



**EMOTIONS AS NATURAL KINDS:  
A NATURALIST THEORY OF EMOTIONS IN JESSE PRINZ'S  
PHILOSOPHY OF MIND**

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**ABSTRACT:** Naturalism refers to the ideas of emerging sciences and employs studies developed by Psychology, Physics and Biology. The many sorts of naturalism range from those advocating the use of science to inform about cognitive processes in order to fix them to those who advocate the end of any normative claim of philosophy. Jesse Prinz, Ruth Millikan and Hilary Kornblith are recognized naturalist philosophers, with differences in their approaches, and they use the concept of 'natural kinds' to undertake their philosophical projects. On the other hand, emotions have become an ascending subject in philosophy of mind, mostly because of doubts about their status as mental states, which are disputed as feelings, thoughts, perceptual or quasi-perceptual states, or, something totally different. As a result, different theories of emotions are flourishing in philosophy of mind and cognitive psychology. In this text, the intent is to present the exemplary connection of metaphysics, epistemology and philosophy of mind through the concept of natural kinds in Prinz's philosophy of mind and theory of emotions. This intent will count with Millikan's and Kornblith's useful analyses of the concept of natural kind.

**KEYWORDS:** Theory of emotions, Natural kinds, Mind, Naturalism.

**RESUMO:** O naturalismo remete às ideias de ciências emergentes e emprega estudos desenvolvidos pela Psicologia, Física e Biologia. Os muitos tipos de naturalismo vão desde aqueles que defendem o uso da ciência para informar sobre processos cognitivos, a fim de corrigi-los, àqueles que defendem o fim de qualquer reivindicação normativa da filosofia. Jesse Prinz, Ruth Millikan e Hilary Kornblith são filósofos naturalistas reconhecidos, com diferenças em suas abordagens, e usam o conceito de "tipos naturais" para empreender seus projetos filosóficos. Por outro lado, as emoções tornaram-se um assunto ascendente na filosofia da mente, principalmente por causa de dúvidas sobre seu status como estados mentais, que são disputados como sentimentos, pensamentos, estados perceptivos ou quase perceptivos, ou, algo totalmente diferente disso. Como resultado, diferentes teorias das emoções estão florescendo na filosofia da mente e na psicologia cognitiva. Neste texto, a intenção é apresentar a conexão exemplar de metafísica, epistemologia e filosofia da mente por meio do conceito de tipos naturais na filosofia da mente e na teoria das emoções de Jesse Prinz. O intento contará com as úteis análises do conceito de tipos naturais de Ruth Millikan e Hilary Kornblith.

**PALAVRAS-CHAVE:** Teoria das emoções, Tipos naturais, Mente, Naturalismo.

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## 1. Prinz on natural kinds

Jesse Prinz (2004) presents a theory of emotions in which he affirms that all emotions are essentially alike. It is not that emotions are the same, but they all share something that makes them what they are. His view is that emotions have distinguishable properties that allow them to be seen not as merely simple feelings, a term that also encompasses sensations, drive, and moods. Assuming that position, his theory is linked with a concept of natural kinds which tries to guarantee a project of definition and classification of emotions.

Critics of the approach of natural kinds to emotions tend to compare them with beliefs. Beliefs are supposed to be a natural kind because they aim at truth as a success criterion while emotions do not have a common object to refer to. Prinz's position is to affirm that the success of emotions is established by their link with the environment, the way they produce well-being to their possessors.

Prinz pays special attention to Paul Griffiths' critic, mainly because it is based on the idea that emotions are not a natural kind, what Prinz calls "disunity thesis", in contrast with his unitarian thesis. Natural kinds are not dependent on the way human beings perceive the world but are actual limits among things in nature. We are supposed to carve the joints of the world by recognizing natural kinds and distinguishing them from non-natural kinds, those deriving from our subjective and social understanding of nature (PRINZ, 2004. p. 80).

Prinz presents Richard Boyd's definition of natural kinds – endorsed by Griffiths – as homeostatic property clusters. Boyd states that only when kinds are identified by natural definitions, it is possible to obtain natural scientific explanations, and this definition is obtained by means of a naturalistic account of reference:

The reference of a term is established by causal connections of the right sort between the use of the term and (instances of) its referent.

... a term *t* refers to a kind (property, relation, etc.) *k* just in case there exist causal mechanisms whose tendency is to bring it about, over time, that what is predicated of the term *t* will be approximately true of *k*. (BOYD, 1988, p. 195)

According to Boyd, natural definitions – such as the molecular formulas of Chemistry – specify the necessary and sufficient conditions to participate in a particular kind. These definitions are a minimum number of properties clustered that controls the inclusion of something to a particular natural kind. The imprecision and vagueness of such definitions are seen as appropriate: "There are natural kinds, properties, etc. whose natural definitions involve a kind of property cluster together with an associated indeterminacy in extension" (BOYD, 1988, p. 196).

Contrary to what should be expected, Griffiths uses Boyd's definition of natural kinds to deny the unity of emotions. The reason is that emotions do not share a common cluster of homeostatic properties, and Griffiths presents a distinction among emotions to show that they are not the same. One of the sorts of emotions is 'affect programs':

... affect programs are complex responses that involve appraisals, bodily changes, and action dispositions in response to perceived stimuli. Affect programs are also culturally universal, are underwritten by specific neural circuits, and have homologues in nonhuman species. They are generally associated with specific facial expressions. (PRINZ, 2004. p. 81-82)

Affect programs are modular, specialized processing systems which respond to specific inputs and which are not directly influenced by other processing systems.

The other sort of emotions are 'higher cognitive emotions' and they are intrinsically cognitive. Some examples are envy, guilt, shame, pride, feelings of loyalty, and vengefulness. Higher cognitive emotions seem intrinsically linked to beliefs, for the former are not only influenced but also dependent on the latter to exist. It is necessary to recognize something as wrong to be ashamed of it. For Griffiths, higher cognitive emotions do not seem to be modular because they exist due to beliefs and are influenced by the latter. Higher cognitive emotions can be seen as products of natural selection but "We cannot infer traits from evolutionary stories or evolutionary stories from traits" (PRINZ, 2004. p. 83).

Assuming Robert Frank's position, Griffiths believes higher cognitive emotions have evolved as solutions to 'commitment problems'. People do not decide according to plans based on immediate expected usefulness and they refuse unfair deals. Emotions are 'irruptive motivations' and because of that, i.e., they interfere in an immediate input-output behavior. As a result, there is a reduction of the existence of cheaters and there is spreading of reciprocal behavior. Although affect programs and higher cognitive emotions are both irruptive motivations and probably folk psychology joins the two because of that, they are different and not of the same kind:

Griffiths thinks that Frank's theory may provide a good account of the higher cognitive emotions. That endorsement provides a crucial premise for his main point. Affect programs are rapid, modular response systems with homologues in nonhuman animals. Higher cognitive emotions are commitment clinchers that interact with beliefs and may be unique to human beings. (PRINZ, 2004. p. 84)

According to Griffiths, there are different causal mechanisms for both kinds of emotions, and real natural kinds require that they be similarly causally formed. Affect programs and higher cognitive emotions are not the same natural kind, and that is necessary for the unity of emotions.

Prinz does not accept this argument for the reason that he thinks all emotions can be causally understood by being irruptive motivations, and that would explain irrational practical

reasoning and why both kinds of emotions seem the same to folk psychology. Nevertheless, Prinz does not think irruptive motivation analysis is fruitful because it is too large and it would include feelings that are not emotions, like fatigue. The main difference between Prinz and Griffiths is the interpretation they give to the definition of natural kind developed by Boyd. For Prinz

I interpret Boyd's approach to natural kinds as quite liberal. There are many features that cluster together in similar ways. When two sets of states share some projectable homeostatic mechanism and not others, we can say they constitute both two distinct natural kinds and a common natural kind. (PRINZ, 2004. p. 85)

Prinz talks about marsupials and mammals as being the same natural kind when defined in terms of having warm blood and a common ancestry, but they are also different kinds due to the way they reproduce.

## 2. Millikan and Kornblith on natural kinds

Ruth Millikan (2000) talks about kinds when she deals with substances, but she prefers to call them 'real kinds' in contrast with 'nominal kinds'. She says that we have a lot of definitions of 'natural kinds' that capture kinds of many sorts, mainly to refer to classes identified by 'projectable properties' that make them possible to participate in explanations furnished by natural laws. For example, 'is green' is a natural kind because a predicate projects over a class of things. Millikan uses the term 'real kind' in order to state a stronger understanding of kinds as "subjects over which a variety of predicates are projectable" (MILLIKAN, 2000, p. 15). For her, real kinds (or natural kinds) are not properties, but objects with properties. This is much more than only a cluster of homeostatic properties.

Real kinds are not classes defined by one property, nor are they defined by a set of properties. Compare them with natural kinds. "Natural kinds" are sometimes taken as defined by sets of properties set apart because they are "correlated" in nature. (MILLIKAN, 2000. p. 16)

When natural kinds are understood this way, there is not a realistic compromise because they can be taken instrumentally. Millikan understands natural laws as grounded in nature, and if natural kinds are taken to be only properties ascribed to objects, kinds are understood as useful correlations, advocating an instrumentalist position that is not hers.

Millikan is worried about concrete bases for induction, a common naturalistic preoccupation, also seen in Hilary Kornblith (1993) who is one of the main defenders of naturalized epistemology and philosophy of mind who uses Boyd's notion of natural kinds. The defense of the possibility of inductive knowledge derives from the importance of science to the naturalistic approach. Accidental coincidence between beliefs about the world and the world is

something to be avoided.

Real kinds are kinds that allow successful inductions to be made from one or a few members to other members of the kind not by accident, but because supported by a ground in nature. What we need to clarify is what various sorts of natural grounds there might be that would hold the members of a kind together so that one member would be like another by natural necessity. There are, I believe, a number of different types of reasons for the occurrence in nature of real kinds, these accounting in different ways for success in generalizing over encounters. (MILLIKAN, 2000. p. 17-18)

According to Kornblith, in the case of water (H<sub>2</sub>O) there is a set of binding properties between atoms of hydrogen and oxygen that ensures a stable unit and subsequent characterization of a natural kind, which in turn plays an important role in the causal laws that operate on them. It is important that the cluster of properties be stable, not the object that owns them. Here, Kornblith takes Quine's idea that science is an explanatory element in epistemology; epistemology is part of science. Thus, knowledge is a concern of ethology, psychology and epistemology because it must be referred to when explaining the existence of successful behavior for the survival of the organism / species.

The knowledge that members of a species embody is the locus of a homeostatic cluster of properties: true beliefs that are reliably produced, that are instrumental in the production of behavior successful in meeting biological needs and thereby implicated in the Darwinian explanation of the selective retention of traits. (KORNBLITH, 2002, p. 62).

The category of beliefs that expresses the correlation between the information gathering and processing mechanisms and the environment will be instances of knowledge, and they will be understood as natural kinds. Knowledge is an ecological natural kind, because it is linked with the relationship between an organism and its environment. According to Kornblith, biology theorizes about environments not dependent on human interests, and it provides the conditions to identify the environment of a particular organism. Biology does not deal with unnatural changes in the environment; in general, environmental change is continuous, and even when it is discontinuous, it involves observable changes in the environment, which alter the behavior of organisms that live in it.

Recasting Hillary Putnam's presentation of natural kinds, Millikan states that they are kinds because they possess an inner nature, like the structure of molecules. This 'essence' is related to a superficial observable conjunction of characteristics or properties. The inner structure is a necessary one and results in a specific observable cluster of properties. Molecules and atomic particles are examples of this sort of natural kinds because they all have the same inner structure, and also planets and asteroids are kinds, "but because they were formed by the

same natural forces in the same sort of circumstances out of materials similar in relevant ways" (MILLIKAN, 2000, p. 18). Millikan stresses the same interpretation by Putnam and Kripke that natural kinds - or real kinds, as she uses the term - are known by empirical investigation.

Millikan also distinguishes between ahistorical, or eternal kinds, and historical kinds. Kinds are ahistorical when time and space make no difference to explain why their members are of the same kind. The contrary is said of the historical kinds because their members are recognized by indicating their historical relation.

The importance of this last sort of classification is to guarantee and refer to biological species as natural kinds because evolutionary biology states that organisms are of a certain species only if they share historical relations, i.e., the organisms that are of a certain kind, species, do not share traits independent on time, but they share common histories. Millikan quotes David Hull saying, "that by biologists' usage, species are not similarity classes but big, scattered, historical individuals enduring through time" (MILLIKAN, 2000, p.19). Homeostasis plays a role here because species are seen as homeostatic systems maintaining the stability when confronted with changes and influences that bring danger to maintain the species. There is stability when continuous selective pressures control harmful mutations and organisms with reproductive characteristics are the result of this homeostatic gene pool. "In sum, the members of biological taxa are like one another, not because they have inner or outer causes of the same ahistorical type, but because they bear certain historical relations to one another. ... Biological taxa are historical kinds" (MILLIKAN, 2000, p. 20).

Objects of the same historical kind are like one another because they are made from a process of reproduction that copies the originals or some models, or they are all produced to meet the requirements of the environment where they are found. Mainly, they are equal because they have a functional role, and in the case of species, this function is selective reproductive success.

Historical kinds are of great importance to social scientists' endeavors, since ethnic, social, economic, and vocational groups are their main concern. The fact that members of a historical kind show some traits because they have been classified as such does not prevent them from being used scientifically. They do not have 'essences' like ahistorical kinds but they need to have ontological grounds in a sense where a member of the kind will have the same properties of other member of the same kind, and that makes inductive inference possible. For this reason, species may be considered 'individuals' and "One can learn from sample members of a species about the whole species for much the same reason one can learn about one temporal

stage of a person from other temporal stages of the same person, and vice versa” (MILLIKAN, 2000, p. 24).

For Millikan, in the case of real kinds, even when they have vague boundaries, only science can situate an object in a kind. This is so mainly because predicates are projected within certain domains of nature in a non-accidental way. It is not a question of language or psychology boundaries. “What makes a substance a substance is that it can be appropriated by cognition for the grounded, not accidental, running of inductions, or projecting of invariants” (MILLIKAN, 2000, p. 26). From this point of view, some important concepts from the social sciences also can be seen as real kinds because while one can perceive ‘meal time’ as culturally driven, concepts like ‘war’ and ‘western industrial economy’ would have properties not varying through ages. Those, like biological categories as ‘animal’ and ‘mammal’, have properties which make them relate to real kinds in nature, and this is mainly because they are ‘substance templates’ that allows one to produce knowledge. “For those disciplines systematic enough to be clearly labeled as well-developed empirical sciences, the substances studied typically fall under well-focused substance templates, or under a hierarchy of such templates” (MILLIKAN, 2000. p. 30).

### **3. Kornblith on inductive inference**

Kornblith presents one of the best defenses of induction. Kornblith’s concerns regarding inductive inference stems from its importance to the constitution of science. In his book *Inductive inference and its natural ground* (1993), Kornblith poses two questions: What is the world that we may know? In addition, what are we that we may know the world? His answers to these questions attempt to explain the fit between our psychology and the structure of the world, showing what the fit is and how evolution has produced it.

Epistemology has the purpose of evaluating the processes of acquisition of beliefs and to recommend corrections. Those corrections can be normative, indicating the right conditions upon which a belief-acquisition process works and indicates which processes they are. That is a responsibility of psychology and the normative approach has to be guided by empirical investigations: “If we want a substantive and satisfying explanation of how knowledge is possible, we must turn to the best current theories of the nature of the world and our best current psychological theories, and see to what extent these dovetail” (KORNBLITH, 1993, p. 5).

Worried with the defense of scientific realism, Kornblith uses natural kinds as the possible explanation of induction and to answer the criticisms of a naturalistic approach to

epistemology. Those criticisms center in supposed studies that would show a human tendency to produce incorrect inductive inferences. For him, “A natural kind is a cluster of properties which, when realized together in the same substance, work to maintain and reinforce each other, even in the face of changes in the environment” (KORNBLITH, 1993, p. 35). The conjunction of observable properties is a byproduct of homeostatic clusters of properties in the unobservable level. Reliable inductive inference is possible because of natural kinds, since there would be a link between observable and unobservable properties. What members of the same natural kind look like? “When certain unobservable properties reside in a homeostatic relationship, a collection of observable properties inevitably flow from that unobservable base” (KORNBLITH, 1993, p. 37). Are unobservable properties real? How do we know a real kind in nature, not just a nominal kind, is identified? We can revise our kinds in order to make them closer to something deeper than an arbitrary classification of observable characteristics. This is what explains the success of the scientific project that is actually the main example of the human cognitive activity which has implemented this approach. Merely observable properties, with only classifying purposes, do not explain the predictive success of the natural sciences; otherwise, the success of inductive inferences would be miraculous.

Kornblith argues that it is not enumerative induction that provides the observables and that it is not the simple induction that provides the unobservables. “Unobservables are then postulated to explain the constant conjunction of observable properties” (KORNBLITH, 1993, p. 42). The mechanism of production of these postulates is the inference of an explanation, and it allows prediction and application. What should be sought is the grouping of observable properties that are not human creation, as in the paradigmatic case of the chemical elements. Therefore, the natural sciences guide us, and they do not admit a priori philosophical decrees. “If a metaphysical claim would have us reject some piece of successful science as improper, then, to that extent, this is evidence against the metaphysical claim” (KORNBLITH, 1993, p. 48). The inductive inference will only be reliable if our classifications reflect real kinds in nature, and not all classificatory schemes correspond to real natural kinds. Moreover, there are overlapping structures among natural kinds. This explains the antireductionist position of Kornblith, in which different sciences make different cuts (natural kinds) of the different features of the world; there is a rich ontology of objects, causal forces and natural kinds.

Kornblith, following an obligation of the naturalist project, presents a series of studies that would support the idea that the process of inductive inference is trustworthy because it is based on the real structure of the world and on the identification of natural kinds. 4 year-old



children give answers about the classification of objects in terms of natural kinds and they do not regard apparent similarities, obtaining 68% of correct answers. The same results occur with 2 year-old children. Such results lead Kornblith to claim that the intuitive and expected result of recognition by superficial similarities is overrated, and that an innate receptivity to the structure of natural kinds can be supported because there are conceptual trends informed by the causal structure of the world.

What about the relationship drawn between what is observable and what is not? Would children have the ability to differentiate visible (outside) and invisible (inside) properties? 3-5 year-old children were tested on their ability to perceive differences between inside and outside, and the independence between these features in the presented objects. They are presented to questions about the classification of these objects in terms of their apparent and internal characteristics. The results indicate children did not expect promptly that those things, which have the same appearance, would also have the same inside, with 65% to 93% of correct answers, and an average of 81%.

When dealing with studies on probabilistic inferences that indicate erroneous inferential trends, Kornblith argues that they only show a pattern of inferential errors in situations that are not normal. There is indeed an erroneous derivation of conclusions when they are made from a small number of cases or a small sample, and studies show the human tendency to generalize from one or few cases. However, Kornblith argues that this logic of statistical inference is not the default one and that under normal circumstances the mechanism is reliable. Statistics cannot be understood as a prediction, or as a sampling technique, but as a degree of confidence in a prediction made from the sample, and that, in uniform populations, the inference made from few cases or from an exemplary case, is highly reliable. Thus, induction based on the identification of natural kinds and with uniform samples results in a highly reliable process, i.e., it is a “set of dispositions which incline us in the right direction” (KORNBLITH, 1993, p. 95).

Now, to detect clusters of homeostatic properties we must detect covariation between these properties, and this ability suffers attacks, since we would have the tendency to see relationships where there is none. In the same line of argument, Kornblith argues that we are good detectors of strong covariation. When we keep focusing on a representative sample, this would allow us to generate enormously successful inferential conclusions. As clustered homeostatic properties identify natural kinds, a focused sampling allows the production of reliable inferences and “we have a tendency to project the right features of natural kinds, those features which, in fact, are universally shared by the kind” (KORNBLITH, 1993, p. 105).

#### 4. Prinz's theory of emotions

The real problem that Griffiths' argument poses to Prinz is the critique of emotions as embodied appraisals realized by mental states on changes in the body. This is so because higher cognitive emotions are made of things not necessarily connected to physiological changes. Prinz goes for a theory of basic emotions “hypothesized to be a privileged set of emotions from which all others are derived” (PRINZ, 2004, p. 86). Basic emotions would provide an explanation as to why affect emotions are also found in animals and higher cognitive emotions only in a few species. Biological and psychological approaches to the study of basic emotions should be integrated. One should consider cross-cultural studies on facial expressions, identification of adaptive functions and dedicated neural structures. All three approaches have limitations but they can be convergent. The study of emotion concepts can also point to which emotions are basic just because we can find out how we form concepts by observing the things to which those concepts relate. This kind of study can furnish information about how people experience emotions and their (different) relations. For example, do you feel jealousy without experiencing anger? Prinz bets that emotions that can be experienced without others are basic. Other fruitful studies are cross-cultural ones conducted in order to detect the overlapping of emotional vocabulary.

Some doubt is placed on this kind of argument. Supposedly, basic emotions can be formed by others, but Prinz does not surrender to skepticism and thinks “disagreement shows that someone must be wrong, but it does not show that everyone is wrong.” He explicitly uses the naturalist argument that future progress of science will fill the gaps: “Emotion science is in its infancy, and current lists reflect early speculations” (PRINZ, 2004, p. 91). Cultural biases could also be controlled by cross-cultural studies developed by psychology and linguistics.

It is not certain if those studies can base such a claim. There is a controversy in the literature involving naturalistic and experimental philosophy about intuitions. The use of intuitions in philosophy is criticized because they have no external criteria to solve differences on what they are supposed to mean. Cross-cultural studies seem to advocate that intuitions are culturally biased (STICH, 1998; WEINBERG, 2007), but those studies are denied to be decisive because they do not show disagreement is real (SOSA, 2013). Similar argumentation could be directed to Prinz's proposal.

Anyway, Prinz's theory advocates that emotions are embodied appraisals because all emotions can be conscious, and the conscious emotions are absorbed in feelings of bodily changes. Since basic emotions are feelings of bodily changes, non-basic emotions are also

derived from and embodied in bodily changes. It rests to explain how they elicit non-basic emotions. A kind of blending theory is proposed; it compares emotions to colors. Like colors, basic emotions form non-basic emotions by blending themselves. Griffiths criticizes those theories saying that a mixture of emotions itself cannot explain higher cognitive emotions, since some kind of representation different from emotions has to be presupposed, and we do not have any serious scientific theory that allows us to join emotions together.

One common objection is that higher cognitive emotions often occur without the pronounced physiological changes and facial expressions that are associated with embodied appraisals (e.g., Griffiths, 1997; Harré, 1986; Solomon, 1976). There is no obvious physiological or facial response associated with guilt or jealousy. (PRINZ, 2004, p. 94)

However, the aforementioned idea is wrong because we can “swell with pride and hang our heads in shame”, examples of higher cognitive emotions. Prinz also insists that feelings like jealousy – which really have a representational stance – show an interesting characteristic of not being immune to basic emotions even when the representation changes. For example, if a person in a situation of jealous feelings towards another realizes that there is no reason for this feeling, the fact they now do not have a belief that represents jealousy does not refrain them from having the basic emotions linked with the higher cognitive emotion. This would demonstrate that higher cognitive emotions are not nonmodular because they also contain embodied appraisals.

When one rescinds the hasty thoughts that spawned a bout of jealousy, the anger that had been contained in the jealousy may remain. Anger, unlike beliefs about infidelity, cannot simply be erased by a change in judgment. (PRINZ, 2004, p. 96-97)

This reinforces the vision that basic emotions are embodied appraisals and non-basic emotions (higher cognitive emotions) are a mix of the previous, or a mix of them with representations. A problem persists if a unified science of emotions is to be achieved since higher cognitive emotions are composed by concepts that are subject to cultural construction and influence.

According to Prinz’s interpretations of Boyd’s conception of natural kinds – contrary to the use of it by Griffiths – it is possible to classify all emotions as a natural kind under the perspective of bodily appraisals, even if higher cognitive emotions have something different in their composition. Embodied appraisals are bodily changes, conscious somatic feelings, and motivational effects. All of them are usually caused by cognitive elaborations; however, the reverse is also true, for embodied appraisals promote cognitive elaborations. If higher cognitive emotions are composed of embodied appraisals, a science of both is possible. However, Prinz’s claims are stronger:

I propose that cognitively elaborated embodied appraisals are not composite states at all. They are comprised of nothing but embodied appraisals. The cognitions that elaborate them are prior conditions, not constituent parts. (PRINZ, 2004. p. 98)

One could say that the fact that basic emotions, or affect programs, and higher cognitive emotions are linked natural kinds does not imply that they are of the same kind. Higher cognitive emotions are composed of embodied appraisals but cannot be confused with them.

For Prinz, emotions of any type are embodied appraisals and the role played by concepts or beliefs is to determine the identity of the emotions. For example, an embodied appraisal occurs as response to different kinds of judgments, so, if informed by a representation of infidelity, it forms a jealous emotion. “On this proposal, the cognitive concomitant of a cognitively elaborated emotion is not part of the emotion, but it plays a role in determining the identity of that emotion” (PRINZ, 2004, p. 99). It rests some questions for Prinz to answer: In what way is the judgment not a part of higher cognitive emotion? If it “determines” the identity, isn’t denying the judgment as its constitution contradictory?

Using a terminology ascribed to Fred Dretske, Prinz says that those representations ‘calibrate’ the emotion. He uses an example of coughing as secret code for spies meaning a microfilm has been delivered. The use of an attitude for cleaning the throat with the purpose different of the original is an instantiation of recalibration. There is a kind of direction of embodied appraisals, different of what it has been developed for, and made by the right judgment.

All this suggests that higher cognitive emotions are not cognitive elaborations, after all. They are not compounds of judgments and embodied appraisals. Instead, they are embodied appraisals that have been recalibrated by judgments to represent somewhat different relations to the environment. (PRINZ, 2004, p. 99)

Prinz says that an embodied appraisal is recalibrated by judgments, but it does not make it lose its original meaning. The spy coughs as a code, and it is still something that has the function of clearing the throat. Prinz states that higher cognitive emotions do not really exist, arguing that anger is not classified as higher cognitive because of its arbitrariness. If a person is fired and becomes angry, why is this not a higher cognitive emotion?

A possible answer to Prinz may be in his own presentation of the problem: “Suppose Jones becomes angry when *she learns* that she has lost her job” (PRINZ, 2004, p. 100). Jones’ anger here is a higher cognitive emotion, not a mere emotion, or only embodied appraisal, because she has a conscious representation of what happened to her: being fired, maybe unjustly, maybe not.

Anyway, Prinz seems to advocate a kind of externalist reliability proposal that is in line with his naturalistic view. A correct judgment based upon external conditions causes a reliable embodied appraisal and this is calibration tracking the representations corresponding to a certain emotion. “Calibration files contain a variety of representations, ranging from explicit judgments to sensory states” (PRINZ, 2004, p. 101). A myriad of representations can cause a higher cognitive emotion and those have, as their main characteristic, similar somatic states, not the same representation.

The difference between basic and nonbasic emotions is that basic emotions are calibrated through files that have been fostered by natural selection. Nonbasic emotions emerge when new files are set up to hijack the emotions that are already in place (or when basic emotions are blended). (PRINZ, 2004, p. 101)

For Prinz, emotions are embodied appraisals controlled by calibration files, i.e., various representations. Non-basic emotions – previously entertained by Prinz as higher cognitive emotion – are just emotions recalibrated to something different of what they were genetically predisposed. Representations are causes of emotions, and embodied appraisals their constituents. Therefore, “Emotions are a natural kind in a strong sense. They share a common essence. It is rare for nature (and folk psychology) to offer such a neat category” (PRINZ, 2004, p. 102).

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