

# Experimental Philosophy of Emotion

## Emotion Theory

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### **Abstract**

Are emotions bodily feelings or evaluative cognitions? What is happiness, pain, or “being moved”? Are there basic emotions? In this chapter, I review extant empirical work concerning these and related questions in the philosophy of emotion. This will include both (1) studies investigating people’s emotional experiences and (2) studies investigating people’s use of emotion concepts in hypothetical cases. Overall, this review will show the potential of using empirical research methods to inform philosophical questions regarding emotion.

### **1. Introduction**

Philosophers often ground their arguments on claims that are empirical or “intuitive” (i.e., pre-theoretical, commonsense), and the philosophy of emotion is no exception. In order to decide which cases count as cases of emotion and develop an account of what emotions are, philosophers have traditionally appealed to intuitions about the application of emotion

concepts, as well as to our everyday experience of emotion. This approach seems to be appropriate. Indeed, our theories of emotion should account for people's emotional experiences, and we rely on ordinary language to pinpoint those experiences. However, different authors use intuitions and everyday experiences of emotion to defend opposing claims, and that makes progress difficult.

The good news is that, given the use of empirical and intuitive claims in the philosophy of emotion, experimental philosophy understood either in a broad sense (i.e., using empirical research methods to test philosophical claims) or a narrow sense (i.e., using vignette studies to test laypeople's intuitions regarding cases) can readily inform debates in the field. In this chapter, I will review studies that are relevant for questions regarding the nature of emotion.

Note that, despite the methodological similarities with other areas of philosophy, the (experimental) philosophy of emotion might, nonetheless, constitute an exception. While some might be tempted to make a sharp distinction between (1) empirical studies on *people's emotional experiences* and (2) empirical studies on *people's intuitions about emotion*, the boundaries are rather blurry. To date, the only method to measure people's emotional experience is self-report (Quigley et al. 2014). That is, asking participants whether they are afraid, sad, angry, and so forth. Thus, many studies on emotion are testing people's use of emotion concepts, just as studies on intuitions about emotion. The relation between emotion and emotion concepts (Reisenzein 2021; Díaz 2022b; Johnson-Laird and Oatley 1989; Fontaine, Scherer, and Soriano 2013; Klaus R. Scherer 2005) will not be discussed at length here, but it motivates the decision to consider both studies on emotion and studies on intuitions about emotion.

The structure of this chapter is as follows. First, I will introduce the core topic: The nature of emotion. I will briefly introduce (some of) the main theories of emotion and reconstruct central

arguments in favor of these theories. This reconstruction will allow us to identify the empirical premises contained in those arguments and review studies testing those claims. In the last section, I will review further studies testing claims regarding specific emotions and affective states.

## **2. What is an emotion?**

While most of us agree that things such as joy, sadness, fear, or anger are emotions, it is not so clear what makes them emotions. Emotions seem to be a specific kind of reaction to our environment. But what kind of reaction? Sweating is also a reaction to our environment. Nevertheless, sweating is not an emotion. Perhaps emotions are not physiological but psychological reactions to our environment. However, we psychologically react to the environment every single moment of being awake, and not all these reactions are emotional. Emotions seem to be associated with certain facial expressions: we smile when we are joyful and wrinkle our noses when we are disgusted. However, we also smile to pose for pictures and wrinkle our noses when the beat drops in our favorite rap song. The question, as we can see, is not an easy one.

There are at least three main (families of) theories of emotion: Cognitive, Somatic, and Componential theories. Let us have a brief look at those theories.

According to *Cognitive theories*, to fear darkness is to believe that darkness is dangerous, being angry at Donald Trump is evaluating Donald Trump as offensive, grieving the death of someone is believing that their death is an irrevocable loss, and so on. To have an emotion,

then, is to hold certain judgments or beliefs<sup>1</sup> about the value of particular objects and events. Thus, the core claim of Cognitive theory is: Emotions are evaluative beliefs.

According to *Somatic theories*, to be afraid is to feel one's body shivering, to be angry is to feel one's "blood boiling", to be sad is to feel one's body drain out of energy, and so on. Importantly, those bodily changes have to be registered by the subject, so the emotion can be felt.<sup>2</sup> This way, the core claim of Somatic theories is that emotions are perceptions of one's own bodily changes or, in short: Emotions are bodily perceptions.

*Componential theories* posit that emotions are constituted by the combination of two or more elements, including cognitive evaluations, bodily reactions, action tendencies, and/or motor expressions. Different componential theories hold different views about how these features come together to constitute emotions, most importantly: Via affect programs (Ekman 1999), appraisal processes (Scherer 2009), or psychological construction (see Gendron and Feldman Barrett 2009).

In this section, I will present four central arguments in favor of Cognitive and Somatic theories of emotion. These arguments can be divided into four categories, based on whether they concern the claim that: (1) bodily perceptions are necessary for emotion, (2) bodily perceptions are sufficient for emotion, (3) evaluative beliefs are necessary for emotion, or (4) evaluative

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<sup>1</sup> To avoid repetition, I will from now on talk about beliefs and judgments interchangeably (Nussbaum 2004). But note that some authors have argued that evaluative beliefs and evaluative judgments should be distinguished as non-identical mental states, and that emotions should be identified with the latter but not the former (Solomon 2002). Furthermore, as we will see, some Cognitive theories identify emotions with other types of evaluative states.

<sup>2</sup> From now on, I will sometimes use bodily perceptions and sometimes bodily changes to avoid repetition. Please take into account that, unless otherwise noted, those bodily changes are considered to be perceived by the subject.

beliefs are sufficient for emotion. But before introducing the arguments, some clarifications are due.

First, note that claims (1-4) do not refer to necessity and sufficiency in a metaphysical sense (i.e. what emotions are in all possible worlds), but rather in a nomological sense (i.e. what emotions are in our world, given the laws of nature). Thus, “Xs are necessary for emotion” means that worldly emotions will always involve Xs; and “Xs are sufficient for emotion” means that it will always be possible to identify emotions in our world by their respective Xs. Most emotion researchers would probably settle for these “modally modest” claims (Machery 2017). But some researchers might want more. For those, this author cannot offer more than good wishes.

Second, note that claims (1) and (3) are also relevant for Componential theories of emotion, as long as they regard bodily perceptions and evaluative beliefs as necessary constituents of emotion. Furthermore, slight modifications of claims (3) and (4) would make them fit modern versions of Cognitive theories, which argue that emotions are not *judgments* of value but rather *perceptions* of value (Roberts 2003, Döring 2007, Tappolet 2016). The same is the case for claims (1) and (2) and modern versions of Somatic theories of emotion, which argue that emotions are not attitudes *directed* at bodily changes but rather attitudes *constituted* by bodily changes (Deonna and Teroni 2012, 2015, 2017).

After presenting each argument, I will review empirical studies testing their premises. This will allow us to determine whether the arguments are sound or not.

## **2.1. Are bodily perceptions necessary for emotion?**

Emotions commonly involve certain bodily changes, such as heart pounding, muscle contraction, and so forth. Somatic theories claim that those changes are not mere accompaniments of emotions. Instead, those bodily changes are a constitutive part of the emotion. To see this, consider a case of anger. Would it be anger without accelerated heartbeats, shallow breathing, muscle clenching, or any other bodily disturbances? It seems like such a case would appear to be rather unemotional. One cannot experience emotion without experiencing bodily disturbances. In other words, emotions *necessarily* involve bodily perceptions (James 1884, Prinz 2004, Hufendiek 2016, Deonna and Teroni 2017). According to Somatic theories, the best way of accounting for this is to claim that emotions are bodily perceptions:

P1. When someone does not [bodily perception], she is not [emotion].

P2. Emotions are bodily perceptions is the best explanation for P1.

C1. Emotions are bodily perceptions (Somatic theory).

There are two ways of supporting P1: using hypothetical cases of absence of bodily perceptions or actual cases of absence of bodily perceptions (e.g., spinal cord injuries).

Patients with spinal cord injuries lack awareness of their own bodily changes. This deficit occurs in different degrees, depending on the position (e.g., cervical or lumbar) and severity of the injury (e.g., complete or partial). Hohmann (1966) conducted a series of interviews with spinal cord injury patients, asking them about their emotional experiences before and after the injury. Patients with spinal cord injuries reported decreases in their experience of emotion after the injury. And, importantly, these decreases were larger for patients with more severe or higher injuries. Although none of the patients completely lacked bodily feedback, the results are in line with P1.

Other studies, however, have found that patients with spinal cord injuries *do not* report decreases in their experience of emotion after their injuries (Cobos et al. 2002). Importantly, this was the case even for complete cervical injuries. Against P1, these results suggest that, at least in some cases, emotions can be experienced in the absence of (normal) bodily perceptions.

To account for the evidence against P1, proponents of Somatic theories of emotion have stressed the fact that spinal cord injuries (and other clinical conditions that impair the perception of one's own bodily changes) do never constitute cases of a *complete* lack of bodily feelings (Hufendiek 2016). William James (1884) was already aware of this problem,<sup>3</sup> and he relies on a thought experiment, known as the Subtraction Argument, to support P1.

In the Subtraction Argument, we are told to imagine an emotion (e.g., fear) and subtract from it all the feelings of bodily changes that it involves (e.g., accelerated heartbeat, sweaty palms, shivering). After the subtraction, we are invited to think about whether the resulting state is an emotional state. According to William James (1884), the outcome is clear. After subtracting the feelings of bodily changes, “we have nothing left behind” and “most people, when asked, say that their introspection verifies this statement” (p. 193). But do people's (introspective) intuitions really support the claim that there is no emotion in the absence of bodily perceptions, as P1 suggests?

In a recent study, Díaz (2021) tested people's intuitions regarding the Subtraction Argument. Participants were guided to imagine themselves experiencing either fear, sadness, or anger. After this, they were told to imagine that they don't feel the bodily changes associated with the emotion at hand and asked whether they would still consider themselves to be afraid (sad,

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<sup>3</sup> «It must be confessed that a crucial test of the truth of the hypothesis [that emotions are bodily perceptions] is quite as hard to obtain as its decisive refutation. [...] Hysterical anesthetics seem never to be complete enough to cover the ground. Complete anesthetics from organic disease, on the other hand, are excessively rare.» (James, 1884, p. 203)

angry). Contrary to James' claims, most participants (77.3%) answered that they would still have the emotion. Furthermore, there was no significant relationship between participants' answers and individual differences in cognitive reflection or interoceptive awareness, ruling out some alternative interpretations of the results. In a second study, these results were replicated using an emotion induction task (autobiographical recall) instead of making participants imagine an emotion. Once again, and against P1, the results suggest that emotions persist in the absence of bodily feelings. Hence, bodily perceptions are not necessary for emotion.

## **2.2. Are bodily perceptions sufficient for emotion?**

Sometimes, we perceive changes in our bodies without experiencing emotion. For example, I can feel my heart racing because I'm playing basketball, and not because I have an emotion. Here, it is important to note that Somatic theories do not identify emotions with the perception of *any kind of* bodily changes. The bodily changes involved in emotion are reliably caused by challenges in our environment and prepare us to quickly deal with these challenges (Prinz 2004). But even if bodily changes can help us distinguish emotional and unemotional states (see Barlassina and Newen 2014 for a skeptical view), can bodily changes account for the differences between emotion types such as, for example, anger and fear?

At first sight, it seems like the same bodily changes can characterize several distinct emotion types. Accelerated heartbeat, for example, can indicate both fear and anger. The picture gets even more blurry when we consider other emotions such as disgust, sadness, shame, pride, joy, contempt, amusement, and so forth. It seems there are not enough bodily changes to distinguish



all these different emotions (Cannon 1927). This challenges the capacity of somatic theories to account for the assumption that emotion types are distinct from each other.

Proponents of somatic theories, however, are aware of this worry. In response, it has been claimed that each emotion has a *prototypical* pattern of bodily feelings (Prinz 2004, p. 72). The prototypical pattern of bodily changes might appear very few times. But all instances of, e.g., fear, are similar enough to the prototype of fear to be perceived as fear and not as, say, anger. Whether a bodily pattern constitutes fear or anger, then, is a matter of degree. But this does not preclude distinguishing between emotion types in terms of bodily changes. Thus, bodily perceptions are sufficient to individuate emotions:

P1. Emotion types are distinct from each other.

P2. (Prototypical) bodily perceptions are different across emotion types.

C1. Bodily perceptions are sufficient to individuate emotions.

The claim that prototypical bodily perceptions are different across emotion types (P2) is supported by studies on “bodily maps” of emotions. Nummenmaa, Glerean, Hari, and Hietanen (2014) presented a group of participants with emotional stimuli (written stories) along with two silhouettes of bodies. Participants used the body silhouettes to color the regions where they felt an increase or decrease in activity while reading the stories. Based on participants’ drawings, researchers could predict the story that participants read in 48% of the cases. As they used seven different stories (inducing anger, disgust, fear, happiness, sadness, surprise, and neutral states, respectively), this percentage was way above chance levels (14%). These results have been replicated using short movies as emotional stimuli (Nummenmaa et al. 2014), in children (Hietanen et al. 2016) and adults across different cultures (Volynets et al. 2020).

### 2.3. Are evaluative beliefs necessary for emotion?

Most would agree that emotions typically involve evaluative beliefs. When I'm angry, I typically think that something is offensive. But, according to Cognitive theories, the relationship between emotions and evaluative beliefs is not a sheer coincidence. To illustrate this, consider the following case. You go through a reviewer's comments on your paper, and a remark on your writing angers you. Would you be angry if you thought that the remark was friendly and helpful? Probably not. It seems like one cannot be angry if one doesn't believe something is offensive. Similarly, one cannot be afraid if one doesn't believe that something is dangerous. In other words, emotions *necessarily* involve evaluative beliefs (Kenny 1963, Nussbaum 2001, 2004, Solomon 1976). The best way to explain this, according to Cognitive theories, is to hold that emotions *are* evaluative beliefs.<sup>4</sup> This argument takes the following form:

P1. When someone does not [evaluative belief], she is not [emotion].

P2. Emotions are evaluative beliefs is the best explanation for P1.<sup>5</sup>

C1. Emotions are evaluative beliefs (Cognitive theory).

P1 is sometimes taken as a matter of logic (see Solomon, 1976, p.118). In this view, the concept of emotion implies evaluative belief, and it is thus impossible to conceive emotion without it. However, the relation between emotion and evaluative belief can also be taken as an empirical

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<sup>4</sup> Alternatively, we could explain this in terms of evaluative beliefs causing emotions, but not constituting them.

<sup>5</sup> Please note that this premise is included to show that the argument at hand is not a deductive argument, but rather an inference to the best explanation.

issue. This way, some have claimed that emotions disappear in the absence of the relevant evaluative beliefs. With regards to anger, Martha Nussbaum (2001) claims that “If I should discover that not A but B had done the damage, or that it was not done willingly, or that it was not serious, we could expect my anger to modify itself accordingly, or go away” (pp. 28–29).

Siemer (2008) presents some experimental results that are relevant for P1. The main goal of this study is to test the centrality of evaluative beliefs vs. behavioral expressions in people’s understanding of emotion. Participants in the study were presented with vignettes in which someone is described as having (anger-, fear-, or sadness-related) evaluative beliefs and behavioral expressions (e.g. *crying* and *talking little* in the case of sadness). In one of the conditions of the study, participants answered the question “Would [person described in scenario] still feel [emotion described] if not [described evaluative beliefs]?” on a scale from 1 (“definitely not true”) to 5 (“definitely true”). Most participants gave a negative response to this question ( $M = 1.99$ ), while most participants gave a positive response when asked the same question about behavioral expressions ( $M = 3.96$ ). These results suggest that, in line with P1, people think that one would not experience emotion absent the relevant evaluative beliefs.

In a series of studies, Díaz (forthcoming) tested people’s use of emotion concepts utilizing vignettes in which the presence (absence) of evaluative cognitions (e.g. “you see the situation as dangerous”), bodily feelings (e.g. “you feel your body trembling”), and action tendencies (e.g. “you feel the urge to get away”) were independently manipulated. Participants judged whether the vignettes depicted cases of emotion. Results across four studies showed that the presence or absence of evaluative cognitions had the biggest impact on people’s use of emotion concepts (explaining between 15% and 44% of the variance in participants’ emotion ratings), followed by bodily feelings and action tendencies (explaining between 5% and 9% of the variance). Furthermore, participants tended to infer the presence of evaluative cognitions from

the presence of bodily feelings (action tendencies) more so than the other way around. In other words, people seem to think that, if someone is having emotional bodily feelings or action tendencies, they must also have the relevant evaluative cognitions. Overall, these results are in line with the claim that emotions depend on evaluative beliefs (P1).

Against P1, some have noted that emotions sometimes persist “against our better judgment”. For example, it is possible to believe that planes are a highly safe means of transportation and nevertheless be afraid of flying. These emotions are sometimes referred to as “recalcitrant emotions” (Greenspan 1981, Roberts 1988, D’Arms and Jacobson 2003, Grzankowski 2017, Naar 2018). Cases of recalcitrant emotion constitute counterexamples to P1. Consider the case of recalcitrant fear of flying. In this case, the person does not believe that flying is dangerous (to the contrary, she believes that flying is safe) but she is nevertheless afraid of flying (against P1).

That recalcitrant emotions do not involve the relevant evaluative beliefs is usually taken as commonplace in the philosophical literature. However, the literature in clinical psychology offers a very different picture of phobias, the paradigmatic case of emotional recalcitrance (see de Jong 2015). One of the most studied phobias is aerophobia (i.e., the above-mentioned fear of flying). Across studies, the reports of flying phobics tell us that they indeed believe that flying is dangerous, as Cognitive theories would predict. For example, Walder and colleagues (1987) found that flying phobic participants were worried about being enclosed (37%), crashing (34%), heights (13%), or had multiple worries (16%). Similarly, McNally and Louro (1992) found that flying phobics report a high concern about external aspects of flying (e.g., crashing). These results suggest that the phenomenon of emotional recalcitrance has been inadequately characterized in the philosophical literature (Díaz, unpublished).

#### 2.4. Are evaluative beliefs sufficient for emotion?

Some evaluative beliefs are not emotional. For example, I might believe that someone's remark is offensive without being angry. To constitute emotions, evaluative beliefs have to be about things that are important for the subject. In the example above, I probably believe that the remark does not constitute an *important* offense or is not offensive *for me*, and thus remain calm. These two aspects: importance and self-reference, are usually included as essential characteristics of the beliefs that constitute emotions (Nussbaum, 2001, pp. 40-42; Solomon, 1976, p. 127). But in order to be sufficient for emotion, evaluative beliefs should not only distinguish emotions from non-emotions, but also between emotion types.

Cognitivism posits that each emotion type is constituted by a specific evaluative belief. Fear is the belief that something is dangerous, anger is the belief that something is offensive, and so on. Thus, it seems like cognitive theories can easily account for the assumption that emotion types are distinct from each other. For example, I can be afraid that Sarah came to the party, or angry that Sarah came to the party. In these cases, the object of my emotion is the same (that Sarah came to the party). The difference lies in how I evaluate the event in each case. If I am afraid, I believe that there is an upcoming danger, perhaps because Sarah is an aggressive person. If I am angry, I take her coming to the party as an offense, perhaps because I didn't invite her. Since evaluative beliefs are different across emotion types, they are sufficient to individuate emotions:

P1. Emotion types are distinct from each other.

P2. Across emotion types, evaluative beliefs are distinct from each other.

C1. Evaluative beliefs are sufficient to individuate emotions.

P2 finds empirical support in a study by Scherer and Meuleman (2013). In this study, participants recalled a past emotional experience and reported their evaluations of the emotion-eliciting event. Using participants' reported evaluations and theoretical assumptions about the relation between emotions and evaluative beliefs, the authors were able to predict the emotion that participants experienced in 51% of the cases. Taking into account that they considered thirteen different emotion types, this prediction is way above chance levels (7.7%).

Other studies have obtained similar results using machine learning models and cross-cultural data regarding people's explicit associations between emotions and evaluative beliefs (Meuleman and Scherer 2013; Meuleman et al. 2019). For example, Meuleman and colleagues (2019) found that evaluative beliefs predict specific emotion types with a probability between 68% (for guilt and sadness) and 23% (for anxiety). As they considered twenty-four different emotions, this prediction is again above chance levels (4.2%). Thus, it seems like evaluative beliefs do a relatively good job of differentiating emotion types, supporting P2.

## **2.5. Further Readings**

Apart from the references already provided in the text, readers interested in the nature of emotion can dig deeper into the topic by consulting the edited collections *Thinking about feeling: Contemporary Philosophers on Emotions* (Solomon 2004) and *The Ontology of Emotions* (Naar and Teroni 2017), as well as the *Stanford Encyclopedia of Philosophy* entry on emotion (Scarantino and de Sousa 2018). The first two compile the work of philosophers, while the latter integrates emotion research in both philosophy and psychology.

## **3. Further Topics**

The studies reviewed in the previous section aim to inform questions regarding emotions in general. Other experimental-philosophical studies have focused on specific phenomena that could be understood as emotional but deserve special attention. In particular, much work has been devoted to studying happiness, pain, “being moved”, and basic emotions.

### **3.1. Happiness**

In a series of papers, Phillips and colleagues (2011, 2014, 2017) present compelling evidence that the folk concept of happiness encodes not only descriptive information regarding the psychological states of the agent but also normative considerations about the moral value of her life (as other authors had suggested, e.g., Foot 2001). The design of these studies consists of presenting participants with vignettes describing an agent who lives either a morally good or a morally bad life. In both cases, the agent experiences high pleasure, low pain, and is highly satisfied with her life. Results consistently show that people are less likely to attribute happiness to the morally bad agent, despite her having the same psychological states as the morally good agent.

The findings above have been interpreted as evidence that the folk concept of happiness is partially moral. However, Díaz and Reuter (2021) have argued that the effect recorded in these studies is better explained in terms of fittingness rather than moral norms. In a series of studies considering both happiness and fear, they show that people are more willing to attribute emotion when the emotion fits the situation in which it is experienced (e.g., happiness about something good vs. happiness about something bad), even when the situation is morally neutral (e.g., fear towards something dangerous vs. fear towards something harmless). In line with this idea, Kneer and Haybron (2019) present a set of studies suggesting that the folk concept of

happiness includes both internal (psychological) and external (situational) factors. Importantly, however, they found that the folk concept of happiness is much less sensitive to external factors than the folk concept of wellbeing.

Further studies have recently investigated the descriptive content of our concepts of happiness and wellbeing. Cova and Deplanque (unpublished) asked participants to define the terms “happiness” and “wellbeing” in their own words using open-ended text questions. After coding participants’ definitions, they found some notable differences in people’s understanding of happiness vs. wellbeing. While many participants mentioned health (~55%) and quality of life (~25%) in their definition of wellbeing, these aspects were absent in most of the participants’ definitions of happiness. Conversely, many participants mentioned positive feelings (~80%) and satisfaction (~35%) in their definition of happiness, but very few participants mentioned these in their definition of wellbeing. In line with this latter result, Reuter and colleagues (unpublished) found that people understand happiness mostly in terms of positive feelings. In a series of studies, they show that people tend to attribute happiness to a person if she feels good most of the time, regardless of whether she is satisfied with her life or not.

### **3.2. Pain**

Many studies have investigated people’s use of the concept of pain (for a review, see Sytsma and Reuter 2017). The main question being tested in these studies is whether pain is considered to be mental (i.e., an experience) or bodily (i.e., a physical condition). Several arguments have been put forward to defend either view.

A much-discussed argument in the (experimental) philosophy of pain is the so-called pain-in-the-mouth argument (Block 1983). The argument goes as follows: There is a pain in my



fingertip; The fingertip is in my mouth; Therefore there is a pain in my mouth. Intuitively, the argument fails. But why? According to some, the conclusion doesn't follow because pain is a (non-spatially located) mental state. Against this, Reuter and colleagues (2019) provide evidence that the argument fails because the conclusion (although technically correct) pragmatically implies that "there is something wrong with the speaker's mouth". This interpretation supports a bodily view of pain. However, Liu (2020) presents evidence that the conclusion does not *imply* but rather *entails* that the speaker's mouth hurts because people understand pain as a mental state.

Other arguments build on the existence of different types of pain. For example, if there are unfelt or shared pains, this will go against the idea that pain is essentially a (subjective, private) experience. The same is true for the existence of pain hallucinations, which would also suggest that pains are bodily rather than mental. Using vignette studies and text analyses, it has been shown that people accept the possibility of unfelt pains (Reuter and Sytsma 2020) pain illusions (Reuter 2011, Reuter et al. 2014), and shared pains (Sytsma 2010). Thus, it seems that people have a body-centric view of pain. However, recent studies have shown that people's attributions of pain are subject to context effects and, depending on the wording of the vignettes we use, these attributions can fit either a body- or a mind-centric view of pain. This suggests that the folk concept of pain is a hybrid of bodily and mental aspects (Borg et al. 2019, Salomons et al. 2021), although some have argued that the best interpretation of the results is that pain terms are polysemous (Liu, forthcoming).

Finally, we should not overlook the vast number of empirical studies on people's pain experiences. Some of these studies have already been used for philosophical purposes. For example, studies on the correlates of pain have been used to question the claim that pain is a unitary phenomenon; although there is disagreement regarding whether this makes "pain"

unsuitable for scientific inquiry (Corns 2016, 2020) or we can nevertheless make progress in explaining, predicting, and treating pain (Coninx 2020). Empirical studies on people's experience of pain have also been used to argue against specific theories of pain (Casser 2021, Coninx 2021), and there is much empirical work that is philosophically relevant and has not received attention yet (Corns 2018).

### **3.3. Being moved**

The phenomenon we refer to by using the expression “being moved” has also been the object of much empirical work (see Cova et al. 2017 and Cullhed 2020 for reviews). The main questions here concern whether “being moved” can be considered a distinctive emotional state (Cova and Deonna 2014) or rather a blend of other emotions (Kuehnast et al. 2014, Menninghaus et al. 2015), and how we should characterize its eliciting conditions. In particular, researchers have investigated whether being moved is a response to instantiations of positive core values (Cova and Deonna 2014), attachment (Menninghaus et al. 2015), communal sharing (Fiske et al. 2017), or depth and profundity (Cova et al. 2017).

In a seminal paper, Cova and Deonna (2014), present some evidence regarding people's descriptions of episodes in which they felt moved. In particular, they collected responses regarding features that are diagnostic of emotional episodes: evaluative appraisals, bodily feelings, and action tendencies. Their results suggest that “being moved” is a distinctive emotional state, involving all the characteristic features of emotion. Others, however, have collected evidence showing that people often mention other positive (joy) and negative (sadness) emotions when describing their “moving” experiences (Kuehnast et al. 2014; Menninghaus et al. 2015), suggesting that “being moved” refers to a mix of different emotions.

The studies above approach the topic by collecting people’s descriptions of their past experiences, either in free-text or forced-choice questionnaires. But studies on “being moved” have also used emotion induction techniques (i.e., presenting participants with evocative stimuli) to elucidate what situations evoke being moved (Landmann et al. 2019), or the physiological responses associated with these experiences (Zickfeld et al. 2020). These studies help us further understand the phenomenon of being moved. At a more general level, debates around the nature of “being moved” highlight the problem of finding agreed-upon criteria to carve the emotional domain.

### **3.4. Basic emotions**

According to basic emotion theory (Ekman 1999), there is a subset of emotions (typically anger, sadness, fear, disgust, and joy) that are the result of evolutionary pressures and have their roots in hard-wired mechanisms in the brain. If this is the case, each basic emotion must be associated with activity in a specific brain region or network of regions. In other words, there should be distinct “basic emotion circuits” in the brain (but see Scarantino and Griffiths 2011).

To test the abovementioned claim, Lindquist and colleagues (2012) conducted a meta-analysis of the results from neuroimaging studies investigating the neural correlates of (the perception and experience of) anger, sadness, fear, disgust, and joy. Their results show significant overlap between the neural correlates of these emotions, suggesting that there are no basic emotion circuits in the brain (but see Celeghin et al. 2017, Loaiza 2021). For example, the amygdala, which is sometimes taken to be the ‘fear area’, or at least the most important hub in a fear

circuit, was also consistently recruited by the experience and perception of anger, sadness, disgust, and joy.

Other studies, however, have shown that it is possible to neurally distinguish between basic emotions if we look at distributed (vs. localized) patterns of brain activity (see Kragel and LaBar 2016, for a review). This suggests that there are basic emotion circuits in the brain. However, it has been noted that the success of these studies in discriminating between basic emotions has to do with predictive power, and predictive power does not necessarily involve the existence of dedicated neural networks (Hebart and Baker 2017, Ritchie et al. 2017). Indeed, the distributed patterns of brain activity identified in these studies are not necessarily present in any of the individual instances of emotion (Clark-Polner et al. 2016). Thus, this type of evidence would not support the existence of hard-wired mechanisms for basic emotions (Díaz 2019).

### **3.5. Other**

In an early study on people's understanding of emotion, Reisenzein (1995) tested semantic claims about the relationship between non-basic and basic emotions. In particular, Reisenzein tested whether non-basic emotions are understood as modifications or combinations of basic emotions (Johnson-Laird and Oatley 1989). For example, whether euphoria is just intense happiness rather than a distinct emotion. Participants' judgments regarding the conditional probability of having [basic emotion] given [non-basic emotion], as well as the possibility of having [non-basic emotion] without [basic emotion], did not support the claim that non-basic emotions can be reduced to basic emotions.

Kurth and Kosacz (unpublished) tested people's judgments regarding the possibility of emotional error. That is, cases in which someone is wrong about the emotion she is feeling. According to some versions of constructivist and feeling theories of emotion, it is not possible to be mistaken about one's own emotions; either because there is no matter of fact about emotions, or because first-person judgments are authoritative. Their results show that people think it is possible to be mistaken about one's own emotions, and that extant alternative interpretations in terms of a lack of attention or understanding, on the one hand, or self-deception, on the other, cannot explain away these results.

Díaz and Reuter (unpublished) present a series of studies showing that people can distinguish between the intentional (world-directed) and phenomenal (felt) aspects of emotion by using the expressions "being [emotion]" and "feeling [emotion]", respectively. In two corpus linguistic analyses, they show that (1) proponents of Cognitive theories of emotion show a stronger preference for using the expression "being [emotion]" vs. "feeling [emotion]" than proponents of Somatic theories of emotion, and (2) laypeople show the same preference when specifying the intentional object of their emotions vs. specifying the cause of their emotions. Vignette studies depicting situations of cognitive evaluation (and no somatic feel) vs. somatic feel (and no cognitive evaluation) showed the same asymmetry. The authors use this data to support a conceptual separation between (non-phenomenal) emotional attitudes and (non-intentional) emotional feelings.

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## References

- Barlassina, Luca, and Albert Newen. 2014. "The Role of Bodily Perception in Emotion: In Defense of an Impure Somatic Theory." *Philosophy and Phenomenological Research* 89 (3): 637–78. <https://doi.org/10.1111/phpr.12041>.
- Block, Ned. 1983. "Mental Pictures and Cognitive Science." *Philosophical Review* 92 (4): 499–541.
- Borg, Emma, Nathaniel Hansen, and Tim Salomons. 2019. "The Meaning of Pain Expressions and Pain Communication." In *Meanings of Pain*, 261–82. [https://doi.org/10.1007/978-3-030-24154-4\\_14](https://doi.org/10.1007/978-3-030-24154-4_14).
- Cannon, Walter. 1927. "The James-Lange Theory of Emotions : A Critical Examination and an Alternative Theory." *American Journal of Psychology* 39 (3): 106–24. <https://doi.org/10.2307/1415404>.
- Casser, Laurenz C. 2021. "The Function of Pain." *Australasian Journal of Philosophy* 99 (2): 364–78. <https://doi.org/10.1080/00048402.2020.1735459>.
- Celeghin, Alessia, Matteo Diano, Arianna Bagnis, Marco Viola, and Marco Tamietto. 2017. "Basic Emotions in Human Neuroscience: Neuroimaging and Beyond."

*Frontiers in Psychology* 8 (August): 1432.

<https://doi.org/10.3389/fpsyg.2017.01432>.

Clark-Polner, Elizabeth, Timothy D. Johnson, and Lisa Feldman Barrett. 2016.

“Multivoxel Pattern Analysis Does Not Provide Evidence to Support the Existence of Basic Emotions.” *Cerebral Cortex* 27 (3): bhw028.

<https://doi.org/10.1093/cercor/bhw028>.

Cobos, Pilar, María Sánchez, Carmen García, María Nieves Vera, and Jaime Vila. 2002.

“Revisiting the James versus Cannon Debate on Emotion: Startle and Autonomic Modulation in Patients with Spinal Cord Injuries.” *Biological Psychology* 61 (3):

251–69. [https://doi.org/10.1016/S0301-0511\(02\)00061-3](https://doi.org/10.1016/S0301-0511(02)00061-3).

Coninx, Sabrina. 2020. *Experiencing Pain*. De Gruyter.

<https://doi.org/10.1515/9783110688405>.

———. 2021. “Strong Representationalism and Bodily Sensations: Reliable Causal Covariance and Biological Function.” *Philosophical Psychology* 34 (2): 210–32.

<https://doi.org/10.1080/09515089.2020.1858476>.

Corns, Jennifer. 2016. “Pain Eliminativism: Scientific and Traditional.” *Synthese* 193

(9): 2949–71. <https://doi.org/10.1007/s11229-015-0897-8>.

———. 2018. “Recent Work on Pain.” *Analysis* 78 (4): 737–53.

<https://doi.org/10.1093/analys/any055>.

———. 2020. *The Complex Reality of Pain*. *The Complex Reality of Pain*. Routledge.

<https://doi.org/10.4324/9780429342981>.

- Cova, Florian, and Julien A. Deonna. 2014. "Being Moved." *Philosophical Studies* 169 (3): 447–66. <https://doi.org/10.1007/s11098-013-0192-9>.
- Cova, Florian, Julien Deonna, and David Sander. 2017. "'That's Deep!': The Role of Being Moved and Feelings of Profundity in the Appreciation of Serious Narratives." In *The Palgrave Handbook of Affect Studies and Textual Criticism*, 1–883. <https://doi.org/10.1007/978-3-319-63303-9>.
- Cova, Florian, and S Deplanque. 2021. "The Everyday Concept of Well-Being."
- Cullhed, Eric. 2020. "What Evokes *Being Moved*?" *Emotion Review* 12 (2): 111–17. <https://doi.org/10.1177/1754073919875216>.
- D'Arms, Justin, and Daniel Jacobson. 2003. "VIII. The Significance of Recalcitrant Emotion (or, Anti-Quasijudgmentalism)." *Royal Institute of Philosophy Supplement* 52: 127–45. <https://doi.org/10.1017/s1358246100007931>.
- Deonna, Julien A, and Fabrice Teroni. 2012. *The Emotions : A Philosophical Introduction*. New York: Routledge. <https://doi.org/10.1016/B978-0-12-415956-3.00001-4>.
- Deonna, Julien A., and Fabrice Teroni. 2015. "Emotions as Attitudes." *Dialectica* 69 (3): 293–311. <https://doi.org/10.1111/1746-8361.12116>.
- . 2017. "Getting Bodily Feelings Into Emotional Experience in the Right Way." *Emotion Review* 9 (1): 55–63. <https://doi.org/10.1177/1754073916639666>.
- Díaz, Rodrigo. 2019. "Using FMRI in Experimental Philosophy: Exploring the Prospects." *Methodological Advances in Experimental Philosophy*, 1–24.



- . 2022a. “What Do People Think Is an Emotion?” *Affective Science*.  
<https://doi.org/10.1007/s42761-022-00113-w>.
- . 2022b. “Emotions and the Body. Testing the Subtraction Argument.”  
*Philosophical Psychology*, June, 1–19.  
<https://doi.org/10.1080/09515089.2021.1945023>.
- . n.d. “How to Understand Recalcitrant Emotions.”
- Díaz, Rodrigo, and Kevin Reuter. 2021. “Feeling the Right Way: Normative Influences on People’s Use of Emotion Concepts.” *Mind and Language* 36 (3): 451–70.  
<https://doi.org/10.1111/mila.12279>.
- . n.d. “Engineering Affect: Emotional Feelings vs. Emotional Attitudes.”
- Döring, Sabine A. 2007. “Seeing What to Do: Affective Perception and Rational Motivation.” *Dialectica* 61 (3): 363–94. <https://doi.org/10.1111/j.1746-8361.2007.01105.x>.
- Ekman, Paul. 1999. “Basic Emotions.” *Handbook of Cognition and Emotion*.  
<https://doi.org/10.1017/S0140525X0800349X>.
- Fiske, Alan Page, Thomas Schubert, and Beate Seibt. 2017. “‘Kama Muta’ or ‘Being Moved by Love’: A Bootstrapping Approach to the Ontology and Epistemology of an Emotion.” In *Universalism without Uniformity: Explorations in Mind and Culture*, 79–100.  
<https://www.degruyter.com/document/doi/10.7208/9780226501710-007/html>.

- Fontaine, Johnny J. R., Klaus R. Scherer, and Cristina Soriano. 2013. *Components of Emotional Meaning : A Sourcebook*. Oxford University Press.
- Foot, Philippa. 2001. *Natural Goodness*. New York: Oxford University Press.  
<https://doi.org/10.1093/0198235089.001.0001>.
- Gendron, Maria, and Lisa Feldman Barrett. 2009. "Reconstructing the Past: A Century of Ideas about Emotion in Psychology." *Emotion Review* 1 (4): 316–39.  
<https://doi.org/10.1177/1754073909338877>.
- Greenspan, Patricia S. 1981. "Emotions As Evaluations." *Pacific Philosophical Quarterly* 62 (2): 158–69. <https://doi.org/10.1111/j.1468-0114.1981.tb00054.x>.
- Grzankowski, Alex. 2017. "The Real Trouble with Recalcitrant Emotions." *Erkenntnis* 82 (3): 641–51. <https://doi.org/10.1007/s10670-016-9836-4>.
- Hebart, Martin N., and Chris I. Baker. 2017. "Deconstructing Multivariate Decoding for the Study of Brain Function." *NeuroImage*, no. April: 1–15.  
<https://doi.org/10.1016/j.neuroimage.2017.08.005>.
- Hietanen, Jari K., Enrico Glerean, Riitta Hari, and Lauri Nummenmaa. 2016. "Bodily Maps of Emotions across Child Development." *Developmental Science* 19 (6): 1111–18. <https://doi.org/10.1111/desc.12389>.
- Hohmann, George W. 1966. "Some Effects of Spinal Cord Lesions on Experienced Emotional Feelings." *Psychophysiology* 3 (2): 143–56.  
<https://doi.org/10.1111/j.1469-8986.1966.tb02690.x>.

- Hufendiek, Rebekka. 2016. *Embodied Emotions : A Naturalist Approach to a Normative Phenomenon*. New York: Routledge.
- James, William. 1884. "What Is an Emotion ?" *Mind* 9 (34): 188–205.  
<https://doi.org/10.1093/mind/LI.202.200>.
- Johnson-Laird, P. N., and Keith Oatley. 1989. "The Language of Emotions: An Analysis of a Semantic Field." *Cognition and Emotion* 3 (2): 81–123.  
<https://doi.org/10.1080/02699938908408075>.
- Jong, Peter J de. 2015. "Danger-Confirming Reasoning and the Persistence of Phobic Beliefs." *Aberrant Beliefs and Reasoning*. Psychology Press.  
<https://doi.org/10.4324/9781315797861-15>.
- Kenny, Anthony. 1963. *Action, Emotion and Will*. London: Routledge.
- Kneer, Markus. 2019. "Happiness and Well-Being : Is It All in Your Head ? Evidence from the Folk."
- Kragel, Philip A., and Kevin S. LaBar. 2016. "Decoding the Nature of Emotion in the Brain." *Trends in Cognitive Sciences* 20 (6): 444–55.  
<https://doi.org/10.1016/j.tics.2016.03.011>.
- Kuehnast, Milena, Valentin Wagner, Eugen Wassiliwizky, Thomas Jacobsen, and Winfried Menninghaus. 2014. "Being Moved: Linguistic Representation and Conceptual Structure." *Frontiers in Psychology* 5 (NOV): 1–11.  
<https://doi.org/10.3389/fpsyg.2014.01242>.
- Kurth, Charlie, and Daniel Kosacz. n.d. "Emotion and Error."

- Landmann, Helen, Florian Cova, and Ursula Hess. 2019. "Being Moved by Meaningfulness: Appraisals of Surpassing Internal Standards Elicit Being Moved by Relationships and Achievements." *Cognition and Emotion* 33 (7): 1387–1409. <https://doi.org/10.1080/02699931.2019.1567463>.
- Lindquist, Kristen a, Tor D Wager, Hedy Kober, Eliza Bliss-Moreau, and Lisa Feldman Barrett. 2012. "The Brain Basis of Emotion: A Meta-Analytic Review." *The Behavioral and Brain Sciences* 35 (3): 121–43. <https://doi.org/10.1017/S0140525X11000446>.
- Liu, Michelle. 2020. "The Intuitive Invalidity of the Pain-in-Mouth Argument." *Analysis (United Kingdom)* 80 (3): 463–74. <https://doi.org/10.1093/analys/anaa002>.
- . n.d. "The Polysemy View of Pain." *Mind & Language*, 1–23.
- Loaiza, Juan R. 2021. "Emotions and the Problem of Variability." *Review of Philosophy and Psychology* 12 (2): 329–51. <https://doi.org/10.1007/s13164-020-00492-8>.
- Machery, Edouard. 2017. *Philosophy Within Its Proper Bounds*. Oxford: Oxford University Press.
- McNally, Richard J., and Christine E. Louro. 1992. "Fear of Flying in Agoraphobia and Simple Phobia: Distinguishing Features." *Journal of Anxiety Disorders* 6 (4): 319–24. [https://doi.org/10.1016/0887-6185\(92\)90003-P](https://doi.org/10.1016/0887-6185(92)90003-P).
- Menninghaus, Winfried, Valentin Wagner, Julian Hanich, Eugen Wassiliwizky, Milena Kuehnast, and Thomas Jacobsen. 2015. "Towards a Psychological Construct of Being Moved." Edited by Howard Nusbaum. *PLOS ONE* 10 (6): e0128451. <https://doi.org/10.1371/journal.pone.0128451>.

- Meuleman, Ben, M. Agnes, F. Johnny, Olivier Renaud, and Klaus Scherer. 2019. "Interaction and Threshold Effects of Appraisal on Componential Patterns of Emotion: A Study Using Cross-Cultural Semantic Data." *Emotion* 19 (3): 425–42. <https://doi.org/10.1037/emo0000449>.
- Meuleman, Ben, and Klaus Scherer. 2013. "Nonlinear Appraisal Modeling: An Application of Machine Learning to the Study of Emotion Production." *IEEE Transactions on Affective Computing* 4 (4): 398–411. <https://doi.org/10.1109/T-AFFC.2013.25>.
- Naar, Hichem. 2018. "The Real Issue with Recalcitrant Emotions: Reply to Grzankowski." *Erkenntnis* 0123456789. <https://doi.org/10.1007/s10670-018-0063-z>.
- Naar, Hichem, and Fabrice Teroni, eds. 2017. *The Ontology of Emotions*. Cambridge University Press. <https://doi.org/10.1017/9781316275221>.
- Nummenmaa, Lauri, Enrico Glerean, Riitta Hari, and Jari K Hietanen. 2014. "Bodily Maps of Emotions." *Proceedings of the National Academy of Sciences of the United States of America* 111 (2): 646–51. <https://doi.org/10.1073/pnas.1321664111>.
- Nussbaum, Martha. 2001. *Upheavals of Thought*. Cambridge: Cambridge University Press. <https://doi.org/10.5840/gfpj200223213>.
- . 2004. "Emotions as Judgments of Value and Importance." In *Thinking About Feeling: Contemporary Philosophers on Emotions*, edited by R. C. Solomon, 183–99. New York: Oxford University Press.

- Phillips, Jonathan, Julian de Freitas, Christian Mott, June Gruber, and Joshua Knobe. 2017. "True Happiness: The Role of Morality in the Folk Concept of Happiness." *Journal of Experimental Psychology: General* 146 (2): 165–81.  
<https://doi.org/10.1037/xge0000252>.
- Phillips, Jonathan, Luke Misenheimer, and Joshua Knobe. 2011. "The Ordinary Concept of Happiness (and Others Like It)." *Emotion Review* 71 (3): 929–37.  
<https://doi.org/10.1177/1754073911402385>.
- Phillips, Jonathan, Sven Nyholm, and Shen-Yi Liao. 2014. "The Good in Happiness." In *Oxford Studies in Experimental Philosophy*, edited by T Lombrozo, J Knobe, and S Nichols, 253–293. Oxford: Oxford University Press.
- Prinz, Jesse. 2004. *Gut Reactions: A Perceptual Theory of Emotion*. New York: Oxford University Press.
- Quigley, Karen S, Kristen a Lindquist, and Lisa Feldman Barrett. 2014. "Inducing and Measuring Emotion and Affect: Tips , Tricks , and Secrets." In *Handbook of Research Methods in Social and Personality Psychology*, edited by Harry Reis and Charles Judd, 220–52. New York: Cambridge University Press.  
<https://doi.org/10.1017/CBO9780511996481>.
- Reisenzein, Rainer. 1995. *On Oatley and Johnson-Laird's Theory of Emotion and Hierarchical Structures in the Affective Lexicon. Cognition and Emotion*. Vol. 9.  
<https://doi.org/10.1080/02699939508408973>.
- . 2021. "Tasks For A Theoretical Psychology of Emotion." *Cognition & Emotion*.

- Reuter, K., M. Messerli, and L. Barlassina. n.d. "Not More than a Feeling: An Experimental Investigation into the Folk Concept of Happiness."
- Reuter, Kevin. 2011. "Distinguishing the Appearance." *Journal of Consciousness Studies* 18 (9–10): 1–16.
- Reuter, Kevin, Dustin Phillips, and Justin Sytsma. 2014. "Hallucinating Pain." *Advances in Experimental Philosophy of Mind*, 75–99.  
<https://doi.org/10.5040/9781472594136.ch-004>.
- Reuter, Kevin, Michael Sienhold, and Justin Sytsma. 2019. "Putting Pain in Its Proper Place." *Analysis (United Kingdom)* 79 (1): 72–82.  
<https://doi.org/10.1093/analys/any030>.
- Reuter, Kevin, and Justin Sytsma. 2020. "Unfelt Pain." *Synthese* 197 (4): 1777–1801.  
<https://doi.org/10.1007/s11229-018-1770-3>.
- Ritchie, J Brendan, David Kaplan, and Colin Klein. 2017. "Decoding The Brain: Neural Representation And The Limits Of Multivariate Pattern Analysis In Cognitive Neuroscience." *BioRxiv*, 127233. <https://doi.org/10.1101/127233>.
- Roberts, Robert C . 1988. "What an Emotion Is : A Sketch." *Philosophical Review* 97 (2): 183–209.
- . 2003. *Emotions: An Essay in Aid of Moral Psychology*.
- Salomons, Tim v., Richard Harrison, Nat Hansen, James Stazicker, Astrid Grith Sorensen, Paula Thomas, and Emma Borg. 2021. "Is Pain 'All in Your Mind'?"

- Examining the General Public's Views of Pain." *Review of Philosophy and Psychology*, May, 1–16. <https://doi.org/10.1007/s13164-021-00553-6>.
- Scarantino, Andrea, and Paul Griffiths. 2011. "Don't Give up on Basic Emotions." *Emotion Review* 3 (4): 444–54. <https://doi.org/10.1177/1754073911410745>.
- Scarantino, Andrea, and Ronald de Sousa. 2018. "Emotion." In *Stanford Encyclopedia of Philosophy*, edited by Edward N Zalta. <https://doi.org/10.1111/1467-9973.00225>.
- Scherer, K. R. 2009. "Emotions Are Emergent Processes: They Require a Dynamic Computational Architecture." *Philosophical Transactions of the Royal Society B: Biological Sciences* 364 (1535): 3459–74. <https://doi.org/10.1098/rstb.2009.0141>.
- Scherer, Klaus R. 2005. "What Are Emotions? And How Can They Be Measured?" *Social Science Information* 44 (4): 695–729. <https://doi.org/10.1177/0539018405058216>.
- Scherer, Klaus R., and Ben Meuleman. 2013. "Human Emotion Experiences Can Be Predicted on Theoretical Grounds: Evidence from Verbal Labeling." Edited by Trevor Bruce Penney. *PLoS ONE* 8 (3): e58166. <https://doi.org/10.1371/journal.pone.0058166>.
- Solomon, Robert C. 1976. *The Passions*. New York: Anchor Press.
- . 2004. *Thinking about Feeling : Contemporary Philosophers on Emotions*. Oxford University Press. <https://global.oup.com/academic/product/thinking-about-feeling-9780195153170?cc=us&lang=en&>.



- Sytsma, Justin. 2010. "Dennett's Theory of the Folk Theory of Consciousness." *Journal of Consciousness Studies* 17 (3–4): 107–30.
- Sytsma, Justin, and Kevin Reuter. 2017. "Experimental Philosophy of Pain." *Journal of Indian Council of Philosophical Research* 34 (3): 611–28.  
<https://doi.org/10.1007/s40961-017-0121-y>.
- Tappolet, Christine. 2016. *Emotions, Values, and Agency*. New York: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199696512.001.0001>.
- Volynets, Sofia, Enrico Glerean, Jari K. Hietanen, Riitta Hari, and Lauri Nummenmaa. 2020. "Bodily Maps of Emotions Are Culturally Universal." *Emotion* 20 (7): 1127–36. <https://doi.org/10.1037/emo0000624>.
- Walder, C. P., J. S. McCracken, M. Herbert, P. T. James, and N. Brewitt. 1987. "Psychological Intervention in Civilian Flying Phobia. Evaluation and a Three-Year Follow-Up." *British Journal of Psychiatry* 151 (OCT.): 494–98.  
<https://doi.org/10.1192/bjp.151.4.494>.
- Zickfeld, Janis H., Patrícia Arriaga, Sara Vilar Santos, Thomas W. Schubert, and Beate Seibt. 2020. "Tears of Joy, Aesthetic Chills and Heartwarming Feelings: Physiological Correlates of Kama Muta." *Psychophysiology* 57 (12): e13662.  
<https://doi.org/10.1111/psyp.13662>.

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