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Emotion, auto-noesis, and the self

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ABSTRACT

I examine LeDoux's cognitive account of emotions in *The Deep History of Ourselves* and raise two questions about it. First, LeDoux argues that emotions are auto-noetic conscious experiences grounded in episodic memories. I argue that this overlooks the existential emotions, which represent facts about human conditions in a general rather than an episodic fashion. Second, LeDoux suggests that emotions engage the self-schemas and are concerned with one's own flourishing. I argue that this overlooks the non-eudaimonistic emotions, such as surprise, wonder, and awe, which respond to the pull of the objects but do not view them through the lens of one's own scheme of ends.

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1. Introduction

The Deep History of Ourselves takes us on a grand journey from the origins of life to the emergence of creatures with consciousness and emotions. LeDoux (2019) argues that emotions, despite having deep roots that extend to the beginning of life, are distinctly human. He writes, “the historical waters of survival behaviors are deep, but the stream of emotional consciousness is shallow” (p. 369–70). The reason for this is because emotions are higher-order cognitive processes, in particular, auto-noetic conscious experiences involving emotion schemas and self-schemas. These are made possible by unique features of human brains “not found in other animals” (p. 4).

I find LeDoux's cognitive approach to emotions compelling in general. However, I have two concerns regarding the specifics of his account, which I discuss in this commentary. In [section 2](#), I look into LeDoux's claim that emotions are states of auto-noetic consciousness grounded in episodic memories. I argue that this does not capture the existential emotions, which represent facts about human conditions in a general rather than an episodic fashion. In [section 3](#), I examine LeDoux's claim that emotions engage the self-schemas, insofar as they are concerned with one's own well-

being constituted by one's scheme of goals and values. I argue that this overlooks emotions that carry one away from one's scheme of ends, such as surprise, wonder, and awe.

2. Are emotions states of auto-noetic consciousness?

Against basic emotions theorists, LeDoux (2019) argues that emotions are not survival circuits that we inherit from our mammalian ancestors. Rather, they are “cognitive interpretations of the situations in which we find ourselves,” a capacity “made possible by the evolution of consciousness” (p. 350). More specifically, LeDoux's cognitive approach appeals to a distinction drawn by Tulving (1983) between two kinds of consciousness – noesis and auto-noesis. Noetic conscious experiences involve semantic memories, which concern general facts, such as “the features and uses of objects” (LeDoux, 2020a, p. R197). Auto-noetic conscious experiences involve episodic memories, which also store facts and concepts, but do so “in the context of personal experiences” (p. R197).

To clarify the notion of episodic memories, LeDoux (2019) suggests that they are linked to specific episodes characterized by “composite ‘what-where-when’ representations” (p. 195). They also include the experiencing person as part of the experience and are in this sense personal (p. 195). A key feature of episodic memories is “mental time travel.” This enables one to travel back in one's mind to an earlier occasion or situation in one's life, and “to mentally relive the experienced and thought about happenings” (Tulving, 2005, p. 14). It also enables one to travel forward in one's mind to an imagined personal future (p. 16).

LeDoux (2019, 2020a, 2020b) claims that emotions involve episodic memories and are a subset of auto-noetic conscious experiences. This does not imply that emotions do not engage with semantic memories. As Tulving (1993) suggests, the relationship between episodic memories and semantic memories is hierarchical: episodic memories have evolved from and many of their operations continue to depend on semantic memories (p. 67). For example, to have an episodic memory that I watched the Thanksgiving Day parade in New York City in 2017 requires that I also have semantic memories about what a parade is, what Thanksgiving is, and so on. Thus, what LeDoux's account shows is not that emotions involve episodic memories *as opposed to* semantic memories, but rather that representations of semantic memories alone do not suffice for emotions – episodic memories are also needed.

LeDoux does not specify the ways in which emotions require episodic memories, but we can think of different possibilities. To start, it could be that emotions involve mental time travel to the past. That is, emotions need to make reference to episodic memories already stored in the brain

regarding past experiences in order to interpret the situations at hand in which they occur. For example, suppose that when Christy was a child, she was once barked at and chased by her neighbor's large dog. This experience has left an imprint on her such that even after Christy has grown up, she feels fear and is brought back to her childhood nightmare whenever she sees a large dog. These later instances of fear, then, may involve representations of the situations at hand viewed in light of Christy's episodic childhood memory of being threatened by a large dog.

The problem with this view, however, is that it is not always necessary that past episodic memories be used to interpret the situations at hand in order to give rise to emotions. In particular, it does not seem necessary that Christy's childhood episodic memory be represented every time she feels fear for a large dog. As LeDoux (2019) himself points out, "when episodic memories are based on multiple similar experiences that recur, or when the episodic memory of a single experience is retrieved repeatedly, they become 'semanticized'—represented as a fact" (p. 302). As Christy encounters aggressive large dogs many times, she accumulates multiple episodic memories, which are then retrieved repeatedly in her later encounters with large dogs. As a result, these episodic memories become semanticized. They no longer involve representations of particular encounters with particular large dogs at particular times and places, but rather involve general representations of the ways in which large dogs can be dangerous. When this happens, Christy still feels fear for a large dog whenever she sees one, but such fear no longer involves mental time travel to the past.

LeDoux might concede that in the case above, Christy's fear does not depend on any episodic past experience. Nevertheless, he may argue that such fear still involves an episodic memory insofar as it represents the situation at hand which gives rise to it in an episodic fashion. In particular, when Christy fears a large dog, she has to use semantic or episodic memories about large dogs already stored in her brain to recognize that she is in danger *here* and *now*. What is essential to her fear is not the general recognition that large dogs are dangerous, but the particular one that the large dog in front of her is posing a threat to her at this moment in time. This explains why emotions involve episodic memories: emotions depend on episodic representations of the situations in which they occur.¹

Thus viewed, LeDoux's claim that emotions are auto-noetic states has some initial plausibility, since many emotions are about particular happenings at particular points in time. However, there are counterexamples. These are emotions that are concerned with general facts, which they evaluate in certain ways, but do not relate these facts to one's particular situations at particular times. In fact, LeDoux (2019) himself mentions an emotion that may be of this sort— "dread over the meaningless[ness] of one's life," which he thinks belongs to existential emotions (p. 366–7). We

can think of other examples, such as *weltschmerz*—a sense of pain caused by comparing the actual state of the world with an ideal state, and *angst*—“a state of anguish or despair in which a person recognizes the fundamental uncertainty of existence and understands the significance of conscious choice and personal responsibility” (APA Dictionary of Psychology). Following LeDoux, I refer to these emotions as existential emotions. Unlike Christy’s fear of large dogs, existential emotions do not represent particular occurrences that happen to particular people at particular times. Rather, they are concerned with the conditions of human existence in the most general sense.

Consider also the emotion *mono no aware* in Japanese culture. Although its meaning is complex and has changed over time, it roughly refers to “a ‘pathos’ (*aware*) of ‘things’ (*mono*), deriving from their transience” (Parkes & Loughnane, 2018). In *The Tale of Heike*, Murasaki Shibiku evokes *mono no aware* with the famous opening lines:

The bells of the Gion monastery in India echo with the warning that all things are impermanent. The blossoms of the sala trees teach us through their hues that what flourishes must fade. The proud do not prevail for long but vanish like a spring night’s dream. In time the mighty, too, succumb: all are dust before the wind. (Watson, 2006, p. 9)

Mono no aware can be elicited by particular occurrences. Other than falling blossoms, common triggers include the changes of the moon, the plaintive cries of birds and insects, the separation of lovers, and so on. Despite this, these particular triggers are not essential to the identity of *mono no aware*. That is, *mono no aware* is not about these particular occurrences that serve as its stimuli. Rather, it penetrates beneath the surface to represent a general fact about the impermanence of things, which underlies all particular phenomena. In fact, one could feel *mono no aware* even in the absence of any external stimulus, as one simply ponders on the contingency of things. This shows that *mono no aware* is an instance of an existential emotion, in which episodic memories are dispensable.

To conclude, LeDoux is right in saying that emotions are higher-order cognitive processes that are perhaps only possessed by humans. However, he overlooks the possibility that there may be a variety of higher-order cognitions underlying different emotions. In particular, some emotions are cognitively-higher because they are auto-noetic conscious experiences, which rely on our capacity to represent things episodically. Other emotions, such as the existential emotions, do not involve auto-noesis themselves, but are nevertheless cognitively higher, since they are grounded in complex conceptual representations with a high degree of generalization and abstraction.²

3. Are emotions concerned with the self?

LeDoux (2019) argues that emotions require self-schemas. He writes, “an emotion is the experience that something of value is happening to you. No self, no fear – nor other emotions” (p. 375). This section examines this view and argues that it does not apply to the non-eudaimonistic emotions, which do not return us to the self with its preexisting goals and values.

According to LeDoux (2019), a self-schema underlies one’s concept of the self and may include all kinds of semantic and episodic memories about one’s self, such as one’s skills and abilities, one’s foibles, one’s social roles, one’s psychological attributes, how one looks, feels, and acts, one’s possessions, the personal experiences that one has had in one’s life, and so on (p. 298). Of course, not all autobiographical memories that constitute one’s self-schema are necessary for emotions. To see what kind of self-related information is required, consider the example of fear:

... to feel fear in a dangerous situation your fear schema has to define the situation as fearful, and you have to be aware that it is you who is in harm’s way. In other words, you have to be part of the subject matter of the dangerous experience in order to feel fear. (LeDoux, 2020b, p. R622)

This suggests that fear represents the situation at hand as a threat to one’s own well-being.³ Here well-being is construed broadly to include all kinds of goals and values that we may have and that give meaning to our life. Because of this, depending on how we conceive our well-being, fear could occur in a variety of contexts, ranging from the presence of predators, a lack of water and food, or extreme weathers, to “political instability, economic loss, social abuse, or existential concerns” (LeDoux, 2020b, p. R620).

More generally, emotions are “conscious experiences of one’s self in biologically or psychologically significant situations in life” (LeDoux, 2019, p. 369). What is biologically significant is associated with activities of the survival circuits, which we are equipped with as biological organisms that aim to sustain ourselves and our kinds. What is psychologically significant, however, may go beyond survival concerns to include other values and goals that we come to acquire as a result of our culture and our own reflections. Thus, emotions involve self-schema in that they relate things that happen to us to our goals and values and represent them as having personal significance to us. In LeDoux (2020b)’s words, “our emotions define our lives and our well-being” (p. R623).⁴

One potential objection to taking emotions to be self-referential in this way, however, suggests that it leaves out emotions that are other-regarding. Take, for example, the moral emotions, which respond to “social events that do not directly affect the self” (Haidt, 2003, p. 853). Some moral emotions are other-condemning, such as instances of anger. Although one could be

angry at an offense done to oneself or one's close associates, this need not always be the case. One's anger could also be directed at "racism, oppression, exploitation, and ethnic cleansings" even when one belongs to the privileged group and has "no ties to the victimized group" (p. 856). The same applies to moral emotions that are other-praising, such as admiration and elevation. One can feel admiration toward a person because of her virtue or accomplishments even though one is not benefited by them oneself. Based on this, the opponent can argue that not all emotions are self-referential, contrary to what LeDoux thinks.

In my view, the above objection is misguided, since it confuses well-being with self-interest and mistakes the latter for that which constitutes the self-schema required by emotions. To be specific, when the opponent suggests that emotions are not necessarily self-referential, she means it in the egoistic sense. That is, emotions do not necessarily refer to one's self-interest, since there exist the moral emotions, which can be had even when one's self-interest is not in any way affected. However, this does not amount to an objection to LeDoux, since the kind of self-schema that he deems necessary for emotions is concerned with well-being, which is conceptually distinct from self-interest. As has been suggested, one's well-being is constituted by one's scheme of ends and goals, broadly construed. Although some of these ends and goals may be self-regarding, this need not be the case for others. For example, one could see helping the poor as a constituent of one's well-being. When one does so, one might value helping the poor for its own sake, without regard for how it relates to one's personal advantages.

In fact, even though moral emotions are not self-referential in the egoistic sense, they are self-referential in the eudaimonistic sense, insofar as they are concerned with things that we value and care about. That is, one can only feel anger at racism and oppression when one ascribes value to social justice oneself. Similarly, one can only feel elevation and admiration at a virtuous person when one cares about virtue and sees it as something that should be pursued. Thus, the opponent's objection is based on a conceptual confusion, which, once cleared, fails to raise a genuine problem for LeDoux.

Nevertheless, there remains another objection, which I think cannot be as easily resolved. This suggests that LeDoux's account overlooks the presence of non-eudaimonistic emotions, which do not view things through one's preexisting goals and values. To see this, consider the emotions of surprise, wonder, and awe. Although they are different in many ways, they belong to the same emotion family insofar as they are all concerned with what is novel and unexpected. Surprise is an emotion "typically resulting from the violation of an expectation or the detection of novelty in the environment" ([APA Dictionary of Psychology](#)). Wonder is also an affective response to the novel, but is a more reflective experience, as one who wonders often tries to understand the novel.⁵ Awe, by contrast, does not respond to just any

novel stimulus, but only to those that involve perceived physical or conceptual vastness (Keltner & Haidt, 2003, p. 297).⁶

Surprise, wonder, and awe are non-eudaimonistic in that they carry us away from our goals and values to attend to things in their own right. Nussbaum (2001) suggests that wonder “responds to the pull of the object” and makes one maximally aware of the object, and “only minimally aware, if at all,” of how it relates to one’s own values and goals (p. 64). Similarly, in awe, one transcends one’s personal point of view and is captured by the surpassing value of the object in itself (p. 64). An apt example of wonder can be found in Murdoch (1985), in which her personal concerns are left behind as her attention is consumed by the sheer otherness of a kestrel:

I am looking out of my window in an anxious and resentful state of mind, oblivious of my surroundings, brooding perhaps on some damage done to my prestige. Then suddenly I observe a hovering kestrel. In a moment everything is altered. The brooding self with its hurt vanity has disappeared. There is nothing now but kestrel . . . (p. 84)

Piaget (1952)’s distinction of assimilation and accommodation in his theory of cognitive development also sheds light on this issue. Eudaimonistic emotions, such as fear, involve assimilation, which signifies our effort to incorporate new experiences into existing schemas, with which “we fashion our goal seeking behavior” (as cited in Fuller, 2006, p. 83). Non-eudaimonistic emotions, by contrast, occur when new experiences cannot be assimilated into existing schemas. This calls for accommodation, through which we modify previous schemas to include the novel features that we perceive (p. 83).⁷ Because of this, non-eudaimonistic emotions do not return us to the self with its preexisting goals and values. Rather, they often serve to move distant objects within the circle of our ends and thereby expand the self (Nussbaum, 2001; Ren, 2019).

To conclude, LeDoux (2019) claims that emotions are auto-noetic conscious experiences involving emotion schemas and self-schemas. I have argued that this leaves out (1) the existential emotions, which do not themselves engage episodic memories; and (2) the non-eudaimonistic emotions, which attend to novel things in their own right without relating them to our goals and values. In the end, I find LeDoux’s cognitive approach to emotions to be largely compelling. I also applaud LeDoux for his continued effort to clarify the conceptual confusions that hinder the progress of the affective sciences. However, I think we need to recognize the variety of emotions, the fact that although emotions are higher-order cognitions, they are not always cognitively higher in the same way.

Notes

1. It should be noted that not all emotions are concerned with what is happening to oneself at present. Some emotions are directed at the future, such as hope. Some emotions are about happenings in the past, such as regret. Nevertheless, the opponent could argue that all these emotions involve episodic memories in that they represent particular points in time as being in certain ways.
2. LeDoux (2019) claims that “no other animal matches humans in abstract conceptual thought, hierarchical relational reasoning, and pattern processing” (p. 236). If so, it is unlikely that other animals are capable of having existential emotions.
3. Well-being, flourishing, and eudaimonia are used interchangeably throughout this commentary.
4. This aspect of LeDoux’s account resonates with the eudaimonistic account of emotions in the philosophical literature. According to Nussbaum (2001), a well-known proponent of the eudaimonistic account, emotions require eudaimonistic evaluative content. That is, emotions not only ascribe high value to things, but also do so from the perspective of the agent by referring to her important goals and ends (p. 41).
5. According to Darbor et al. (2016), wonder is “related to trying to understand the world, reflected in greater use of cognitive complexity and tentative words,” such as “think,” “because,” or “perhaps” (p. 1188).
6. For example, the ocean can elicit awe because it is physically vast, whereas a complex scientific theory can elicit awe because it is conceptually vast.
7. A similar point can be found in Keltner and Haidt (2003), who argue that “prototypical awe involves a challenge to or negation of mental structures when they fail to make sense of an experience of something vast” (p. 304).

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