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Emotional Intensity: It's the thought that counts

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An answer to question 7: How are emotions regulated by context and cognition?

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Much has been written about how emotion colors what we think, but the reverse is equally true. What we think about also affects emotion. Thus, thinking about missed opportunities makes us feel regret, thinking about misfortunes makes us feel sad, and thinking about new opportunities makes us feel excited. In this article, however, we emphasize not the content of emotion, but its intensity. For example, research finds that when asked to do so, individuals can change the intensity of their feelings in response to emotional images they view (e.g., Stefanucci & Storbeck, 2009) and even the intensity of their underlying reactions as measured by amygdala activity (Ochsner, et al, 2002).

We propose two principles as partial explanations of how such thinking might affect emotional intensity, one concerning the importance of the events eliciting the emotion and the other concerning a person's attentional focus. *Importance* refers to the number of consequences an event has, and *focus* refers to the amount of thought devoted to those consequences relative to the amount about non-emotional content. We discuss importance first.

Dictionary definitions of *importance* emphasize consequences, and we too propose that an event's importance varies with its consequences -- the number and extent of the changes it brings. For example, an event that influences central rather than peripheral goals and concerns is important because succeeding or failing at central goals has more implications than succeeding or failing at peripheral goals. We propose an *importance principle*, which is that the more implications of an event that come to mind at the time of judgment, the more important an event seems, and the greater the intensity of emotional response. For example, an acquaintance of one of the authors was recently let go from her job as a social worker, because she had been the last hired when the city of New York confronted a budget shortfall. It was her first professional position, and she was upset as she thought about several domains of her life that would be

affected. She wondered what to tell her parents and friends, how it would look on her resume, and whether she was even cut out to be a social worker. Consistent with the importance principle, she became more upset as she thought of more implications. Actually, this story had a happy ending, because she later decided that being laid off was the best thing that could have happened. She never would have left on her own, but as a result, she found another job in a school, where, in addition to social work, she had opportunities to do counseling, her real passion. In addition, the atmosphere was better, and because the job was part time, she could take private clients as well. The more she thought about these positive consequences, the happier she became. Thus, the intensity of her initial negative and later positive feelings varied as the number of undesirable, and later the number of desirable, implications that came to mind.

To test the importance principle empirically, we asked people to describe a conflict they had experienced and to list the number of areas of their lives (from 0-10) that the conflict had affected negatively. We found that rated emotional intensity increased with the number of negatively affected areas they thought about (Reinhard & Clore, 2015).

These correlational findings are consistent with the importance principle, but consistent experimental evidence has proven more elusive. For example, we asked participants to describe an interpersonal conflict they had experienced, and then list 0, 1, or 3 areas of their lives that had been affected negatively by it. We had expected emotional intensity to increase with the number of consequences they described. In fact, intensity was rated the same across the three conditions, and variations of the procedure also produced null results. Perhaps asking people to describe more or fewer consequences did not affect intensity because the implications of important events tend to get activated automatically. If so, having them list additional areas of their life negatively affected by the conflict would not necessarily create any new cognitions.

That possibility is illustrated by the experience of a friend who reported that she had recently tripped and broken her arm while walking her dog. The interesting part of her account was that even as she was falling to the ground, she thought, “Oh no, I won’t be able to hold the baby!” Her first grandchild had been expected later in the month, and that possible implication of the fall appears to have become part of the meaning of the event in midair.

In view of this example, testing the importance principle experimentally might require events for which the consequences are not immediately clear, so that intensity can build as implications come to mind. Losing one’s keys, for example, might seem more important as one realized that it was the only set, that it included the car keys as well as the apartment key, that it was late at night and one’s cell phone was locked in the apartment, and so on. The magnitude of response might be expected to increase with each new revelation.

We have been focusing on the size, magnitude, or amplitude of emotional responses, but the concept of emotional intensity turns out to have multiple dimensions, including the duration and recurrence of the emotion (Frijda, Ortony, Sonnemmons, & Clore, 1992). If an event is important because it influences a central goal, then whether or not it leads to bigger responses, it is likely to lead to recurrent responses or responses of longer duration (Clore, 1994). Imagine, for example, that one person feels sad after watching his favorite team lose a game and another person feels sad after his pet dog died. Presumably, the person whose dog died would be more intensely sad. But of course, fans can get very upset when their teams lose, so both might be quite distressed in the moment. A day or two later, however, one suspects that the fan would think less about the game than the pet owner about the dog because it has fewer personally relevant consequences. The pet owner is likely to miss taking walks, going to the dog park, and being greeted enthusiastically when returning home. Such painful reminders should prolong the

sadness and lead to its frequent recurrence. This example suggests that the duration and recurrence may be a common, if understudied, aspect of emotional intensity that is especially sensitive to event importance.

Application. The importance principle (that emotional intensity depends on the number of implications that come to mind) can be applied either to raise or lower emotional intensity. Politicians often try to galvanize intense reactions by dramatizing possible implications of policies they favor or oppose. Extreme but illustrative examples include George W. Bush's 2001 defense of his invasion of Iraq as, "...a war to save the world"¹ and 2016 presidential candidate Ted Cruz's claim that acceptance of Obamacare would be similar to appeasing Nazi Germany in 1940's.² Both men tried to intensify people's distress by framing a problem in a manner that suggested far reaching negative implications. Religious institutions too have historically sought to increase the intensity of fear of engaging in proscribed behavior by suggesting limitless negative implications, including divine judgment and eternal damnation, which are about as extreme as implications can get, extending to eternity!

In contrast to politicians and religious leaders, clinicians often hope to dampen rather than increase distress by altering the apparent importance of events. Mindfulness meditation, for example, involves training people to focus only on the experiential details of emotions, and to avoid interpreting them or focusing on their implications. Thus, whereas the examples of politics and religion involved directing people to think about implications to increase emotional

¹ President George W. Bush, war, 2001 Remarks to State Department Employees. URL: <http://www.sourcewatch.org/index.php?title=Evildoers>.

² [http://www.businessinsider.com/ted-cruz-defunding-obamacare-nazi-germany-filibuster-2013-](http://www.businessinsider.com/ted-cruz-defunding-obamacare-nazi-germany-filibuster-2013-9)

intensity, mindfulness teaches practitioners to avoid thinking of implications in order to decrease emotional intensity (e.g., Brown, Goodman, & Inzlicht, 2013).

In summary, we have proposed that emotional intensity varies with the perceived importance of events, and that importance depends on the implications of events that come to mind. Thus, intensity should increase as one broadens one's attention to see additional implications. If so, does that mean that narrowing one's perspective dampens emotion? Not necessarily. We consider next the *focus* principle, which says that intensity depends on what gets included and excluded as people broaden or narrow their perspective.

Focus

The focus phenomenon can be seen by considering the reactions of sports fans. Fans often have intense reactions at games, including extreme facial expressions, loud vocalizations, and animated gestures. However, even avid fans are unlikely to include the success of their favorite sports team among their most important life goals. How can an event without important implications elicit such intensity? One reason is that at a game, a fan's attention is narrowed to what happens on the court or the field. The active goals at the time are for the team to play well and to win, and nearly everything that happens there is goal-relevant, which often results in intense emotion.

Such observations suggest a second principle in which the intensity of feeling depends on the extent to which an event dominates one's momentary focus of attention. Specifically, the *Focus Principle* is that *intensity of feeling increases with the proportion of current mental content that is relevant to the concerns involved in a given emotional event*. One can summarize

this idea as an *intensity ratio* in which the number of current event-relevant thoughts is divided by the total number of current thoughts.³

If a fan thinks mainly about the current game, the denominator of the intensity ratio (the total number of current thoughts) becomes the same as the numerator (event-relevant thoughts) so that the intensity ratio is maximized at 1.00. Conversely, increasing thoughts about something else (adding concern-irrelevant thoughts to the denominator) would reduce the intensity ratio. Thoughts about things unaffected by an emotional event should therefore make emotional reactions less intense.

Research. Recent studies provide evidence supporting that idea (Reinhard & Clore, 2015). For example, experimenters asked participants to reflect on an interpersonal conflict they had experienced and to write about 0, 1, or 3 current positive goals not affected by the conflict. As expected, decreasing the intensity ratio in this way also decreased the intensity of feeling. Those who thought about three unaffected goals expressed the lowest emotional intensity about the original conflict, those who thought of none had the highest, and those that thought of one were in the middle.

The results were consistent with the principle, but we had asked for unaffected goals that were positive. Since any positive thoughts might dampen negative feelings, in the next study, we asked for 0, 1, or 3 areas of their lives that were unaffected by the conflict but were nevertheless negative. Again, those who thought about three unaffected areas felt the least intensely about the original conflict, even though the added thoughts were negative. Those who thought of no other unaffected areas of their life had the most intense reactions (because the intensity ratio would have been maximized at 1.0), and those who thought of one were in the middle. The results were

³ Thanks to Ben Converse for this formalization.

consistent with the focus principle that reactions to emotional events can be made less intense by thinking about something else, even if it was negative, as long as doing so lowered the proportion of current mental content that was concern-relevant.

The focus principle thus says that the intensity of affect depends on how much of the current mental frame is taken up by the object of the affect. As focus narrows to include only the emotional event, intensity should increase, an effect that is basic to the emotional process. That is, emotions mark important events through arousing experiences that command attention. As with physical pain, or having a rock in one's shoe, emotional stimuli make one single-minded, which ensures that the intensity ratio stays at 1.0 and is not diminished by allowing other considerations into the denominator. Consider the "intensity funnel" of anger (Clore, 1994). If someone's blameworthy action elicits anger, the anger is likely to narrow attention, which should intensify anger, which should narrow the focus further, and so on in a process of anger auto-intensification. But the focus principle can explain not only the intensification of emotion, but also how people can dampen emotional intensity by bringing concern-irrelevant things to mind. Emotional multi-tasking means that target concerns receive less attention and therefore have less impact. We believe this principle is generally applicable, as we see next.

Applications

Romantic partners appreciate how the intensity ratio works if they get distressed by their partner directing attention elsewhere. The intensity of feelings of love necessarily decrease as the partner thinks of something (or someone) other than the beloved. That is, the intensity ratio decreases as the number of irrelevant thoughts grow. But whereas that might be problematic for lovers seeking to maintain emotional intensity, it might be helpful for distressed individuals seeking relief from intense emotion.

Therapeutic implications of the focus principle can be seen in “values affirmation” interventions (e.g., Cohen, et al., 2006; Steele & Liu, 1983). Participants indicate the importance of various personal values, such as a sense of humor, relationships with friends, or athletic ability (e.g., Cohen, Aronson, & Steele, 2000). They then write about why their most important value matters to them. When students from minority or less privileged backgrounds begin college, they may be unduly focused on their difficulties at school. Writing about values that are important to them expands their focus so that their current distressing concerns become a smaller part of what is in mind. Although lasting only ten minutes, this procedure can reduce distress and increase academic performance, effects that sometimes persist over long delays.

This procedure focuses attention not just on any unaffected domain, however, but specifically on enduring values. Assuming such values are high in importance, they would have many implications. As a result, writing about them should affect focus by flooding the denominator of the intensity ratio, guaranteeing a diminished impact of distressing events in the numerator.

Related effects are sometimes reported by people after near-death experiences or when facing terminal illness (e.g., Kuhl, 2002; Martin, Campbell, & Henry, 2004). Expanding their focus beyond their current problem adds unaffected mental content to the denominator of the intensity ratio, thus diluting thoughts about the distressing events in the numerator. The principles we have outlined specify that intensity depends on the ratio of emotional thoughts relative to total mental content. Thinking about enduring values or life as a whole should reduce emotional intensity in response to current problems to the extent that they are separate from the concerns causing the distress in the first place.

Summary

We proposed two cognitive principles to explain when emotional reactions are intense or mild: Importance and Focus. The Importance principle is that the intensity of emotional reactions to an event reflects its perceived importance -- its consequences and implications. The more implications, the more intense the emotional reaction. Importantly, “intensity” can refer both to the magnitude and the duration of emotion, and we suggested that importance may be especially apparent in measures of emotion duration and recurrence. The Focus principle is that the magnitude of emotional responses to events increases to the extent that the events and their implications dominate attention. This principle was formalized as an *intensity ratio*, in which intensity varies with the ratio of emotional thoughts relative to all current thoughts.

We discussed preliminary data concerning these principles and potential applications. We suggested that mindfulness affects emotional intensity by divorcing the experience of emotion from the implications of emotional-relevant events and reducing the numerator of the intensity ratio. Conversely, values affirmation techniques decrease intensity through an expanded focus that adds emotionally unaffected thoughts to the denominator of the intensity ratio.

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