domain of inquiry. If everyday terms are asked to work as scientific terms, I could see no reason why English should be privileged in science over other languages.

Can you say more about how your work on the prototype structure and cross-cultural variability of emotion concepts has affected your understanding of how emotions themselves should be scientifically studied? How does the structure of emotion concepts relate to your distinction between descriptive and prescriptive definitions of emotions (Russell, 1991; Widen & Russell, 2010b)?

It is essential that we distinguish (as you just did) concepts from the events they are concepts of. The prototype structure (actually evidence against a classical definition), the developmental changes, the individual differences in adult concepts, and the cultural and historical variability of emotion terms all contributed to my concern that ordinary everyday emotion concepts labeled in English might not deserve the status commonly given them by psychologists in their theories of the events they are concepts of. Folk emotion terms in English, and for that matter in any natural language, are likely unsuitable to serve as technical terms in scientific theories. This problem is not the exception but the norm in science, as the history of science shows us that folk concepts rarely survive as scientific concepts. If they did, folk physics would resemble scientific physics, folk biology would resemble scientific biology, and they clearly do not. The lesson here is that mining everyday language for deep truths about emotion might be as problematic as asking people in the street about the structure of the physical or biological world.

Admittedly, everyday terms historically serve as starting places in building a scientific account of some domain; still, they can be but need not be in the final account. (Constellations of stars have no role today in scientific theories in astronomy.) After decades of developing the basic emotion research program, Izard (2010, p. 383), remarked that "I agree that the term emotion may have a fate in psychological science similar to the term constellation in the science of astronomy." Indeed, perhaps the folk emotion terms have led us astray. If English emotion terms are scripts with culture-specific assumptions, then those terms require rather than provide explanation.

The question of how to "define" emotion, anger, love, and so on is repeatedly raised, with little appearance of progress despite centuries of attempts. I think that lack of progress is due to a muddle between two kinds of definition, based on the distinction between concepts and the events they are concepts of. One type we discover, the other we stipulate. Ordinary English terms label concepts that are used in everyday life in many important ways, and so we must study those terms; we must *discover* a *descriptive* definition for them. That is, we must *describe* the meaning of those words as that meaning exists in everyday folk use of the terms. Similarly, we must describe the folk terms in other languages and study the role of those (more obviously culturally specific) terms. In this case, we do not critique or improve the concepts but describe them as they are, problematic assumptions and all. Everyday terms play a role in psychological processes, and that role must be described – just as a belief in witches played a role in lives and deaths centuries ago and those beliefs must be studied, not taken as true.

On the other hand, we are not obligated to use those ordinary language terms, and the concepts that underlie them, in building scientific accounts of the events the words refer to. Instead, scientists need to *stipulate prescriptive* definitions for terms (whether labeled with the folk labels or with new ones), which dictate how the terms *ought* to be used for the purposes of a scientific theory of the events referred to. In this case, we must critique the proposed concepts and work to improve them. Even though folk concepts are not classical, scientists can create classical concepts by stipulating a prescriptive definition. An analogy can be seen in the difference between two scientific tasks. An anthropologist has the task of describing a particular society's taxonomy of local plants. A botanist has the very different task of developing a scientific taxonomy of those same plants. Botanists have created concepts for this task. The two taxonomies have turned out to be quite different. For emotions, psychologists have both the descrip-

tive and the prescriptive tasks, but it is important to see the difference.

The events that the words *emotion*, *anger, love* and so on refer to are real and important. People experience and witness and fall victim to and rejoice in these events. Studying them is essential to human progress. The question I raise is *how* to study these events.

In 1994, you became public enemy number 1 for the basic emotion research program. In "Is there universal recognition of emotion from facial expression? A review of the cross-cultural studies" (*Psychological Bulletin)*, you argued that the evidence of universality of facial expressions, hailed up to that point as the strongest form of evidence for basic emotion theory, was bogus. Can you summarize what were your main complaints about the sort of facial expression research conducted by basic emotion theorists? Do you regret the tone that your exchanges with Ekman took in the following years?

When I moved to UBC as an Assistant Professor, I started teaching a course on emotion. Like other emotion researchers at that time, I taught students about facial expressions, highlighting the Ekman-Friesen-Sorenson research in the highlands of Papua New Guinea. This team had trekked there to find a society relatively isolated from Americans and Europeans. Despite their isolation, the Papua New Guineans recognized the same emotions from facial expressions as did Europeans and Americans – or so it seemed. This evidence had quickly made its way into the textbooks as providing strong support for basic emotion theory. To teach this material, I had the students in my class act as participants in classroom demonstrations of the research methods. To my surprise, it quickly became apparent that the results depended on the exact details of the study. I could show a photo of a facial expression and write a list of emotion terms on the chalkboard; students agreed on the emotion the face conveyed. But then, as the students watched, I could erase one term and add another, and the students would agree on a different emotion for the same face. So, I read the literature more carefully, did studies on methodological choices, and wrote the paper you referred to.

Subsequently, issues of method appeared to be even more troublesome than I had originally thought. For example, consider the commonly used multiple-choice response format. With that format, Nicole Nelson in my lab found that native speakers of English agree that a novel facial expression (one that no one has suggested is a signal of any emotion) conveys the emotion of "pax" –- even though "pax" is a made-up word (Nelson & Russell, 2016; in press). So, we have to wonder just what conclusion follows when the same response format is used to show that people agree that, say, a nose scrunch conveys the emotion of disgust. Another aspect of method commonly used is to show observers many different expressions. With one set of prior expressions, the nose scrunch is consensually found to convey disgust, but with a different set of prior expressions, the same nose scrunch is consensually found to convey anger (even when the label *disgust* is one of the alternatives available on the response format in both cases.) As a result of these methodological obstacles, the substantive issues remained unresolved. A project I'm involved with recently sent a team of a psychologist (Carlos Crivelli) and an anthropologist (Sergio Jarillo) back to Papua New Guinea to carry out studies similar to those of the Ekman-Friesen-Sorenson expedition. Using a range of methods, these researchers found results that, so far, fail to support basic emotion theory. (See, for example, Crivelli et al., 2016)

Regret the tone? Not at all. Everyone concerned did their job of articulating their point of view. We need more such debates.

In your recent debate on facial expression with Keltner, Cordaro and Fridlund published in *Emotion Researcher,* it became apparent that there is more agreement between opposing research programs on the nature and function of facial expressions now than there was in the early 1990s. What are the outstanding

matters of contention concerning the universality of facial expressions? Finally, do you find that these debates lead to genuine progress? If not, what is the main obstacle standing in the way of progress?

That emotions produce (i.e., cause) facial expressions and that humans panculturally interpret facial expressions as conveying specific emotions – the account provided by basic emotion theory — remains contentious. For example, the theory that disgust makes you reflexively scrunch your nose, and that humans (whatever their culture) recognize disgust from the scrunched nose (whatever the context) remains controversial. Thus, the most fundamental issues in this area of research remain unresolved.

The evolutionary theory offered by Alan Fridlund and even the theory offered by Dacher Keltner and Dan Cordaro are noticeably different from the theory of Tomkins, Ekman, and Izard. Still, the Keltner-Cordaro theory falls within the basic emotion research program because it analyzes the human emotional repertoire in terms of a limited number of discrete pre-packaged emotional responses, some of which include a universal signaling system. The issue we discussed here earlier concerned the interpretation of facial expressions (commonly called recognition or decoding), and there is complementary evidence (gathered for example by Jose Miguel Fernandez Dols) on the production of facial expressions during emotional states (also called encoding). Enough evidence on both interpretation and production speaks against the basic emotion program that it is time to pursue alternatives. My alternative view is that there are an uncountable number of different emotional episodes, most of which are assembled on the fly in a way highly sensitive to context, and that there is no universal emotion signaling system (Russell, 2003).

Genuine progress? I don't see great progress, but then science can be frustratingly slow. Old flawed methods continue to be used. If the basic- emotion approach to facial expressions fails, we are still left with the questions of why people move their faces as they do and how observers interpret facial movements. So, we're back to square one, albeit now with a good number of alternative proposals to consider.

I believe that progress in the study of emotion is slowed by conceptual vagueness. Vague non-quantitative statements based on fuzzy concepts and incomplete theories do not lend themselves to rigorous testing with definitive conclusions. As a result, our accounts are less data driven than they should be. Theories linger. For example, consider the hypothesis that "disgust makes you scrunch your nose." Imagine a study that finds only a minority of disgusted people scrunching their noses. This evidence might be dismissed by an advocate for basic emotion theory on the grounds that some people did scrunch their nose, that those who did not were not intensely disgusted, or that their nose scrunch was inhibited. The problem is that the original hypothesis did not specify how many disgusted people are predicted to scrunch their noses. Nor did it specify in testable terms just what disgust is (subjective conscious experience? the cause of the subjective experience? a neural event?). No clear assessment of "intensity" has been developed (although self-report scales exist, they are sometimes dismissed as unreliable and seem to presuppose that disgust is something reportable). No complementary theory of the circumstances in which the nose scrunch is or is not inhibited has been developed. As a result, one can continue to believe the hypothesis whatever the evidence.

I used basic emotion theory as an illustration here because it is the dominant theory in affective science, but conceptual vagueness and incomplete theories are widespread. Earlier, I suggested that the adult emotion taxonomy results from both preparedness and learning. That claim provides no clear predictions and is consistent with any set of empirical findings. I tried to move toward greater precision by stipulating a definition for "core affect," but much remains unspecified and incomplete about that concept too.

In 1999, you and Lisa Barrett published "Core affect, prototypical emotional episodes, and other things called *emotion*: Dissecting the elephant" (J*ournal of Personality and Social Psychology*), a first step towards the development of psychological constructionism. In the article, you explored the relation between what you called 'core affect' and what you called 'prototypical emotion episodes'. What is your current understanding of such relation? How does the 1999 model differ from the circumplex model you presented in 1980?

This article was invited by the journal's editor, Ed Diener, and gave us an opportunity to connect the affect circumplex with the script account of emotion concepts. Lisa and I had concluded that mounting evidence challenged basic emotion theory. We could begin to develop an alternative.

Our alternative began by interpreting what the affect circumplex represented as *core affect*. We used the term *core affect* because we could then stipulate its meaning: the neurophysiological state that is typically available to consciousness as felt variations in hedonic valence (pleasure-displeasure) and degree of arousal: feeling good or bad, energized or enervated. The circumplex dimensions of pleasure and arousal are dimensions of subjective experience of one's internal state, often felt in an integrated fashion, seen especially clearly in moods and emotions, but, importantly, available (although not always attended to) at all times. Thus, core affect is important in contexts we might not call emotional, as in vague moods or when feeling ill or when we seek to regulate core affect: look for some fun, seek a place to relax, avoid an acquaintance who is boring, or have a coffee to perk up. (Many psychologists are reluctant to talk about subjective experience, perhaps a leftover from Behaviorism. But I think consciousness is a natural process as much subject to scientific scrutiny as any other.) Core affect is what was captured by the 1980 circumplex model.

Core affect is an aspect of core self. We distinguished core affect from affective judgments about the external world. Although core affect and such judgments often go hand in hand, they are separable, as when we feel core affect for no known reason (I can wake up simply feeling bad without knowing why and without judging anything). Conversely, we sometimes make affective judgments without much feeling (I can judge an ancient battle as sad without actually feeling sad).

The concept of core affect puts that subjective feeling at the heart of mood, emotion, and other processes. Core affect is one of the component parts of emotion episodes, which also include appraisals, behavioral and peripheral physiological changes, expressive changes, neural changes and so on. A caveat here is that evidence that emotion concepts are scripts lacking necessary or sufficient features suggested that not even core affect is defining of everyday concepts. In fear, for example, we prototypically feel bad and highly aroused. On the other hand, we can enjoy a horror movie or a dangerous sport and still call the experience fear. Such episodes suggest the existence of fear episodes without the typical core affect. (Presumably, enough other components resemble the fear script for such episodes to count as fear.) Cases of fear that include feeling bad and aroused resemble the script more closely than do cases lacking this core affect, all else equal, and are thus more prototypical. (The same variability exists for other components of the fear script: episodes lacking flight, for example, can still count as fear if enough other components resemble the script.)

This caveat has to do with what counts as a member of an everyday category. These matters of definition aside, core affect is a pervasive process. Core affect gives emotional episodes their heat, their raw feeling. Events, either directly or as interpreted, change core affect. Core affect, in turn, can guide information processing (as in mood-congruent judgments and memory) and behavior (we are motivated to act to feel good or avoid feeling bad; our plans for action

take into account how much energy we feel we have).

In 2003, you published your influential "Core affect and the psychological construction of emotion" (*Psychological Review*), which officially launched psychological constructionism as a scientific research program. What are the main tenets of psychological constructionism? Can psychological constructionism be integrated with other research programs, and if so how?

The notion of psychological construction begins in the skepticism about the main way in which emotions have been conceptualized over the centuries, borrowing its key terms from fuzzy everyday talk, not always distinguishing concepts from the events they are concepts of, and neglecting developmental, individual, and cultural differences in those concepts. I had specific concerns about the dominant theory of emotions – basic emotion theory – which is a modern articulation of the centuries-old folk view of emotion. I criticized basic emotion theory for its reliance on flawed evidence of universality for facial expressions. I was also aware of controversy surrounding the claim of patterns of activation in the peripheral nervous system that corresponded to the theorized basic emotions. There was mounting evidence that it is rare that a stimulus simply and automatically triggers an emotion, but that a considerable amount of appraisal and attribution is typically required. And, finally, simple observations indicated a weak relation between emotion and overt instrumental behavior.

Psychological construction starts with different assumptions. The set of events categorized in everyday language as emotion or fear or anger and so on have no constituent operations that are necessary and sufficient. Of course, the brain is doing the work, but most emotional episodes are not products of neural modules; they are not hardwired response packages. The set of episodes labeled, in English, as "fear" is a heterogeneous set of events that bear only a family resemblance to one another. By "heterogeneous," I mean that the set includes reflexes but also episodes that are highly sensitive to the immediate circumstances, as interpreted, and what the person brings to the situation. As a result, the set includes an uncountable variety of specific responses to those circumstances. The set called "emotion" includes all the variability of its subordinate categories (fear, anger and so on). Emotion includes such a great variety of responses that no one theory will capture them all, short of all of psychology. Thus, the lay word *emotion* does not capture a qualitatively different domain for study.

My alternative assumption is that the events characterized in folk terms are not themselves basic features of the mind but are constructed from more basic psychological operations: fear is not a basic operation but is constructed from more basic operations that are not unique to emotion.

A science of emotional episodes needs more sharply defined technical concepts that lend themselves to rigorous testing. We need to identify the basic operations that constitute emotional episodes, and progress has been made in doing so. Most affective scientists now agree on the "multi-componential nature" of emotional episodes: An emotional episode typically consists of coordinated components, such as appraisals, attributions, changes in peripheral physiology, changes in face and voice, subjective experiences, overt behavior. The question is how these components are related to each other.

One of the most surprising findings of research on emotion is the weakness of the correlations among these components. So, psychological construction also starts with the assumption that components are not pre-packaged. Instead, the weakness of the correlations among components suggest that each component is best treated as its own
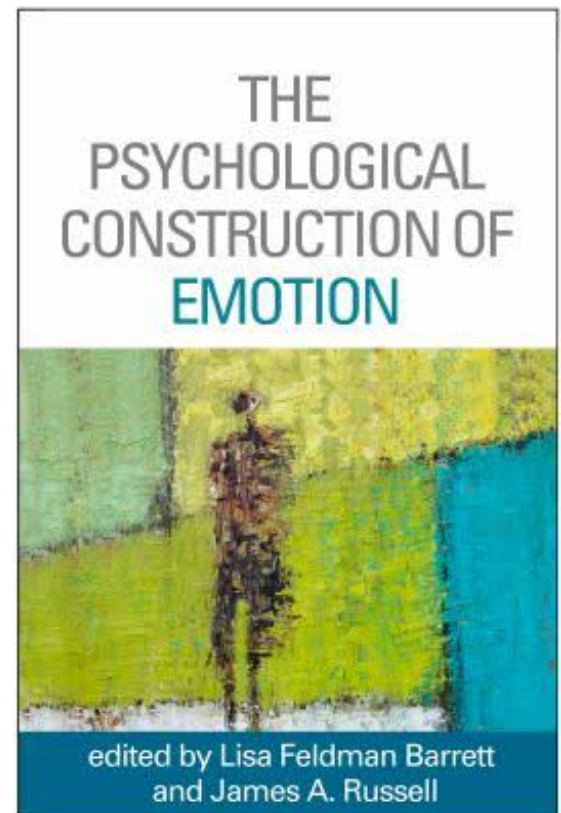
process, its own causal chain of events. (The illusion that the components are strongly linked may stem from a comparison of the extremely prototypical case with its opposite: extreme fear of the bear in the woods might have all the prototypical components co-occurring when compared to a state of serenity. The weakness of the correlations shows up when a broader sample of cases is studied.)

The links are weak because they are not pre-determined. Instead, each component depends on circumstances. So, on a psychological construction account, when some danger occurs and a fear episode is constructed, each component process proceeds somewhat on its own. Perceptual-cognitive processes monitor the situation. Part of perception is moving the head and face to see better; hence the widening eyes part of the "fear expression" might occur if the danger is something to be seen but not otherwise. Behavioral processes typically include goal setting, making plans to achieve the goal, and executing the plan while monitoring progress. Peripheral physiology is adjusted as behavior is prepared and executed. If the danger is a bear, you might prepare to flee, but if the danger is failing an exam, you might sit down to study, maybe. If the danger is in the distant future, you might do nothing immediately. Peripheral physiological changes differ in these different cases. We sometimes monitor these processes and interpret our own state, as in "I'm scared," but sometimes we don't or not until much later, and sometimes we get it wrong.

Since the 2003 article, various researchers can be associated with psychological construction besides Lisa Barrett and myself: Jose Miguel Fernandez Dols, Jerry Clore, Andrew Ortony, Wil Cunningham, Kristen Lindquist, Sherri Widen, and Joe LeDoux, for example. These researchers are of course developing their own ideas, but their accounts bear a family resemblance.

On integration, the science of emotion suffers from being divided into camps and disciplines. I think that integration is the next big item on our agenda. Colleagues within the basic emotion program are thinking of how to integrate evolutionary ideas with cultural differences. The goal of integrating psychological construction with other research programs is the important next step on my agenda. How? That remains to be seen, but Lisa and I are thinking about it, and we edited a book (*The Psychological Construction of Emotion*) with that as one of its themes. I know that others are thinking about it as well: Jim Averill working from a social constructionist perspective, Agnes Moors from an appraisal theory and dual-process action theory perspective.

You have been, jointly with Lisa Barrett, the first editor of *Emotion Review*, which you edited on your own for 3 years after Lisa left the editorship, and was taken over by Christine Harris in 2015. The *Emotion Review* has been very successful, as testified by its most recent IF factor of 4.730, which gives it a 12/129 ranking in Psychology, Multidisciplinary. How was the experience of being an editor for you? What are you most proud of with respect to the journal?

Lisa and I had the idea of an emotion journal that would focus on conceptual issues, be open to all viewpoints, and be a venue for confrontation of disparate theories. We hoped for genuine dialogue across disciplines. I am proud that we got just such a journal started. I greatly enjoyed the experience, interacting with people from different disciplines and countries, and with different concerns and viewpoints. My hope is that, for new ideas and analyses on emotion, *Emotion Review* comes to be preferred as the outlet over even a top journal in the author's home discipline.

You are one of the most cited affective scientists in the world, with 43,462 total citations, and an h-index of 72 and an i10-index of 139. Congratulations about that! Do you always have a sense that one of your papers will be a hit once you complete it? Do you think you best work is your most cited work, or is there a less known side of your research that you would like to be better known?

Thank you, Andrea. (But remember that you have to divide those numbers by 43, which is the number of years I've

been publishing.) When I submit a paper, I am not thinking about a "hit," but about how to deal with the inevitable negative reviews and rejections. I have a few pieces that I thought presented interesting ideas but that didn't catch much attention, but then maybe they weren't so interesting.

Can you describe your typical workday?

Long ago, to find some quiet time away from my children, I developed the habit of getting up early. When I was chair of the psychology department at Boston College, I found that an email at 4 am got the attention of my colleagues. I no longer work after late afternoon, but get some fresh air, exercise, read (fiction), listen to music, or watch old movies. These days, I waste a lot of time scanning the internet for news about our troubled world. Humans cause so much trouble; someone should study them.

Are there any aspects of academic psychology that you think would benefit from major changes, from the way we teach, to the way we recruit students and colleagues, to the way we tenure, to the way we allocate grants?

The way that the academy is divided into disciplines is an historical accident, and we would benefit from fewer barriers and more interdisciplinary collaboration. Even within a discipline, we need to reconcile our differences more effectively. We need to state our disagreements clearly, listen to the other side, and address their points directly.

My experience suggests that universities are lucky to have us as teachers and department citizens. My colleagues genuinely care about teaching, about their students, and about their colleagues. I wish that the tenure process, as it is in the USA, were different, with multiple paths rather than publish-or-perish. I wish that reviewers and editors in the peer review process did not see their reviews as an opportunity to increase the number of citations to their own articles.

But my biggest complaint is with the funding situation. Along with Sherri Widen, I spent at least two full years applying to various agencies for grant funds, to no avail. Colleagues have told me similar stories. My experience on various funding agency panels is that many proposals are good, and so funding only a small percentage of good proposals is a shame. Much grant proposal writing is wasted effort. That effort might be better spent actually doing research. For example, psychology is supposedly undergoing a "replication crisis." Perhaps more research should be replicated in other labs before it is published.

What are you working on these days?

I have been lucky to work with some very talented students. Recent students (Sherri Widen, Mary Kayyal, Nicole Nelson) are developmental psychologists, and I continue to follow their lead in research on children's understanding of emotion. A current student (Dolichan Kollareth) is interested in moral emotions and in cultural differences. With Carlos Crivelli and Jose Miguel Fernandez Dols, I'm looking at cultural differences in interpretation of facial expressions. My bigger project, though, is the "greater constructionist project," which has the goal of integrating psychological construction with other research programs on emotion. I'm optimistic that integration is possible with appraisal theories. I'm working with Agnes Moors on some of that. I'm working with Disa Sauter to find areas of agreement with the basic emotion approach.

What are the most pressing questions we should try to answer in contemporary affective science?

We need to move away from the folk preconceptions about emotion and toward more clearly defined and testable propositions. Emotion has a bad reputation (as responsible for bad decisions and actions) that might not be deserved. As a next step, we need to find ways to integrate the different conceptual frameworks that now guide research and application. History suggests that no one of the current frameworks (including mine) will be the final word, but each is based on a valuable insight. Once we have more clearly defined concepts and testable propositions, evidence will more forcefully compel progress.

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The Temporal Dynamics of Facial Expressions

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Or Why Martin Scorsese Didn't Look Happy During the 2003 Oscars Ceremony

October 2016 – Join me in exploring one of the most extraordinary aspects of human life: the ability to express emotions. As a social species, we have developed rich capacities to interact with each other. From our earliest age, social relationships dominate our lives and contribute to making us who we are. Ingrained with the need for social connection (Baumeister & Leary, 1995), emotions help us to communicate with others, judge their intentions and negotiate our behavioral responses. What seems like an effortless skill involves a range of complex and relational processes (Kappas & Descóteaux, 2003). A particularly intricate aspect of human communication is its dynamic nature: rather than being like a single snapshot, emotional expressions change over time in response to information dynamically gleaned from the environment. As we cannot press a 'Pause' button to capture another's emotional expression in a vacuum, we need to learn how to interpret expressions in their changing context.

Unfortunately, this temporal quality of facial displays has been frequently overlooked in emotion research, most of which has relied on the use of still images or photographs. Such stimuli often consist of actors portraying high-intensity emotions based on pre-defined and stereotypical patterns of facial actions (i.e., Pictures of Facial Affect by Ekman & Friesen, 1976; NimStim Set of Facial Expressions by Tottenham et al., 2009; Karolinska Directed Emotional Faces by Goeleven, de Raedt, Leyman, & Verschuere, 2008). These commonly include the basic six emotions of happiness, anger, fear, sadness, disgust and surprise. Whilst static prototypes are well recognized due to their simplified and amplified nature, they hardly ever occur in real life. In addition, they impose a standard where correct emotion classification consists of the assignment of emotion category labels as intended by the researcher. This approach targets mainly questions about what the facial expression is *supposed* to portray, rather than what we *really* think that the person felt at the moment of the expression.

The latter aspect is particularly intriguing. Is it possible to 'recognize' an expression as the prototypical exemplar of a particular emotion, and yet have the impression that the person is feeling something different? Take the smile which is undoubtedly classified universally as a happy expression (Russell, 1994). Yet we all know that not all smiles are happy; they can be put on in the absence of any such positive emotion (i.e., politeness, appeasement) or to conceal negative feelings/motives (i.e., embarrassment, contempt, dominance; Ambadar, Cohn, & Reed, 2009; Niedenthal, Mermillod, Maringer, & & Hess, 2010).

In order to distinguish between so-called 'genuinely felt' and 'unfelt/false' smiles (see Fridlund, 1994, for a different conceptualisation), Ekman and Friesen (1982) suggested several behavioral indicators. The most well-known of these is the Duchenne marker, which is indicated by a crinkling of the skin around the eyes and is said to accompany or constitute a genuine, happiness-expressing smile (Ekman, Davidson, & Friesen, 1990). Much previous work has shown that we tend to perceive such a smile as expressing a felt positive emotion (e.g., Frank, Ekman, & Friesen, 1993; Krumhuber, Likowski, & Weyers, for a meta-analysis see Gunnery & Ruben, 2016).

In my own research, I wanted to find out whether this impression could change when dynamic information is added. To illustrate this idea, an example from Hollywood might prove valuable. At the Oscars ceremony in 2003, one of the favorites for the award of best director was Martin Scorsese for his epic drama 'Gangs of New York'. The film was nominated in 10 categories, making it likely that Scorsese would walk home with several golden statues. When

Roman Polanski was announced as the winner of the award for best director, Scorsese's response was that of fierce disappointment, up until the moment when he realized that he was on camera. If you watch the video, you can see his expression change within milliseconds of the announcement to that of a happy smile (see 1m 06s).

One could debate whether his smile is a Duchenne smile (see Gunnery & Hall, 2014; Krumhuber & Manstead, 2009, for evidence questioning the reliability of the Duchenne marker as a true indicator of happiness). Martin Scorsese's motivations here are obviously complex. Based on the speed with which his smile unfolds, however, it seems improbable that happiness would have been high on his list of priorities! It simply looks too quick to reflect genuinely felt enjoyment of his rival's success.

In an attempt to test whether the perception of Martin's dynamic smile relates to a more general phenomenon, I created video-clips of smile expressions that systematically differed in the duration with which they unfolded (onset), peaked at their apex, or returned from peak to neutral (offset; based on Ekman & Friesen, 1982). When I showed them to people and asked them to rate how genuine they thought the smiles were, their ratings systematically varied with the dynamic trajectory of the smiles. Specifically, smiles that unfolded quickly (that is, those with a short onset) and disappeared abruptly (those with a short offset) made the target's smile appear less authentic and less believable (Krumhuber & Kappas, 2005). These 'dynamic fake' smiles also led people to assign lower ratings of trustworthiness, attractiveness, and flirtatiousness to the smiling person (Krumhuber, Manstead, & Kappas, 2007).

In subsequent work, I found that dynamic information affects people's decisions and behavioral intentions. For example, using a simulated job interview scenario, interviewees displaying smiles with long onset and offset durations were evaluated higher on job-related traits such as competence and motivation, and judged to be more likely to be short-listed and selected for a job (Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2009). Furthermore, people were more likely to trust and cooperate with others in economic games when they displayed such dynamic authentic smiles rather than neutral expressions or dynamic fake smiles (Krumhuber, Manstead, Cosker, Marshall, Rosin, & Kappas, 2007).

From these findings two conclusions can be drawn: First, people go beyond what is stereotypically recognized or thought of as an emotion. This suggests that the perception of visual properties of an expression (e.g. smiling mouth, Duchenne marker) is distinct from the perception of affect-specific information about what the sender really feels. Hence, emotion recognition (i.e. accurate classification) does not equal emotion interpretation; a crucial distinction that is missing in Basic Emotion Theory which assumes a direct link between expressive physical features and affective states (Calvo & Nummenmaa, 2016). Second, the dynamic quality of facial displays is used in the course of their display to discern the affective meaning of expressions (i.e. internal states of the expresser).

In line with work from other research labs over the past few years, there is much evidence to suggest that facial motion provides information over and above that contained in static emotional displays (for a review on the effects of dynamic aspects of facial expressions, see Krumhuber, Kappas, & Manstead, 2013; Krumhuber & Skora, in press). In addition to the speed with which parts of the face move, the temporal sequence of facial expressions is a critical factor in the expression of emotion. This aspect is particularly acknowledged by componential theories of emotions (Smith & Scott, 1997) which regard individual elements of expressions as emerging dynamic properties. Studies that have applied a fine-grained behavioral analysis to the time course of expressions (using the Facial Action Coding System, Ekman, Friesen, & Hager, 2002) suggest that facial actions indeed unfold sequentially and converge toward the apex in an asynchronous manner (Fiorentini, Schmidt, & Viviani, 2012; Krumhuber & Scherer, 2011; With & Kaiser, 2011). Furthermore, such sequential temporal patterns shape emotion judgements made by observers (Jack, Garrod, & Schyns, 2014; Krumhuber & Scherer, 2016). There is more work to be done in this area, much of which will be achieved using machine recognition to extract the dynamic structure of facial expressions (Pantic, 2009).

For the foreseeable future, facial motion promises to remain a topic of scientific interest. With computing entering the social domain, it is possible to communicate not only with other human beings, but increasingly artificial entities. These can be computer-animated characters (e.g. Lara Croft, Shodan, Master Chief), robots (e.g. Ishiguro's

Geminoid, Hanson's Einstein, Breazeal's Kismet) or even virtual agents (e.g. Pelachaud's Greta, ICT's SimCoach). Whether embodied or digital, their appearance and life-like demeanor is becoming more and more realistic (Küster, Krumhuber, & Kappas, 2014). To gain users' acceptance, our responses are likely to be guided by the relevant social cues they produce. Facial expressions are an essential ingredient in revealing a character's personality, thoughts, and feelings. However, only if they appear convincing and authentic will we feel comfortable in interaction.

From previous research, we know that people's affinity to artificial entities may not linearly increase with the degree of human-likeness (MacDorman, Green, Ho, & Koch, 2009). That is, more humanlike appearance does not always lead to more favorable evaluations. In fact, such characters can be subject to the so-called 'Uncanny Valley' effect (Mori, 2012) when their appearance falls short of emulating those of actual human beings. As a result, imperfections of human appearance can become 'uncanny' and repulsive. Classic examples of this can be found in CGI-heavy animated films such as *The Polar Express* or *The Final Fantasy: The Spirits Within*, which many viewers find disturbing and off-putting due to their 'creepy' characters (e.g., Geller, 2008). This mismatch between appearance and behavior is particularly evident when movement is involved, which can violate perceptual expectations (Saygin, Chaminade, Ishiguro, Driver, & Frith, 2012). To avoid potential pitfalls, it will be important to establish how emotions should be expressed if we are to create emotionally-appealing and usable systems. The temporal features of facial expressions can provide crucial insight into this process by allowing us to infer not only the presence of an emotional signal but also its meaning.

Are you interested in dynamic facial expression research?

Would you like to use dynamic expressions in your own research? Not sure where to find the appropriate stimuli? In a forthcoming article to be published in *Emotion Review*, we (Krumhuber, Skora, Küster, & Fou) provide a systematic overview of 22 publically-available databases of dynamic facial expressions and compare their conceptual and practical features, which can provide guidance as to which database to use.

If you want to create your own dynamic stimuli using easy-to-use facial animation software, you can use FACSGen 2.0 (Krumhuber, Tamarit, Roesch, & Scherer, 2012), which allows the production of static and dynamic facial expressions based on the Facial Action Coding System (FACS, Ekman, Friesen, & Hager, 2002). Unfortunately, due to ongoing licensing issues, the software is not publically available. To use it, please contact David Sander (david.sander@unige.ch) or Didier Grandjean (Didier.grandjean@unige.ch) to discuss your case.

For readers with more advanced technical skills (e.g. computer scientists or engineers), the D3DFACS dataset (Cosker, Krumhuber, & Hilton, 2011) might be of interest: it is composed of 3D scans of real human faces, contains over 500 dynamic facial action sequences, and is fully FACS coded. The dataset can be used to build realistic facial animation models and is also currently used in the commercial sector by visual effects companies. For more information and in order to obtain access, please contact http://www.cs.bath.ac.uk/~dpc/D3DFACS/.

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