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Emotion Generation and Emotion Regulation: One or Two Depends on Your Point of View

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Abstract

Emotion regulation has the odd distinction of being a wildly popular construct whose scientific existence is in considerable doubt. In this article, we discuss the confusion about whether emotion generation and emotion regulation can and should be distinguished from one another. We describe a continuum of perspectives on emotion, and highlight how different (often mutually incompatible) perspectives on emotion lead to different views about whether emotion generation and emotion regulation can be usefully distinguished. We argue that making differences in perspective explicit serves the function of allowing researchers with different theoretical commitments to collaborate productively despite seemingly insurmountable differences in terminology and methods.

Keywords
emotion, emotion regulation

Have you ever felt so sad that you had to force yourself to put on a smile when interacting with others? Or felt so angry with someone in authority that you had to inhibit the urge to tell him what you really thought of him? Or felt so amused by an inappropriate comment that you had to bite your lip to keep from laughing out loud? If your answer to any of these questions is "yes," then you know first hand about *emotion regulation*, which refers to the things we do to influence which emotions we have, when we have them, and how we experience and express them (Gross, 1998.)

Interest in emotion regulation dates back to the dawn of history. Early philosophical and religious writings are replete with discussions of how to diminish or amplify, and shorten or extend, emotional responses. For example, the great Stoic philosopher Epictetus offered tips on how to manage unhelpful emotions, and his advice continues to have a contemporary ring nearly two millennia later.

In the modern era within the field of psychology, emotion regulation has been a focus in the study of psychological defenses (Freud, 1926/1959), stress and coping (Lazarus, 1966), attachment (Bowlby, 1969), and self regulation (Mischel, Shoda, & Rodriguez, 1989). This longstanding interest in emotion regulation has dramatically increased over the past two decades (Gross, 2007, 2010). Until the early 1990s, few publications contained the phrase "emotion regulation." For example, in 1990, there were only four such citations. Since this time, there has been an astonishing increase in citations. In 2005, for example, 671 publications contained the phrase "emotion regulation." While citation counts are a crude and imperfect metric at best, the 150-fold plus increase in citations over this 15-year period clearly reflects the growing popularity of this topic.

Popularity can be a wonderful thing, but it has its own challenges. Despite increased attention, there remains confusion about the nature of the processes that regulate emotion, and even whether such processes are meaningfully distinct from those that are typically considered to *constitute* emotion proper. In this article, we argue that such disagreements reside in the

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different ways in which *emotion* is scientifically defined. To make such considerations explicit, we first arrange different scientific perspectives on emotion along a loose continuum, from those that characterize emotions as biologically defined entities in need of regulation (e.g., basic emotion and some appraisal perspectives) to those that characterize emotions as constructed mental events that cannot, themselves, be acted upon by other processes (e.g., constructionist perspectives). We then consider both similarities and differences in how these perspectives approach the concept of emotion regulation. Finally, we discuss the broader implications of divergent views of emotion and emotion regulation for the field of affective science.

Perspectives on Emotion

It is widely agreed that *emotion* refers to a collection of psychological states that include subjective experience, expressive behavior (e.g., facial, bodily, verbal), and peripheral physiological responses (e.g., heart rate, respiration). It is also widely agreed that emotions are a central feature in any psychological model of the human mind. Beyond these two points of agreement, however, almost everything else seems to be subject to debate.

Some theorists view emotions as being characterized by unique and relatively consistent patterns of subjective, expressive, and physiological responses. Others note the surprisingly loose coupling among emotion response components, and highlight the variability in responses associated with any particular emotion from one occasion to the next, as well as the similarity in responses associated with ostensibly different emotions. Still others emphasize the idea that all mental states involve subjective experience, expressive behavior, and physiological responses, which suggests that these three responses do not really provide a unique definition of emotion per se. Other points of current controversy include what counts as an emotion, who has emotions (e.g., infants, nonhuman animals), and what the best methods are for studying emotion.

These differences in opinion and scientific emphasis are reflected in the wide range of available perspectives on emotion. To organize the myriad (and often contradictory) perspectives on emotion, we find it useful to consider a series of inter-related questions, the two most important of which are the following: (a) Are emotions special mental states that can be acted upon by other processes? (b) Are emotions themselves caused by distinct and specific processes? Some of the major responses to these—and related—questions are summarized in Table 1.

Table 1. Core assumptions of four emotion perspectives

	Basic	*Appraisal*	*Psychological construction*	*Social construction*
1. Are emotions unique mental states?	Yes	Yes	No	Varies by model
2. Are emotions caused by special mechanisms?	Yes (e.g., affect programs)	Varies by model	No (basic ingredients vary by specific model)	No
3. Is each emotion caused by a specific brain circuit?	Yes (subcortical circuit for each emotion)	No	No (distributed brain network for each ingredient)	No
4. Do emotions have unique manifestations (in face, voice, body state)?	Yes	Varies by model	No	No
5. Does each emotion have a unique response tendency?	Yes	In most models	No	No
6. Is experience a necessary feature of emotion?	Varies by model	Yes	Yes	No
7. What is universal?	Emotions are universal	Appraisals are universal	Psychological ingredients are universal	Influence of social context is universal
8. How important is variability in emotions?	Epiphenomenal	Varies by model	Emphasized	Present, but not central
9. Are emotions shared with non-human animals?	Yes	Some appraisals are shared	Affect is shared	No
10. How did the evolution shape emotions?	Specific emotions evolved	Cognitive appraisals evolved	Basic ingredients evolved	Cultural and social structure evolved

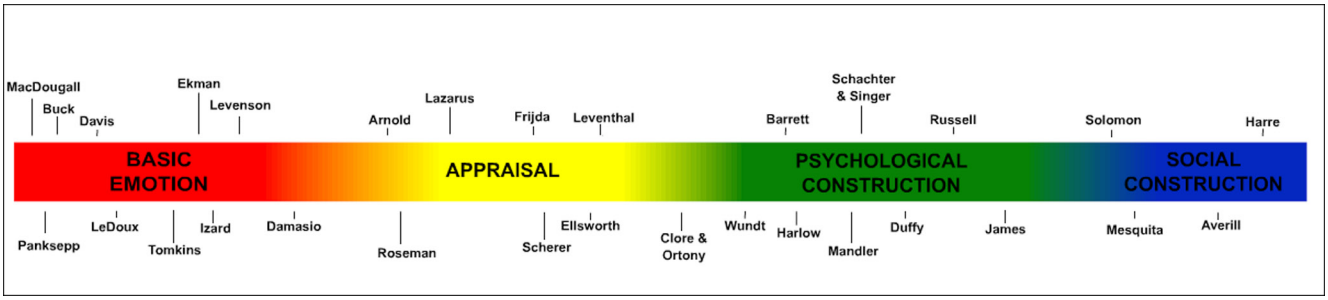

Figure 1. Perspectives on emotion can be loosely arranged along a continuum. We have populated this continuum with representative theorists/researchers drawn from the field of psychology. We distinguish four "zones": (1) basic emotion, in red, e.g., MacDougall (1908/1921), Panksepp (1998), Buck (1999), Davis (1992), LeDoux (2000), Tomkins (1962, 1963), Ekman (1972), Izard (1993), Levenson (1994), and Damasio (1999); (2) appraisal, in yellow, e.g., Arnold (1960a, 1960b), Roseman (1991), Lazarus (1991), Frijda (1986), Scherer (1984), Smith and Ellsworth (1985), Leventhal (1984), and Clore and Ortony (2008); (3) psychological construction, in green, e.g., Wundt (1897/1998), Barrett (2009), Harlow and Stagner (1933), Mandler (1975), Schachter and Singer (1962), Duffy (1941); Russell (2003), and James (1884); (4) social construction, in blue, e.g., Solomon (2003), Mesquita (2010), Averill (1980), and Harré (1986). Given space constraints, as well as the goals of this article, we have limited ourselves to a subset of the many theorists/researchers who might have been included on this continuum (e.g., those who only study one aspect of emotion were not included in this figure).

In Figure 1, we use these responses to place some of the major psychological approaches to emotion on a single continuum. Although the multidimensionality of this theoretical space is obvious (each question in Table 1—and many others besides—could each constitute a dimension), we find it helpful for our purposes in this article to employ a simplified unidimensional space. Each zone in Figure 1 represents certain assumptions about the nature of emotion, and as we will see in the following section, these differences have important implications for conceptions of emotion regulation. To anticipate, we will find that as we move from left to right along the continuum, the conceptual separation of emotion generation and emotion regulation becomes increasingly suspect.

Basic Emotion Models

At the far left of the continuum (Figure 1, in red), basic emotion models hold that emotion words such as "anger," sadness," and "fear" each name a unique mechanism that causes a unique mental state with unique measurable outcomes (see Table 1). In this view, there exist a limited number of biologically basic states that are unique in form, function, and cause from other states such as cognition and perception. Each putative basic emotion is a basic building block of the mind that cannot be decomposed into anything else. In most basic emotion models, each emotion is caused by a dedicated mechanism (a definable brain circuit or affect program) that produces a coordinated package of experiences, incipient response tendencies, expressive behaviors (e.g., facial expressions), and autonomic and neuroendocrine responses (for a basic emotion approach that does not presuppose dedicated emotion mechanisms, see Lewis, 2005). As we move to the right side of this zone, various processes (involving culture and cognition) are increasingly seen as modifying the antecedents and expressions of emotion.

Appraisal Models

A little further along this continuum (Figure 1, in yellow) we find the zone occupied by appraisal models. Here, emotion words still name privileged mental states that are unique in form, function, and cause from other mental states, but "anger," "sadness," "fear," and other emotion words do not name distinct, dedicated mental mechanisms per se (see Table 1). Some appraisal models (particularly those developed in the 1960s and 1970s) take "appraisals" to be specific cognitive antecedents of emotion that make meaning from the world. In these models, which are shown on the left side of the appraisal zone in Figure 1, appraisals are like a set of switches, which when configured in certain patterns, trigger biologically basic emotional responses characterized either by stereotyped outputs or by a strong and almost inescapable tendency to interact with the world in a particular way. As we move toward the middle of the appraisal zone, appraisals are viewed not as causes of (and logically separate from) emotion, but instead as constituents of emotion. Emotions, in turn, are thought of as loosely coordinated response tendencies that are configured in a contextually sensitive fashion. Here, emotions are associated with response tendencies that do not always come to fruition, but are instead characterized as dispositions to relate to the world in a particular way. At the right-most point in the appraisal zone, emotions are ways of experiencing the world. Here, appraisal models retain the assumption that emotions are distinct functional states, but emotions are increasingly viewed as emergent acts of meaning making. At this end, appraisals describe the content of that meaning

(cf. Barrett, Mesquita, Ochsner, & Gross, 2007). To be in a state of anger is to experience offense; to be in a state of sadness is to experience loss; and so on. These appraisal models tend to be agnostic as to the mechanistic causes of emotion, and do not presume that emotions occur as a set of stereotyped outputs—variability in emotional responding is expected.

Psychological Construction Models

In the next zone (Figure 1, in green), we find the terrain of psychological construction approaches to emotion. Here, emotions are not special mental states, unique in form, function, and cause from other mental states such as cognition and perception. This is because emotions are not "caused" by dedicated mechanisms. Instead, all mental states are seen as emerging from an ongoing, continually modified constructive process that involves more basic ingredients that are not specific to emotion (see Table 1). Psychological construction models treat emotions as folk categories, where each category is associated with a range of measurable outcomes. By some psychological construction accounts, emotions (like all mental states) are the emergent products of psychological ingredients—they are more than the sum of their parts—making these views continuous with descriptive appraisal accounts found to the very right of the yellow zone. Further along in the green zone (to the right), emotions are seen as being nothing more than their parts. Here, many investigations focus on one or more ingredients of the mind, leaving behind the concept of emotion altogether.

Social Construction Models

The right-most zone (Figure 1, in blue) is occupied by social construction models. Here, emotions are viewed as social artifacts or culturally-prescribed performances that are constituted by sociocultural factors, and constrained by participant roles as well as by the social context (see Table 1). Some social construction models (particularly in psychology) treat social configurations as triggers for basic emotional responses, much as early appraisal models conceived of appraisals as cognitive triggers of basic emotions. However, other models in this zone view emotions as sociocultural products that are prescribed by the social world and constructed by people, rather than by nature. Emotions are performances of culture, rather than internal mental states. Whether a socially constructed event is seen as an emotion (as opposed to some other kind of psychological event) depends on the network of social consequences it produces. To the extent that cognitive processes are involved as transmitters of cultural expectations and constraints, they are seen as learned, rather than given by nature (in contrast to some appraisal views), so that such cognitions vary from culture to culture. Both the mental and the behavioral components of emotion are thought to co-evolve as a function of local social meanings, and are considered primarily for their social function. Knowing the social script for anger allows one to be angry—to feel anger, and to enact the behaviors of anger (whatever they might be in a particular cultural context). Emotional meaning and distinctiveness derives from the emotion's functional significance within a particular social context.

Perspectives on Emotion Regulation

The different scientific approaches to emotion depicted in Figure 1 imply (or prescribe) different views on the viability of emotion regulation as a separate and meaningful set of processes. By considering each zone in turn, we hope to move past a simple "yes–no" response to the question of whether distinguishing emotion and emotion regulation is helpful, and consider what scientific utility this distinction might have from the perspective of various theoretical vantage points.

A Basic Emotion Perspective on Emotion Regulation

In the basic emotion portion of the conceptual terrain depicted in Figure 1, there is a principled distinction between emotion generation and emotion regulation, on the assumption that the two are biologically distinct. In its starkest form, objects in the world are thought to trigger subcortical generators in an obligatory way (e.g., Panksepp, 1998; see Figure 2 panel A). Emotion regulation refers to a separate set of processes that either stop the emotion from launching or prevent it from being expressed once it is triggered, primarily by cortical modulation of the subcortical circuits (in much the same way that the cortex inhibits other homeostatic behaviors that are initiated and represented subcortically).

From this perspective, it should be possible to more or less sharply distinguish the psychological and neural processes that are associated with emotion generation, on the one hand, and emotion regulation, on the other. It bears noting that the viability of sharply distinguishing between emotion generation and emotion regulation may, from a basic emotion perspective, differ by emotion. Thus, this distinction may be clear for the emotions seen as basic, but far less clear for more complex or nonbasic emotions.

In the right-most part of the basic emotion (red) zone, some models introduce the notion of pre-emptive regulation of emotion generation, or regulating the response before it is even triggered (by cognitive or cultural means). Basic emotion models that incorporate the idea of pre-emptive regulation are continuous with the appraisal models in the left-most aspect of the (yellow) appraisal zone.

An Appraisal Perspective on Emotion Regulation

In the appraisal zone, there begins to be a blurring of the boundaries between emotion generation and emotion regulation. There is no longer the assumption of a sharp separation between subcortical emotion generators and cortical control systems.

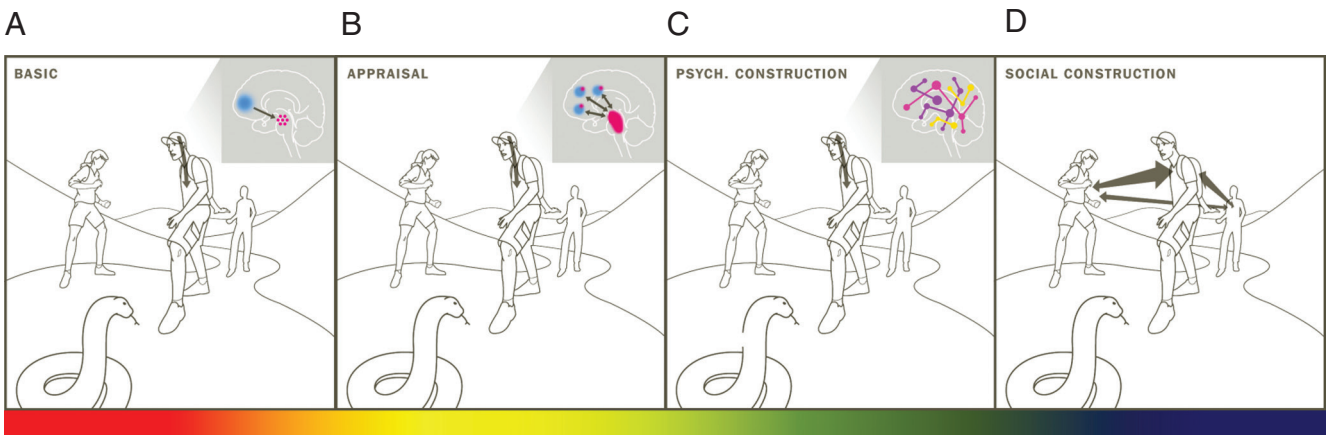

Figure 2. Schematic representations of four different perspectives on emotion generation and emotion regulation. Panels A and B: red represents emotion generation and blue represents emotion regulation. Panel C: different colors represent distributed networks for basic ingredients of the mind. Arrows depict the flow of information.

Instead, emotions are thought to be caused and modified by some combination of overlapping brain circuits (either subcortical or cortical; see Figure 2 panel B).

At the left side of the zone, the appraisal perspective holds that emotion arises in the context of a person-situation transaction that compels attention, has a particular meaning to an individual, and gives rise to a coordinated yet malleable multisystem response to the ongoing person-situation transaction (e.g., Ellsworth & Scherer, 2003; Lazarus, 1991). Appraisal models in the left-most part of the yellow zone see emotion regulatory acts as having their primary impact at different points in the emotion generative process depicted in Figure 3A (Gross, 2001). In Figure 3B, we have redrawn this situation–attention–appraisal–response sequence described above in order to highlight five points at which individuals can regulate their emotions (for a review, see Gross & Thompson, 2007).

Situation selection refers to the actions we take that make it more likely we will be in a situation we expect to give rise to the emotions we would like to have (or less likely that we will be in a situation that will give rise to emotions we would prefer not to have). *Situation modification* refers to efforts to directly change a situation so as to modify its emotional impact. *Attentional deployment* refers to influencing emotional responding by redirecting attention within a given situation. *Cognitive change* refers to changing one or more of one's appraisals in a way that alters the situation's emotional significance, by changing how one thinks either about the situation itself or about one's capacity to manage the demands it poses. Finally, *response modulation* refers to influencing experiential, behavioral, or physiological responses after response tendencies have already been initiated. For example, one may hide from another person the emotion one is feeling by inhibiting emotional behaviors (verbal and facial) that typically accompany that emotion.

Appraisal models in the right-most part of the yellow zone blur the distinction between emotion generation and emotion regulation even further. In these models, emotions emerge from a multitude of different perceptual and conceptual processes that are used to refine, situate, and represent affect (e.g., Clore & Ortony, 2008). Some of these processes are associative and automatic, whereas others are more rule-based and reflective, although they proceed in parallel and one cannot be said to be regulating the other. Emotions, as cognitively elaborated states of affective feeling, are tuned (and retuned) to the situational structure, but they are not regulated per se. In conceiving of

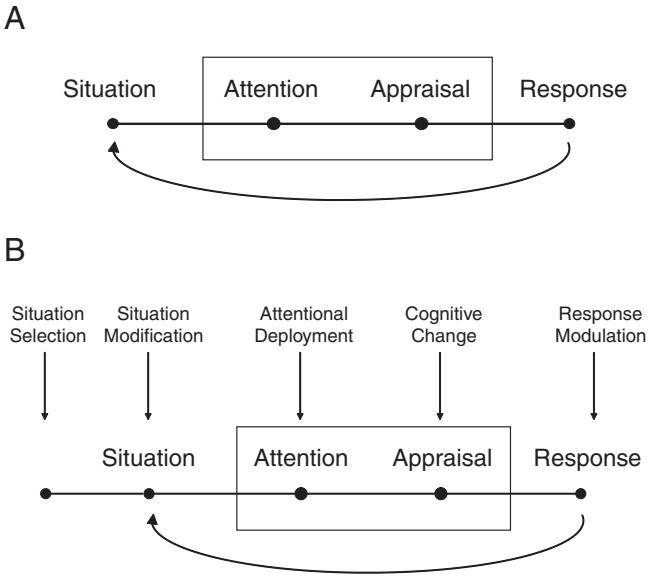

Figure 3. An appraisal perspective on emotion and emotion regulation. Panel A: The "modal model" of emotion with a situation–attention–appraisal–response sequence and the organismal "black box" interposed between situation and response (from Gross & Thompson, 2007). Panel B: A process model of emotion regulation that highlights five families of emotion regulation strategies (from Gross & Thompson, 2007).

emotions as affect that is interpreted within a cognitive-perceptual frame, these models are theoretically continuous with psychological construction models of emotion.

A Psychological Construction Perspective on Emotion Regulation

In the psychological construction portion of the conceptual terrain, it is increasingly difficult to distinguish emotion generation from emotion regulation. This is because emotions (like all mental events) are viewed as being continually constructed. From this vantage point, the segmentation of emotion "generative" from emotion "regulatory" processes appears arbitrary and provisional. Psychological ingredients, combining in various ways, are thought to be represented in the brain as distributed networks with cortical and subcortical contributions (Kober et al., 2008; see Figure 2 panel C). One primary ingredient in psychological construction models is some form of information from the body.[1] A second common ingredient is a process by which internal sensory or affective states are made meaningful as related to or caused by the external surroundings.[2]

The scientific viability of *emotion regulation* hinges on whether emotions have emergent properties. *Emergent* psychological construction models view emotions as being more than the sum of their parts, and leave open the possibility of more traditional conceptions of emotion regulation. Wundt (1897/1998), for example, wrote that emotions are emergent and he considered emotions (and all mental states) to be like hydrogen and oxygen atoms that combine to form a water molecule. Hydrogen is still hydrogen even when it is in a water molecule; oxygen is still oxygen. But when they come together to form a water molecule, they have features that neither one has alone.

If emotions work the same way, then emotion regulation might refer to modifying the ingredients and/or modifying the emergent products. For example, bodily responses or shifts in core affect (i.e., the first ingredient of emotion) can be regulated by psychological, chemical, or even physical interventions (e.g., exercise, sleep, physical touch). The knowledge used to make bodily states meaningful (i.e., the second ingredient) can also be regulated, presumably by all the factors that change the accessibility of such knowledge (e.g., automatic priming, deliberate retrieval, post-retrieval selection, or inhibition of knowledge) or its content (e.g., learning new conceptual content for emotion or rules for applying it). This can happen through rule-based deliberate learning, as in psychotherapy, or more automatically, through exposure to novel exemplars. The construction process itself can be regulated by directing the focus of goal-based attention, in that executive function plays a role in both affect regulation and knowledge development and use (Barrett, Tugade, & Engle, 2004). In addition, to the extent that the emergent products have properties not found in the ingredients alone, those products might be regulated by processes that are conventionally referred to as emotion regulation (such as those detailed above).

Elemental psychological construction models, on the other hand, ontologically reduce emotion to their more basic psychological ingredients (e.g., Duffy, 1957; James, 1884; Russell, 2003). From this vantage point, emotions cannot be regulated in any meaningful sense, but their ingredients can be regulated, so that emotions are constructed differently, or not at all (e.g., perceiving affect as a physical symptom rather than as a mental state). Yet, even an elemental psychological construction approach might not want to completely abandon the concept of emotion regulation. The distinction between emotion generation and emotion regulation might be useful and real in an ontologically subjective way, even if it does not reflect a biological distinction (Barrett, 2009). The generation–regulation distinction might lie in the subjective experience of agency or will. Emotion generation might refer to instances when there is no sense of agency in making an affective state meaningful, whereas regulation refers to instances that are accompanied by an experience of agency. To understand emotion regulation, then, is to understand the nature, causes, and functions of this phenomenological distinction.

A Social Construction Perspective on Emotion Regulation

In this portion of the conceptual terrain, emotions are not really entities to be regulated per se, because these models do not posit mechanisms "inside the head" (this being the key difference between social construction and appraisal views; see Figure 2 panel D). Instead, emotions are conceived of as actions (or dispositions towards actions) with their own regulatory function. The boundary between emotion generation and regulation therefore disappears in favor of regulation more generally. As mental (or behavioral) states, emotions themselves are held to be social constructions that function to regulate or shape the feelings and behaviors of those within a particular social context. Apparent instances of emotion regulation might thus be viewed as competing social strictures (e.g., the rule "Cry at funerals" conflicts with the rule "Men don't cry"). Another way of putting this idea is to say that emotion regulation can be viewed as a sequence of transactional emotion episodes within a social event or scene, where the unit of analysis is not a lone person but a person in the context of other people who are mutually influencing one another within the bounds of a social episode.

Similarities and Differences across Perspectives

As we have seen, some conceptions of emotion provide clear support for the utility of emotion regulation as distinct and important scientific construct. Others do not. Models that treat emotions as special, discrete states (with or without clear subcortical causes) are most likely to embrace the distinction between emotion generation and regulation in mechanistic

terms. Models that view emotions as continually emergent and constructed treat the distinction as useful in a descriptive and communicative, but not in a mechanistic, way. Models that reduce emotion to their parts (with more or less emphasis on the body vs. the social constraints) are less likely to make the generation–regulation distinction in the first place. What this suggests is that the concept of emotion regulation is part and parcel of the broader framework one uses for understanding how emotions emerge (and re-emerge) across successive moments in real time.

As we consider the four zones presented in Figure 1, we can see that many—but not all—of the diverse perspectives represented here are compatible with some notion of emotion regulation, even if it does not survive in its most stereotyped form. For a basic emotion theorist, emotion regulation refers to actions that influence the output of the emotion programs. As the inputs become similarly regulated, these models blend into the more traditional appraisal approach to emotion. For a classical appraisal theorist, emotion regulation consists of changing the magnitude or quality of an emotional response, either before or after the emotional response has begun to unfold. As appraisal models become more emergent, however, and appraisals come to reflect the content of emotion rather than the mechanisms by which emotions are generated, they begin to blend with psychological construction models. For the prototypical psychological constructionist, emotion regulation refers principally to manipulating the elements that will in combination constitute emotion (although emergent models do seem to allow for the possibility that there is a mental state, itself, to be regulated). As the emphasis shifts from more internal processes to external situational circumstances (or affordances), social constructionists are less concerned with emotion as a mental state and more concerned with emotions as scripts that regulate behavior.

A related point of difference across perspectives is whether it is useful to distinguish between relatively "early" versus "late" forms of emotion regulation. This distinction hinges on the idea that an emotion gathers force over time. From a basic or appraisal perspective, it matters whether emotions are regulated early on (antecedent-focused emotion regulation) or whether emotions are regulated later, once they are up and running (response-focused emotion regulation). For psychological construction models, in contrast, emotions are continually subject to development and change, and although the timeline matters, simple distinctions such as "early" versus "late" regulation seem unlikely to do much work (and other distinctions seem more apt). For social construction models that eschew a focus on internal processes, this timing distinction is irrelevant.

These differences notwithstanding, what is perhaps most striking in our analysis is the points of commonality across differing perspectives—particularly at the boundaries between zones. None is more surprising than the clear similarities in the conceptions of emotion regulation that emerge from the appraisal and psychological construction zones. In both traditions, meaning-making is at the center of emotion generation. In appraisal views, the emphasis is on making sense of one's external surroundings, and internal state changes are assumed to result from this meaning analysis in a way that reflects it. In psychological construction views, the emphasis is on making meaning of internal body sensations, and this meaning then makes it possible to construct a unified awareness of both body and world. This similarity in emphasis on meaning-making (albeit with a different focus) means that one key target of emotion regulation for both perspectives will be the meaning-making process.

A second—and perhaps less expected—similarity is the emphasis on time. For appraisal theory, the notion that emotions unfold over time is the cornerstone of the distinctions offered among various forms of emotion regulation. For psychological construction accounts, too, time is critical. Mental life is unfolding over time, with the same processes running to produce (in various combinations) all the mental states that populate the mind, including (but not limited to) emotion. Thus, the same processes may be considered to be generative when they occur at the beginning of a new emotional episode (where body/affect is made meaningful), but considered to be regulatory when they occur later in the episode (for example, when conceptual knowledge is brought to bear that not only makes meaning of an affective state, but changes it).

Moving Forward

We have argued that competing perspectives on emotion differ in how much they direct attention to emotion regulation processes as a separable category of processes. In practical terms, this means that emotion regulation research has flourished among those with a basic emotion or appraisal perspective. By contrast, emotion regulation research has been limited to nonexistent (at least in these terms) by those with a psychological and social constructionist bent. We do not regard this as a necessary state of affairs, but in light of our analysis above, it makes sense that some perspectives have been historically more welcoming of emotion regulation research than others.

We believe that once differences in perspective are made explicit, it is more likely that researchers and theoreticians from diverse perspectives will be able to surmount terminological differences and join together in addressing shared concerns (regardless of how they are labeled). In our view, there are certain questions that unite scientists from all points along the continuum, even though some might consider them to reveal the nature of emotion regulation (i.e., the left side of Figure 1) whereas others might consider them to reveal the nature of emotion (i.e., the right side of Figure 1). In this way, research on "emotion regulation" can tell us something about "emotion generation" and maybe even about the nature of the mind itself.

For example, theorists from all theoretical approaches regard as essential the issue of how various features of emotion covary over time. How are experiential, behavioral, and peripheral

physiological responses coupled across contexts and individuals? What factors or forces seem to govern relatively tight versus relatively loose coupling across these "response systems"? Knowing answers to these empirical questions will powerfully shape how some scientists think about the nature and consequences of the regulation of emotion (left side of Figure 1), whereas for others, these are questions about when a mental state becomes an emotion (versus a cognition or some other kind of mental state; right side of Figure 1).

Another question might focus on the nature of implicit theories and beliefs about emotion generation and emotion regulation. What are the factors that lead someone to believe that he or she is in an emotional state (as opposed to experiencing a bodily state)? To what extent do people vary in the degree to which they believe an emotion is something that cannot be controlled, or that can be changed? On the left side of Figure 1, such theories might influence how people attempt to regulate emotion, or whether they attempt to in the first place. On the right side of Figure 1, such implicit theories and beliefs might play a formative role in the emergence of mental states including emotion. Such beliefs about the controllability of emotion might also play a role in shaping our perceptions of others, including whether emotion is inferred as an explanation for another person's behavior, how responsible the person is for such behavior, and even what kind of behavior is deemed tolerable or permissible.

Our focus in this article has been linking conceptions of emotion to conceptions of emotion regulation within psychology. However, we believe that this effort must be extended to the many other disciplines which have so much to contribute to our understanding of emotion and other mental states, including linguistics, philosophy, history, communication, sociology, anthropology, cognitive science, physiology, economics, neuroeconomics, and computer science. Acknowledging and respecting differences in terminology and perspective is a crucial first step, and the sooner we join together in shared purpose the better. There are many pressing problems to address, and we need every vantage point and perspective we can muster.

Notes

1 This first ingredient has been discussed as either raw sensations (e.g., James, 1884), arousal (Duffy, 1957; Mandler, 1975; Schachter & Singer, 1962), affect (Barrett & Bliss-Moreau, 2009; Russell, 2003), or motivational states to approach or avoid objects in the world (e.g., Cacioppo & Gardner, 1999; Davidson, 1992; Lang, 2010: Watson & Tellegen, 1985).

2 This meaning analysis is variously seen as produced by ideas (Wundt, 1897/1998), social referencing (Schachter & Singer, 1962), attribution (Russell, 2003), or situated categorizations (Barrett, 2006).

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