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A NEW OUTLOOK ON THE PROBLEM OF NATURAL KIND STATUS OF EMOTIONS

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A NEW OUTLOOK ON THE PROBLEM OF  
NATURAL KIND STATUS OF EMOTIONS

A Master's Thesis

by  
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*To my unique family*

A NEW OUTLOOK ON THE PROBLEM OF NATURAL KIND STATUS OF  
EMOTIONS

The Graduate School of Economics and Social Sciences  
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June 2020

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## ABSTRACT

### A NEW OUTLOOK ON THE PROBLEM OF NATURAL KIND STATUS OF EMOTIONS

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This thesis deals with the question of whether emotions are natural kinds or not. Those who take a negative stance in this ongoing debate argue that the emotion categories that scientists make use of are not appropriate for scientific investigations on the grounds that they are not natural kinds. On the other hand, some argue that emotions, at least basic emotions, are natural kinds and the existing emotion categories are viable for scientific investigation. At the beginning of thesis, I will introduce sensation-based theories of emotion and glance at what the constitutive components of emotions might be. Thenceforth, I will examine natural and non-natural kinds to illustrate what kind of criteria for natural kinds can be settled. In light of this information, I will show what the experimental data purports about the natural kind status of emotions. As a last step, to answer the main question of the thesis, I will assert that we have to distinguish between emotions and emotional sensations. I will contend that emotional sensations, which I take to be the cores of emotions, might be accepted to be natural kinds since they are less subject to environmental and personal factors, compared to emotions. However, I will take an agnostic stance regarding the question whether this claim can be scientifically proven or not.

Keywords: Categorization of Emotions, Emotions, Natural Kinds, Sensations

## ÖZET

### DUYGULARIN DOĞAL TÜR PROBLEMİNE YENİ BİR BAKIŞ

Küçük, Kardelen

Yüksek Lisans, Felsefe Bölümü

Tez Danışmanı: Dr. Öğr. Üyesi William Giles Wringe

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Bu tez, duyguların doğal tür olup olmadığı sorusunu ele almaktadır. Süregelen bu tartışma karşısında olumsuz tutum sergileyenler, bilimsel araştırmaların temel aldığı duygu kategorilerinin, doğal türler olmaması sebebiyle bilimsel araştırmaya uygun olmadığını savunmaktadırlar. Diğer bir taraftan, duyguların, en azından bazı temel duyguların, doğal türler olduğunu ve varolan duygu sınıflandırma sisteminin bilimsel açıdan elverişli olduğunu savunanlar da bulunmaktadır. Tezin başında, duyguları duyular temelinde inceleyen duygu teorilerini tanıtır ve duyguların yapıtaşlarının ne olabileceğine dair genel bir fikir vereceğim. Ardından, doğal türleri ve doğal olmayan türleri inceleyip doğal türler için ne gibi kıstaslar belirlenebileceğine bakacağım. Bu kıstaslar ışığında, deneysel verilerin duyguların doğal tür olma durumu için ne söylediğini göstereceğim. Son adımda, tezin odaklandığı temel soruya cevap vermek için duygular ve duygusal duyular arasında bir ayrım gözetmemiz gerektiğini savunacağım. Duyguların özü olarak ele aldığım duygusal duyuların, duygulara kıyasla çevresel ve kişisel etkenlere daha az maruz kalması sebebiyle doğal türler olarak kabul edilebileceğini iddia edeceğim. Ancak, bu iddiamın bilimsel olarak kanıtlanabilirliği konusunda agnostik bir tutum benimseyeceğim.

Anahtar Kelimeler: Doğal Türler, Duygular, Duyguların Sınıflandırması, Duyular

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## CHAPTER I

### INTRODUCTION

There has been much debate in literature on the natural kind status of emotions. Most of this has been shaped around the question of whether *emotion* is a natural kind (Griffiths, 1997; Neu, 2000; Charland, 2002). In this thesis, I rather focus on a related yet different question, that is the question of whether certain emotion *categories* are natural kinds or not. This question has also been articulated in and divided the literature into two opposite poles. On the one hand, there are ones who take a negative stance and argue that emotions are not natural kinds (Barrett, 2006b; Russell, 2003). On the other hand, there are ones who argue that emotions, at least the basic ones, have natural divisions among themselves which can be discerned and observed scientifically (Ekman & Cordaro, 2011; Prinz, 2004a).

Emotions 'having natural kind status is noteworthy because a prominent view in literature stipulates whether a phenomenon can empirically be investigated or not depends on the condition of its being a natural kind or involving natural kinds (Cooper, 2004; Samuels, 2007 as cited in Tekin, 2016). The existing system categorizes emotions based on the preconception that emotions are natural kinds. Thus, scrutinizing the natural kind status of emotions is significant in terms of the research conducted about emotions because it might illustrate whether this system is really useful or not.

A simple reformulation of the question that I will be scrutinizing is as follows: Do individual emotion categories such as anger, disgust, happiness, and fear depend on natural or mind-independent distinctions among them (i.e., are they natural kinds), or are they constructions of the mind, arbitrary categories that are sensitive to the context and to the individual herself (i.e., are they non-natural kinds)?

To answer this question, I proceed as follows. In Chapter II, I present some of the main sensation-based<sup>1</sup> theories of emotion and I evaluate their approaches bearing in mind the natural kind problem in the background. Other theories of emotion focus on other crucial constitutive parts of emotions, such as cognition and perception. Sensation-based theories of emotion fairly provide a ground that can be used to build upon relations with phenomenology. I think that the most obviously realized component of emotions by the perceiver is the phenomenological part. Since sensation-based theories address this aspect the best<sup>2</sup>, and since I think that we might be able to answer the natural kind problem incorporating this aspect of emotions, I chose to elaborate on sensation-based theories of emotion.

In Chapter III, I present the distinction between natural and non-natural kinds in general and try to clarify what it means for a category to have the natural kind status. Based on what has been said about natural kinds so far in literature, I put forward characteristic criteria for the identification of natural kinds. Also, I evaluate the natural kind status of emotions in light of criteria set forth for natural kinds by touching upon empirical research which characterizes emotions based on neural activations of the brain.

In the final chapter, I offer my argument, and suggest that we should take the distinction between emotions and emotional sensations into consideration to answer the question of whether emotions are natural kinds or not. I propose that emotions may be taken as constructed, context-dependent phenomena, which represent the perceiver's social and cultural background among other things. In this sense, one can accept that emotions are not natural kinds. But emotional sensations, which I take them to be the core of emotions, may have their roots in nature. So, they may be

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<sup>1</sup> I should note that by the term "sensations," I refer to "bodily feelings". The theories I present make use of the term "bodily feelings," which are bodily changes that take place in the production of emotion. That is why I think it would be convenient to call them sensation-based theories.

<sup>2</sup> Surely, other theories of emotion, especially perception-based theories of emotion, also make use of phenomenology, yet the kind of phenomenology which is easy to explain, and the one I will be interested in, is the kind of phenomenology where the body is quite involved. Since I find sensation-based theories quite in line with this property, I will use them.

regarded as natural kinds, and they can be more suitable objects of scientific investigation than emotions. Nevertheless, the debate is still open for dispute since there is still no sufficient explanation and methods of scientific investigation of emotional sensations. In this regard, the answer to the question of whether emotional sensations are natural kinds or not seems to preserve its obscurity. From this point of view, investigating emotional sensations might give us a scientific understanding of emotions partially, and it seems plausible to adopt an agnostic stance, instead of denying the possibility of emotions 'being natural kinds altogether.

## CHAPTER II

### SENSATION-BASED THEORIES OF EMOTION

The question of whether emotions are natural kinds harbors another crucial yet controversial question within itself, that is the question of what an emotion is. Surely, this chapter would not attempt to provide a definitive answer to this another big question. Rather, it would concentrate on some of the main theories of emotion and try to reveal characteristic features of emotions in light of these theories. These characteristic features contribute to the main problem of the thesis, helping to explain the structure and content of emotion categories by indicating where their differences actually might originate from.

All of the theories I will consider in this chapter evaluate emotions based on sensations which are named “feeling” or “appraisal” with respect to each theory. Although they attempt to both define emotions and signify their core components from relatively different aspects, the centrality of the notion of “sensation” is apparent in all.

In Chapter IV, where I discuss my stance with regards to the question of natural kinds, I will elaborate on emotions with respect to sensations and phenomenology. Since, I believe, sensations play a significant role in providing a ground to examine the phenomenological aspect of emotions, considering the theories which focus on sensations would be the most convenient.

#### 2.1 James 'Theory of Emotion

Among the emotion theories that emphasize the relationship between feeling and emotion, perhaps the most well-known is William James 'theory of emotion. James (1884: 189) defines emotion based on bodily changes and claims that an emotion is nothing but the feeling of bodily changes which follow the perception of a stimulus, or in James 'terms “perception of the exciting fact.” These changes include visceral, muscular, respiratory, or circulatory alterations like heart beating faster, pupils

getting dilated, having goosebumps, sweating, mouth getting dry, increased breathing, and so on.

On the face of it, it is intuitive to think that those changes are the products or effects of emotions. However, as opposed to this commonsense view which states that experience of an emotion precedes the bodily reaction, James argues that the order of sequence is mistaken and should be reversed. According to this reversed hypothesis, we do not cry because we feel sorry, or we do not strike because we feel angry. Quite the contrary; feeling sorry, angry, or afraid comes after the realization of bodily states, and without these bodily changes, emotional experience would lose its emotional warmth (James, 1884).

James states that one cannot even imagine that experiencing an emotion without a bodily change occurring within her body. If one were to subtract all bodily changes which are taken to be characteristics of a certain emotion, then she would have nothing left behind, no “mind-stuff” out of which the emotion can be constituted.

The role of bodily changes in the emergence of emotions is so explicit in James’ account that he equalizes emotion with the feeling of bodily changes, perceptions, or in short, bodily experiences. If an emotion is nothing other than a perception of a bodily change, and if each emotion has different properties, then one would be right to conclude that each emotion represents itself in the body distinctively. James also seems to accept this idea, yet not entirely. He says,

I should say first of all that the only emotions I propose expressly to consider here are those that have a distinct bodily expression. That there are feelings of pleasure and displeasure, of interest and excitement, bound up with mental operations, but having no obvious bodily expression for their consequence, would, I suppose, be held true by most readers (James, 1884: 189).

He identifies these feelings as moral, intellectual and aesthetic feelings, and contrasts them with the “standard” emotions which always accompany some specific and unique bodily changes. What differentiates one emotion from another, at least for standard emotions, then, is nothing other than a distinctive set of bodily changes. Still, James (1884) cautiously predicts that it might not be possible to discern all the characteristic bodily changes for each emotion since they might be so numerous and subtle that the designation of them would require advanced study of physiology.

Although James' theory of emotions is highly valued for its explanation of an important relationship, the relationship between bodily changes and emotion, it still misses a central feature of emotions. Emotions are "about" something, "about" an object, an event. But identifying emotions solely with bodily changes, it is not quite straightforward how one can explain emotions' having "aboutness" or being "intentional."

## 2.2 Prinz's Embodied Appraisals Theory

Following James' footprints, Jesse Prinz (2005) argues for an extended version of the idea that emotions are the perception of bodily feelings. He claims that emotions are valenced embodied appraisals, "gut reactions." Prinz presents a perceptual theory of emotion that takes emotions as representations of bodily states, not *pure* perceptions of them.

The crucial point Prinz attends to is one of the objections to James' theory. Psychologists often represent James' theory to be deficient since it fails to reckon the idea that emotions involve something more than bodily changes (Prinz, 2004b). On this matter, Prinz says, James seems to be missing the cognitive components of emotions, components that might be constitutive. Although Prinz does not think that emotions are *essentially* cognitive phenomena, he accepts that somatic theories of emotion, especially James', do not adequately explain the *intentionality* of emotions. At the other extreme, theories that emphasize the cognitive part of emotions represent their cognitive components as if they are something "above and beyond" the bodily changes. Prinz argues against this assumption and claims that one does not have to abandon the main hypothesis of somatic theories to capture the notion of intentionality.

According to Prinz, it is intuitively plausible to think that emotions are intentional. Every emotion has intentional content in two senses: by having formal and particular objects. Danger, as a concept, is the formal object of fear, and each *type* of experience of fear concerns a *particular* danger such as a spider, or a roller coaster,

amounting to particular objects of emotions. If emotions were merely bodily perceptions, they would represent the bodily states without clarifying the relationship between emotion and its object (Prinz, 2004b).

Notwithstanding, Prinz argues that the sole fact that emotions take propositional objects which, in turn, reveal their intentionality, is not a compelling reason to think that cognitive components are constitutive parts of emotions. Using Lazarus' (1991) notion of "core relational themes," he explicates his idea. According to it, core relational themes correspond to the relationship between an organism and its environment (Prinz, 2004b). In each case of an emotional experience, there is a relationship between the agent and an object, situation, or event that causes a bodily change. Core relational themes direct the acts of a person to maintain the individual's well-being. If the body could represent this relational theme within itself reliably, then it would also be possible that our perception of bodily changes could represent those themes as bearing upon our well-beings. That is to say, an evaluative judgment is not necessary for the constitution of emotions, a reliable representation process is more than enough to take them as appraisals. Appraisal for Prinz (2004b: 11), is "any representation of an organism-environment relation... that bears on well-being." And these bodily appraisals constitute the core of emotions.

Among these bodily appraisals, Prinz maintains, are the ones which correspond to six basic emotions (disgust, anger, joy, fear, happiness, and surprise). The idea of basic emotions was stipulated by Ekman and Friesen (1971), to indicate that all people experience basic emotional states universally. This means that expressive features of those emotional experiences are more or less the same across all people. According to their study, autonomic changes correspond to basic emotions distinctively. In other words, each of these six basic emotions has a unique bodily pattern which is independently associated with characteristic bodily changes. Beneath those basic emotions, Prinz (2004a) suggests that there are representations of bodily states, or bodily appraisals. Furthermore, all emotions are composed of basic emotions. Complex emotions such as grief, guilt, or love can be taken as mixtures of basic emotions or cognitively interpreted forms of basic emotions.

At this junction, Prinz (2004a) uses a metaphor: The essence of emotions can be thought of as the alcohol of an alcoholic beverage. Even though each blend of liquors may differ in flavor, and sometimes non-alcoholic ingredients may be added, all alcoholic blends have something in common, their common effect, intoxication. According to Prinz, this is also true for bodily appraisals. Since all emotions are derived from the same essence, there is absolutely no plausible reason for rejecting the idea that emotions are natural kinds. After all, if all emotions have basic emotional essence at their core, and if these cores represent themselves as basic emotions which correspond to distinct somatic responses, then it would be senseless to say that emotion categories, especially the basic emotions, do not have natural divisions within themselves.

It seems as though Prinz is adept at strengthening James' main hypothesis and adapting it given the relatively modern empirical evidence. Yet, Prinz's argument is still open to dispute when taking into account more modern evidence that threatens the idea of distinctive features of basic emotions (Barrett, 2006b).

Apart from this, one might think that the representation of core relational themes might be personal in the sense that the way any emotion makes someone feel will be completely contingent on her relationship with her present environment. And this might cause trouble for communicating emotions. However, Prinz's assumption here is that certain sensations signal certain core relational themes, which constitutes a common ground for understanding of and talking about emotions. And it seems as though this assumption is also related to the natural kind assumption which Barrett criticizes.

### 2.3 Barrett's Constructive Theory of Emotions

Lisa Barrett's constructive theory of emotions is shaped based on a criticism of the central assumption of almost every theory of emotion. According to this assumption, there are internal emotion mechanisms that correspond to distinct categories such as sadness, happiness, anger, fear, and disgust. These categories have clear and distinct boundaries. So, it is possible to demonstrate and observe each emotion category

scientifically, in an objective fashion. Though, for Barrett, emotions do not accommodate this kind of distinct structures within themselves. Rather, they should be considered as emergent phenomena which come into existence through interactions of fundamental psychological processes (Barrett, 2006b). Thus, distinctions between emotion categories reveal themselves as sensitive to those processes.

Central to Barrett's criticism of the natural kind view is the idea of heterogeneity that is situated both among emotion categories and within singular emotion categories. There is so much variability within instances of an emotion category, and this makes it hard to take them as a reliable object of scientific investigation. As Barrett et al. (2007: 2) points out, "Not all instances of an emotion (e.g., what people call *fear*) look alike, feel alike, or have the same neurophysiological signature (i.e., they are not analogous)". She finds the natural kind view quite inadequate in explaining this considerable variability.

According to Barrett, this variability can be explained through "the conceptual act model" which she proposes as a substitution for the natural kind view. In this model, emotions are not taken as singular objects of mind, rather they are considered as products of working mental mechanisms. These products carry so much variability within themselves that only through some conceptualizing activity the brain can make sense. Experience of emotion emerges when one categorizes her core affective states<sup>3</sup> with the knowledge of her past experiences. In this sense, emotions are *constructed* phenomena coming to existence through a complex interplay of systems and the concept formation process. That is why it would be futile to expect to find the biological fingerprint of any distinct emotion category. Emotions are not built-in phenomena waiting to be revealed, and they are not the objects or entities of mind. She states that:

From sensory input and past experience, your brain constructs meaning and prescribes action. If you didn't have concepts that represent your past experience, all your sensory inputs would just be noise. You wouldn't know what the sensations are, what caused them, nor how to behave to deal with

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<sup>3</sup> Core affective states, according to Barrett, refer to basic physiological states. I will explicate this notion in Chapter IV.

them. With concepts, your brain makes meaning of sensation, and sometimes that meaning is an emotion. (Barrett, 2017: 31).

Barrett also addresses disconfirming evidence regarding the natural kind view of emotions. She is aware of the studies which seemingly prove that emotions, specifically basic emotions, have distinct representations in the body both physiologically and behaviorally. Nevertheless, she points out that there still is incompatible evidence disconfirming the assumptions of the natural kind view. She urges researchers to realize that emotion studies need a theory of emotions that can give an account of all the empirical data, *comprehensively* (Barrett, 2006b). Accordingly, she finds individual studies that support the natural kind view incidental, and maintains that one should analyze the studies in relation to existing evidence, to be able to decide which one is right. Barrett claims that the conceptual act model does not face the same problems as the natural kind view faces, and that it deals with the whole body of research about emotions in a more consistent way.

Barrett presents a theory which puts physiological changes at the center and supposes that other components are *added on* those changes throughout emotional experience. However, one might think that this way of thinking is deceptive in the sense that it does not do enough justice to the wholistic nature of emotions. Accordingly, physiological changes, relations among objects that cause these changes, and the perception of this process occur continually and inextricably. Goldie (2002) raises an objection in line with this worry when constructing his account.

#### 2.4 Goldie's Account of Emotions

Peter Goldie's account of emotion is grounded in the relationship between feelings and intentionality which, he thinks, is a central yet often misrepresented aspect of emotions. Goldie takes it for granted that emotions involve feelings at least in typical cases, and forges his inquiry around kinds of feelings that are or that can be involved in emotion. He distinguishes between two kinds of feelings: *bodily feeling* and *feeling towards*. He argues that both are intentional (Goldie, 2000).

Bodily feelings are intentional in the sense that they are directed towards an object, the object that is one's body. This idea is very similar to the perceptual account of bodily feelings. Both accounts accept that one's awareness of her bodily changes is directed towards itself and in this sense, they are intentional.<sup>4</sup> What makes the difference is that, similar to Prinz, Goldie (2002: 236) widens the scope of bodily feelings and claims that they "include awareness through touch of the condition of the *surface* of one's body through its physical contact with objects". Here, the idea seems to be about the way an object affects the body and the way the body represents this effect through itself, which can be understood as a kind of reciprocal relationship. For example,

In picking up an object, a gun say, you feel your hands are slippery with sweat against the cool smooth surface of the barrel. Or you feel the dampness of the contact of your sweaty back with your wet shirt. Here, the object of your awareness, through touch, is not only the condition of the surface of your body, but also the condition of the gun or your shirt and their manner of contact with your body (Goldie, 2002: 236).

The feeling of the bodily condition can be a part of emotional experience in the sense that it may provide a reason for believing that one is experiencing a certain type of emotion in that condition. One can think that she is embarrassed because of her face has gone red. But, of course, this derivation can be misleading, considering the range of emotion types and their respective bodily responses. Nevertheless, Goldie accepts that at least some emotional experiences involve characteristic bodily responses<sup>5</sup> which may help one to believe that she is experiencing some kind of emotion.

Even though at first glance, it may seem as though bodily feelings alone are sufficient enough to reveal the content of one's emotion, i.e., what that emotion is about, this is not the case. What bodily feelings can reveal at best, Goldie (2002: 241) argues, is that one is "feeling an emotion about something or other, which has a determinable property". Following this, Goldie introduces the notion of *feeling towards* which, he claims to reveal the object of emotion *as such*, feeling fear

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<sup>4</sup> Goldie uses the term "intentional" in the sense that being directed towards something, not being about something. (Goldie, 2002)

<sup>5</sup> Here, he refers to the idea of basic emotions. He accepts the idea that at least some emotional experiences involve characteristic bodily responses (Goldie, 2002).

towards the dog, for example. The object of *feeling towards* can be a thing, a person, a state of affairs, an event, etc. When one is afraid of the dog, the object of her fear is a thing which has fearsome properties, for example, sharp teeth, explaining why she experiences fear. Through this way of thinking, *feeling towards* may be judged as the content of the emotional experience.<sup>6</sup>

One crucial point about *feeling towards* is that it provides one neither her conscious experience of herself nor her conscious experience of herself as experiencing an emotion. In this sense, Goldie (2002: 241) states that emotional experience “is an unreflective emotional engagement with the world beyond the body”.

According to Goldie, defining the world-directed intentionality of emotions based on *feeling towards* may seem puzzling considering the commonsense attitude in philosophical discourse. In this traditional approach, intentionality is often explained through non-emotional attitudes and contents such as belief, perception, and imagination. Accordingly, contents are captured by these non-emotional states before emotional experience. And afterward, these contents become an object of one’s emotional experience by being directed to one’s bodily conditions. Notably, in none of these stages, feelings are directed towards “objects in the world beyond the body” (Goldie, 2002). These approaches aim to explain the phenomenology of emotional experience with reference to feelings as intentional states directed to one’s body or as non-intentional states.

Goldie designates these approaches as “the add-on theories,” and argues that emotions are not like what these theories suggest. The key point is that “emotional feelings are inextricably intertwined with the world-directed aspect of emotion” (Goldie, 2002: 242). Thus, the phenomenology of emotions should be taken neither as an aspect of the content nor an attitude of emotions. Rather it should be considered as something that infuses both content and attitude.

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<sup>6</sup> Here, Goldie (2002) points out that the term “content” should not be understood purely in the sense of “reference.” Even when one does not exactly know what the content of her emotion refers to, she would still have some understanding of object of her emotion.

In this respect, phenomenology can be seen as a joint where bodily feelings and *feelings towards* are experienced as unity. Nevertheless, theories of emotion often disregard this unity and they are inclined to evaluate emotions in the shadow of a preconceived distinction between the material aspect (objects of emotion) and the mental aspect (emotional experience). This is the point which, Goldie thinks, poses a problem for scientific investigation of emotions. As long as this distinction is taken for granted, and scientists continue to give purely theoretical explanations to causal processes of emotional experience while ignoring its phenomenological unity, adequate scientific characterization of emotions would be incomplete (Goldie, 2002). This is also the very same point where Goldie thinks that science encounters another hard problem, in addition to the hard problem of consciousness.

## 2.5 Discussion

Let me take a step back and summarize the central points of the theories presented so far. It seems as though bodily changes, the relationship between the object and the person, and reactions to given stimuli are essential in understanding the way emotions are recognized and distinct features of individual emotions are realized.

James' theory is an influential one in the sense that it points out one essential component of emotional experience, and gives an understanding of emotions based on a relationship between bodily changes and their perceptions. Even though James does not explicitly suggest that there is always one-to-one correspondence among bodily changes and their perceptions (i.e., emotions), describing emotional experience only via the bodily changes provides a reason to think that distinct bodily changes should correspond to distinct emotions respectively.

However, it seems as though, most of the time bodily changes by themselves do not provide reliable ground to individuate one's emotions. To exemplify, a heart beating faster can be taken as an indicator of both fear and anger. In that manner, one may say that bodily changes should be evaluated *as a whole* to specify what they point out to. That is to say, one should take into account the dilation of her eyes, the sweating of one's palms in addition to her heart beating faster to conclude that she is

afraid. But this way of thinking might not work as well when the myriad of emotions and bodily changes are considered. That is to say, there might be some overlaps that cannot be explained, which puts the scientific investigation of emotions, and emotion categories, in a difficult position.

At this juncture, one might think that the scope of the investigation should be narrowed to talk about consistency among characteristic features of emotions. This was a stance that Prinz seems to adopt as well. If one is to understand what constitutes individual emotions, she should analyze them thoroughly and search for core components that they share. And basic emotions seem to fulfill this criterion since they are relatively consistent in their physiological, behavioral, and expressive features.

However, this was also the very same point which Barrett was critical of. Inconsistency of empirical data led Barrett to assert that individual emotions, even the basic ones, do not have much in common. Hence, they cannot be grouped in bundles that can be investigated scientifically. Barrett seems to think that distinct bodily changes creating distinct emotions was a misinterpretation of James' theory. Although James puts forth his theory to point out substantial misunderstandings of his time, according to Barrett (2006b), it led to another commonsense misunderstanding which lies behind almost every modern theory of emotions, as mentioned before. The idea that every emotion category reveals itself distinctively in the body constitutes a basis for theories which regard emotions as natural kinds, meaning that every emotion category can be observed with respect to behaviors and causal mechanisms that give rise to them. To remind, Barrett is critical of this natural kind view. She accounts for the idea that different psychological mechanisms come together to form emotional experience.

Goldie takes a critical stance about add-on theories in general, including Barrett's, though he does not directly criticize Barrett. In this regard, Goldie adopts a holistic position regarding the examination of emotions. In accordance, Goldie establishes an inextricable link among the core components of emotions (intentionality, phenomenology, and bodily changes). From this point of view, scientific theories that aim to observe, analyze, and conceptualize the patterns of emotional processes

reach an impasse with the consideration of the inexplicable nature of phenomenology from an impersonal perspective.

However, one might assert that further argument should be given to accept that phenomenology, especially phenomenology taking part in emotional experience, is not explainable, at least from a scientific point of view. Although it may seem as though there is something mysterious about phenomenology that cannot be put into scientific terms, this would not be a strong claim in itself to cause scientists to give up on the investigation into the nature of what creates this seeming mystery. There is still the remaining possibility that the most seemingly mystical aspect might provide the most explicit answer to the problem of the natural kind status of emotions which I will address in Chapter IV.

Here, one might rightly raise the question of why scientists need to consider the distinction between natural and non-natural kinds. First, it should be noted that this is not a necessity. But if it turns out that emotions *are* natural kinds, then it would be highly probable that individual emotions or emotion categories are eligible for scientific investigation. On the other hand, if it turns out that they are *not* natural kinds, then this might reveal a need for a change in the scientific paradigm through which emotions and emotional experience are explained. This change would point out that the concepts used in explaining emotional experience are mistaken in that they cause fallacious or inconvenient predictions about the topics related to emotions. When emotions' place in psychology is taken into account, it would surely be a remarkable shift.

Nevertheless, to say something about the natural kind status of emotions, I should expound what I understand from the notion of "natural kinds." In the following chapter I will focus on the distinction between natural and non-natural kinds, and present the views evaluating the natural kind status of emotions from an empirical perspective.

## CHAPTER III

### NATURAL KINDS AND NATURAL KIND STATUS OF EMOTIONS

The previous chapter focused on prominent theories of emotion and their way of explicating constitutive components of emotions. Each one of the theories I presented seems to point out something crucial about the nature of emotions, yet without concurring in any specific characterization of emotions. One might expect this clarification to come from science, at least in the theoretical form, explaining the common properties of emotions and relations among them. But besides the *philosophical* controversy, there also seems some complications that *scientific* approach tries to deal with. In fact, Barrett (2006b) states that progress in scientific research of emotions is very slow, especially when it is compared to other research concerning other concepts such as memory and attention. An intuitive reaction to it might be that progress in scientific domain is hindered by the idea that there is not a consensus about the definition of "emotion."

However, according to Barrett, the problem originates from the assumption that emotions are natural kinds. As mentioned in the previous chapter, Barrett thinks that this assumption dominates the scientific domain so extensively that it limits the scientific progress despite being unwarranted by current empirical evidence.

The most plausible way to approach this problem, seems to me, is to be clear about the meaning of "natural kinds" first, and then to analyze the validity of the above-mentioned assumption. My aim in this chapter is to scrutinize the distinction between natural and non-natural kinds, and look for the role of this distinction in scientific investigations. It would be convenient to clarify the reason why we need this kind of a distinction in the first place. Clarifying the reason would indicate characteristics of both natural and non-natural kinds, thus would shed light on their parting. Afterwards, I will address empirical findings elaborating on the natural kind status of emotions.

### 3.1 Initial Insights into the Nature of the Distinction

It seems as though there are two ways of thinking about natural kinds. The first one is to take a metaphysical stance, and look for an essential property that members of a class share in themselves intrinsically. Let us call it *the metaphysical conception of natural kinds*. From this point of view, natural kinds carve nature at its joints. Accordingly, joints are really out there in the world, yet there is no guarantee that we, humans, are going to be able to discover, observe, and ponder about their existence. For example, consider the law of gravity. Before its discovery, gravity had existed as an underlying force that had been controlling and affecting actions of the objects and relations among them. Nevertheless, only after its discovery, scientists became able to use the law of gravity to explain and predict natural phenomena which gravity controls, more accurately.

The second way of thinking about natural kinds concerns their understanding from an epistemic or pragmatic aspect. Let us call it *the pragmatic concept of natural kinds*. Here, scientists inspect if properties of objects are in line with a given theory's assumptions, and how one can make use of these properties to explain and predict the phenomena in the world. That is to say, the decision of whether some phenomena are natural kind or not depends on those phenomena's compatibility with existing scientific theories, effectiveness in increasing the explanatory power of theories, and ability to create the convenient and solid grounds to produce a new theory. So, in a sense, pragmatic conception of natural kinds depends on and is limited by our understanding. It is not concerned much with the *reality* of the kinds, rather it focuses on their *usage* and *productiveness* to the extent that they are discovered.

When a scientist faces with a problem about classification she uses in her research, there seems to be two options she can consider. The first thing she might say is that the categories are constructed improperly, that is why she cannot utilize them. And even if she puts them to use, she encounters with conflicting results complicating her investigation. The second thing to say is that those categories actually do *not* exist, and assuming the opposite in the first place is the reason why the problem arises. Notice that for the second option, she would be considering the metaphysical concept

of natural kinds. So, by using *pragmatic* conception she arrives at the *metaphysical* conclusion.

I will also take the pragmatic aspect concerning the natural kind status of emotions and analyze their features on those grounds. Towards the end of the chapter, however, I will turn back to the metaphysical conception and will portray how the pragmatic conception might fall short of being a complete outlook.

### 3.2 The Need for the Distinction Between Natural and Non-Natural Kinds

Intuitively, the distinction between natural and non-natural kinds seems explicit. There are things in the world that are categorized or classified under the same term according to the common properties they possess. If the way these properties are clustered reflects the world as it is, that is, if they indicate facts or distinctions which already exist in the world, they should be called “natural kinds.” If not, and the way these properties aggregate is based solely on human intentions, then they should be called “non-natural kinds.”

This picture may seem quite simple and clear. However, one should be reminded that things always get fused into each other when one approaches the line drawn in the middle to set things apart from each other. And this is also true for the line between natural and non-natural kinds. The seemingly best way to escape from this notion of blur would be to approach the line step by step and try to grasp what makes the difference fundamentally.

When we talk about *kinds* in general, we talk about things, processes, or states combine in some way. Specifying kinds as *natural* kinds designates the way these phenomena are grouped arbitrarily or non-arbitrarily. To put it another way, the distinction of natural and non-natural kinds informs us of the boundaries of kinds, about whether they are fixed by human beings or nature. If these boundaries were fixed in nature in such a way that reflects the underlying structure of the world, this would mean that the clusters of properties falling within those boundaries are feasible objects of science. However, this is not to claim that only naturally classified

properties should be regarded as eligible for scientific investigation. Rather, it is just to claim that all natural kinds are proper objects to be investigated scientifically.

The apparent reason for the need of the natural and non-natural distinction would be, then, the need for a reliable starting point to make scientific generalizations. Şerife Tekin (2016: 149) illustrates this by saying that “Members of a particular natural kind are thought to share a large number of scientifically relevant properties that ground scientific explanations, predictions, and interventions.” To label a cluster of things, of processes or of states as natural kinds is, then, to consider it as an object of science and accept that it would provide a reliable point for further investigations. This reliable point would provide appropriate conditions for science and scientific progress.

Now, we might have a ground to claim that natural kinds are highly favorable considering the purposes of scientific investigation. Still, the question of what the criteria to consider a group of particulars as natural kind are seems unanswered. Let us put this question aside for a little while and try to resolve the ambiguity in definitions of natural and non-natural kinds by giving concrete examples for both.

### 3.2.1 Natural Kinds

The consensus in the literature is that, among scientific disciplines, chemistry is the one which provides the most powerful paradigms of what are recognized as natural kinds (Bird & Tobin, 2008). Chemical elements, for example, are phenomena whose boundaries among group members are easily detected with respect to their atomic structures. Take the element of silver: All entities classified as silver share a property which identifies those chemical elements uniquely. This property also explains the silver atom’s other properties such as its color, its melting point, and the way it goes into chemical reactions. Thus, to identify something as silver enables us to make inferences and generalizations that will apply to all samples of silver.

Of course, chemistry is not the only scientific discipline where paradigms of natural kinds can be found. In biology, the grouping of organisms into species according to

their physical similarities or their gene sequencing reflects a natural division. Even though biologists offer different species categorizations, and much debate concerning how this classification should be made continues, the traditional picture of species remains its validity at least at the macro-level. For instance, domestic cats (*Felis catus*) are considered to be one of the biological species that share common observable properties (for example, having a tail, and having four legs) that indicate an underlying explanation for such a grouping of animals according to their features. This explanation draws upon the fact that all domestic cats belong to the same species, which also signifies a common cause or mechanism for these common properties.

### 3.2.2 Non-Natural Kinds

It has been purported that non-natural kinds are artificial categories that are constituted in such a way that represents humans' interests or actions (Bird & Tobin, 2008). For instance, "things taller than one meter," or "books with red covers" are categories created by people for specific purposes. So, entities collected under one category can also be grouped in different ways that might take into account their other features with respect to the purpose of the person who makes that categorization. These are, of course, very simplified versions of non-natural kinds. Nevertheless, this might not change the implication that they are considered as kinds for the sake of unscientific, personal human affairs. So, as opposed to natural kinds, non-natural kinds would not be eligible for scientific investigation. Since the kind of personal purposes used to assort non-natural kinds would only work in certain cases, non-natural kinds would not have the explanatory power in terms of generalizability and predictability as natural kinds seem to have.

### 3.3 Criteria for Identification

After reflecting on the examples of natural and non-natural kinds, we might start to set forth the criteria for identifying natural kinds. The most intuitive criterion would be that members of a natural kind should have *natural properties in common*. But apparently, this criterion would not attribute any distinctive roles to natural kinds

which would provide a distinction between them and non-natural kinds. After all, non-natural kinds have some natural properties in common as well. As Mill (1884) pointed out, whilst white objects certainly share the same natural property, that is, whiteness, they do not establish a natural kind. All that can be said about this criterion is, then, that it is a necessary but not a sufficient condition for a kind to be a natural kind.

It seems like, if a group of entities is to be a natural kind, one crucial criterion should concern their *suitability to fulfill empirically verifiable generalizations*. Simply, properties of entities should be designated in such a way that they exhibit themselves in other members of the same group so that they permit claims based on inductive inferences on those properties. Nevertheless, one may suggest that, at least on some occasions, this criterion is also valid for non-natural kinds. For instance, “things with a mass of 1 kilogram” would certainly constitute a kind, and there would be generalizations to be inferred about the things even within this vague boundary of “1 kilogram.” This would leave us with another necessary but not sufficient criterion in the identification of natural kinds.

It could be said that the criterion of the suitability of inductive inference points to perhaps the most important feature of natural kinds, which is the *causal mechanism* that explains the existence of properties and relations among properties placed within the cluster. In other words, the fact that natural kinds are projectable and they feature in true inductive generalizations are reflections of a causal structure. Boyd (1999: 149) sums up this interaction precisely as follows:

We are able to identify true generalizations in science and in everyday life because we are able to accommodate our inductive practices to causal factors that sustain them. In order to do this —to frame such projectable generalizations at all— we require a vocabulary... which is itself accommodated to relevant causal structures.

To put it in another way, the causal structure criterion could be understood through very simple reasoning:

Premise 1: Property clusters which reflect the world as it is, correspond to natural kinds.

Premise 2: The world has a causal structure that enables an explanation of the phenomena of the world (of things, processes, or states) in scientific discourse.

Conclusion: Therefore, the properties of natural kinds should reflect the causal structure of the world.

It seems that the causal mechanism criterion assumes that things in the world act in a rule-based manner. Meaning that, in a variety of possible conditions, the way that some phenomena act is pretty much determined one way or another. For example, if I throw a ball from a certain distance, and if I know its velocity, and the height I drop it from, then I can easily predict its time of fall, *ceteris paribus*.

Compared to other criteria, it seems that the most prominent one is the causal mechanism criterion, because, in a sense, it is the one signifying the turning point from non-natural kinds to natural kinds, enabling natural kinds to reflect the world as it is by indicating the causal structure of it. It might be said that this is why the overwhelmingly dominant view in the literature is based on this criterion. This view is called *the Homeostatic Property Cluster Account* (HPC) (Boyd, 1999).

Accordingly, members of a kind must instantiate a “property cluster,” a set of properties that reliably repeats itself in nature “in an important number of cases” (Boyd, 1989: 16). As mentioned above, on its own, this is an insufficient criterion for kinds to be called natural kinds. The clustering must also be underwritten by a homeostatic mechanism, a causal mechanism that explains why the properties tend to cluster together (Boyd, 1999). So, it resolves the possibility of inferring from the fact that some members of a kind instantiate certain properties the claim that other members of the kind will probably instantiate those properties as well because these properties are caused by the same mechanism. This explanation also provides a reason to suppose that other members of the kind will presumably “respond in similar ways to interventions” (Craver, 2009: 578). That is to say, they give us the opportunity for “prediction, explanation, and control” in ways that non-natural kinds cannot do (Craver, 2009: 578).

Now that we have three criteria for the identification of natural kinds, one might expect to have a more lucid idea about where to draw a line between natural and non-natural kinds. However, as pointed out previously, there are still blurred points in the line between natural and non-natural kinds, and this might be due to some scientific disciplines inability to fulfill those criteria. As opposed to other disciplines like physics or chemistry, psychology, in particular, is inept at giving adequate explanations of phenomena it investigates. Even though problems of psychology as a scientific discipline are beyond the scope of this thesis, two things can be said, which, then, might shed light on the central problem of the thesis.

To begin with, the phenomena of psychology are not convenient for generalization. There are too many exceptions that could not easily be ruled out in the process of theory construction. Moreover, the causal mechanism underlying psychological phenomena is not as apparent as the mechanisms of other natural sciences. After all, it is relatively effortless to observe the “behaviors” of a chemical element and the chemical reactions it participates in. Thus, it is easier to denote the cause and the effect which together form the underlying mechanism of that “behavior.” Nevertheless, in psychology, states and processes are often so obscure or context-specific that giving an objective explanation is trickier. It would be no surprise, then, with this much obscurity, it is also hard to find sharp boundaries among the phenomena that psychology investigates.

### 3.3.1 Evaluation of a Worry about the Criteria

Concerning all the criteria for the identification of natural kinds, much of the discussion in literature seems to be shaped within the framework of the *pragmatic conception* of natural kinds. One might say that this is not surprising since approaching the discussion of natural kinds from a scientific perspective necessitates embracing the pragmatic aspect.

On the other hand, one might assert that the pragmatic conception does not represent the way natural kinds *really* are. After all, this conception tightly depends on what people *can* investigate about the properties of kinds. Yet, what people can investigate

does not necessarily dictate what they can *ever* be able to investigate. So, it is still possible that according to the metaphysical conception, some kinds harbor natural divisions within themselves, which people have not yet been or will never be able to discover.

Someone, particularly, a scientist, might reply to this worry by saying that even though there is something mysteriously tempting about the metaphysical conception, committing to it would interrupt scientific investigations, let alone provide any use for them. If there is no certain way of knowing and designating whether some kinds are aggregated by reflecting the *real* divisions provided by nature or not, then what a scientist should do is to adopt the pragmatic conception and identify the kinds which are compatible with the current tools and paradigms of science.

However, this is not to say that kinds which seem to be incompatible with the current paradigm should not be a matter of debate, and thereby should be eliminated from scientific discourse. There are kinds, of which we are certain that have been grouped arbitrarily. There are, on the other hand, kinds whose natural kind status we are not so sure about. For the latter, it is still possible for them to be subject to revision until it is time when scientists ensure that they provide an extensive and reliable ground for empirical research.

### 3.4 Natural Kind Status of Emotions

After roughly settling certain issues about natural kinds, we may now turn back to the main question: Are emotions natural kinds? Bear in mind that this is rather different from the question of whether *the emotion* is a natural kind.<sup>7</sup>

To answer the main question of this thesis it would be convenient to check the criteria previously established. As a reminder, these criteria are as follows:

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<sup>7</sup> This question surely is an intriguing one. For a detailed discussion, see Griffiths, 2002, and Charland, 2002.

1. Natural kinds should have natural properties in common (whether they can be observed directly or not).
2. Natural kinds should be suitable for empirically verifiable generalizations (i.e., they should be suitable for inductive inference).
3. Natural kinds should track causal mechanisms.

The motivation behind asking the question of whether emotions are natural kinds or not is to find out if they are suitable for scientific investigation. So, it would be useful to check and evaluate if the criteria set forth for natural kinds apply to emotions considering the approaches incorporated in the scientific literature.

Methods of measuring facial and vocal signals, observing peripheral nervous system responses, and identifying neural circuitry have been used and they have provided crucial insights on the nature of emotions. There is also the behavioristic data, self-reflective reports of the subjects about the way they evaluate emotions, but these are even less clear than the other methods, and they do not seem to provide a secure ground for scientific investigations. Of course, this is not in any way to claim that they are not convenient for scientific investigation, otherwise, they would not have been used by scientists. But it should be reminded our focus is to find natural distinctions among emotion categories, independent of interpretation and external effects as much as possible.

Most of the research about emotions in psychology depend on the attempt to find out the underlying brain mechanism. The essential idea behind this research can be summarized as follows. There is a certain mechanism in the brain which brings about emotions. If this mechanism is pointed out and explained, then it would enable us to discern emotions and their structures. Finding out this mechanism would also enable us to distinguish the apparent distinctive features of emotion categories, and to comprehend how this mechanism differentiates certain emotions from others. To put it simply, it is assumed that emotion categories can be understood based on the brain.

It seems to me that the attempt to find out the distinct neural mechanism for each emotion category is more plausible when compared to other methods, in the sense that one can *explicitly* observe the underlying causal mechanism which gives rise to

those manifestations (vocal, facial, behavioral, etc.). So, the reason why I specifically focus on this method, namely neuroimaging, is related to its relative usefulness and simplicity in revealing the causal mechanism of each emotion category distinctly, in the clearest way.

### 3.4.1 The Locationist Approach

By far one of the most prominent approaches aiming to explain emotions based on the brain is the locationist approach. According to this approach, individual categories such as anger, disgust, fear, happiness, sadness (and perhaps a few others) are “respected” by the brain (Barrett, 2006b). To say that something is respected by the brain is to say that there is a corresponding thing, area, process, or state of the brain where the existence of that thing is indicated. In this approach, this indication is carried out by locations in the brain, hence the “locationist” approach. According to this assumption, there are specific areas in the brain whose activation points out emotion categories distinctively (Roseman, 1984; Ellsworth & Scherer, 2003). It should be noted that, however, not all natural kind models make use of the locationist approach. The models which do not make use of the locationist approach, on the other hand, point out to a specific pattern of autonomic nervous system activity that does not necessarily correspond to a specific brain locale, and they give an account of emotions based on this inherited mechanism which causes the emergence of emotions (Ekman & Cordaro, 2011; Tomkins 1962, 1963). Yet much contemporary research on emotions use locationist assumptions as a base and test their hypothesis through it (Lindquist et al., 2012). Barrett states that,

With the advent of neuroimaging techniques, such as functional magnetic resonance imaging (fMRI) and positron emission tomography (PET), a new version of the causal-mechanism hypothesis has emerged—that there may be a specifiable and separate neural circuit or brain marker that corresponds to each emotion category (Barrett, 2006b: 35).

According to Barrett, finding a specific location or a neural circuit for each emotion category indicates that emotion categories are distinct in themselves, that is, they are natural kinds. She asserts that “the key question for the natural-kind view of emotion

is whether *anger, sadness, fear*, and so on correspond to some natural division of emotional events within the human brain” (Barrett, 2006b: 43).

Let us now consider what kind of inferences has been made in accordance with locationist assumptions. Probably, the most popular example considers the amygdala as designated to be the brain’s center of fear. The reason for this designation is that the amygdala was increasingly activated when humans were exposed to situations that induce fear. This is called “the amygdala-fear hypothesis.” Some evidence for this hypothesis includes the fact that humans show increased amygdala activity when they are exposed to noise blasts, and individuals with amygdala lesions have difficulty in detecting instances of fear in voices (Brierley et al., 2004; LaBar, et al., 1995). Amygdala is not the only brain locale associated with a certain emotion category. Locationist accounts hypothesize that there are many brain locales which might be considered as the centers of specific emotions. For example, the anterior insula is regarded as the brain basis of disgust, the pregenual anterior cingulate cortex is responsible for the perception of sadness whilst the orbitofrontal cortex is closely linked with anger (Lindquist et al., 2012).

The problem with the locationist approach is that the regions of the brain are not functionally specific for perceiving certain emotion categories. According to the results of a meta-analysis which statistically summarize the last 15 years of neuroimaging research on emotion, there is little evidence showing that discrete emotion categories are consistently and specifically localized to distinct brain regions (Lindquist et al., 2012). They summarize the findings as follows:

In all instances where a brain region showed consistent increases in activation during instances of a discrete emotion category (e.g., the amygdala in instances of *fear* perception), this increase was not specific to that category, failing to support a key locationist assumption. Some brain regions showed functional selectivity for instances of certain emotion categories; these findings perhaps point to differences in the contents of mental states (Lindquist et al., 2012: 139).

This is to say that emotion categories could be realized by multiple regions and in numerous ways within the brain. This has a simple explanation. Brain, and in particular, its neurons are plastic. Meaning that, even in the absence of certain mechanisms or activation of certain locales associated with specific emotion

categories, it is possible to observe the realization of that emotion category by another mechanism or region. This is also true for other cognitive mechanisms such as memory processing and visual understanding (Bechtel & Mundale, 1999; Anderson, 2010). So, there might be no one-to-one correspondence between regions of the brain and the functions they carry out. Yet, this does not preclude the fact that mental states, in our case emotional states, are somehow realized.

### 3.4.2 Locationist Approach Reconsidered

One might say that one-to-one correspondence between emotion categories and brain regions is not a prerequisite for claiming that emotions are natural kinds. In addition, for emotions to be natural kinds, they do not have to be localized at all.

Scarantino (2012a) raises an objection in line with the former one. He states that Lindquist et al. presupposes that the natural kind view must embrace radical locationism. Radical locationism proposes that “discrete emotions consistently and specifically correspond to distinct brain regions” (Scarantino, 2012a: 162). Here, consistency and specificity refer to the idea that a brain region shows increased activity specifically for an instance of an emotion category, and it does so in every case of stimulation of that emotion category. This amounts to postulating that each one of the brain locales corresponds to a discrete emotion category. As pointed out above, this assumption is in tension with the fact that brain regions can have more than one function. However, as Scarantino (2012a: 162) points out, “natural kind models can endorse hypotheses about functional specialization other than radical locations which are compatible with the neuroimaging data.”

This suggestion, putting the multiple realizability thesis on its center, seems to be compatible with the idea of brain plasticity. As is commonly known, multiple realizability thesis asserts that there can be more than one way to the realization of a mental state. Distinct physical states can carry out the function of the same mental state. When identifying a mental state, then, one should consider its functional structure in terms of its causes and effects. That is to say, emotions must be defined functionally, devising the functional map of emotions.

To identify the functional structure of an emotion category, Scarantino suggests that one should focus on *networks* rather than single brain regions. Because he maintains that “brain regions do not have function in isolation, but rather in the context of the networks to which they belong” (Pessoa, 2008; Scarantino, 2012a: 162).

Considering this objection, Lindquist et al. accept that emotions do not have to be neatly localized to be regarded as natural kinds. To show that there are firm distinctions between emotion categories, one can address two things. First, indicating that “all instances of a category must be caused by the same biological mechanism (i.e., being homologous),” and second, showing that “instances share a distinctive marker or collection of properties (i.e., being analogous)” (Barrett, 2006a; 2007 as cited in Lindquist et al., 2012: 181). Apart from the localizability thesis, Lindquist et al. report that their meta-analysis does not support these two criteria.

On the other hand, as mentioned before, emotions might still be natural kinds without the need for an appeal to regions or networks. Moreover, properties of emotions might be neither analogous nor homologous, and they can still be distinct from each other with respect to their *essences*. Notice that this possibility is closely linked to the metaphysical conception. Emotions might still be natural kinds while bearing their essential properties within themselves, yet scientists might not be able to discover them. It looks as though this possibility still holds as an objection.

However, this might be a good objection *if* scientists were to adopt the metaphysical conception. But, as pointed out earlier, it would not be a charitable option. And Barrett seems to be adopting this pragmatic conception as well. If distinct emotions hold some essential thing within themselves which makes them distinct, then one should be able to designate them. If those essences are the kinds of things that cannot ever be discovered, then they should not concern the scientist and her investigation at all.

### 3.5 Confronting with the Impasse

At this point, it looks like we have two alternatives. The first alternative might be that emotion categories are not proper objects of scientific investigation, and thus, should be eliminated from scientific inquiry since they do not meet the criteria for identification of natural kinds are not eligible phenomena of scientific investigation. To put it simply, differences between emotion categories are so varied that it is arduous to find distinctive or characteristic features, especially when the empirical data is considered.

The second alternative considers the idea that tools of science, especially of neuroscience, are not developed enough to reveal simple explanations from the massive complexity of the brain. So, there is a problem with evaluating the validity of the counter-evidence to the natural kind status of emotions. By reconstructing the tools that cause an impasse, we might approach the issue more robustly.

If we choose the first alternative, that is, if we consider eliminating the phenomena of emotion as an object of science, then the necessity of reconsidering the scientific status of many phenomena in the scientific discourse emerges. Even though adopting this perspective may seem a plausible one (it finds proponents in the literature such as Griffiths, 2008), one might argue that this is simply taking the easy way out and putting psychology and cognitive science in an indeterminate position regarding their scientific success. That is to say, psychology and cognitive science include obscure phenomena as their objects of research, and if we were to eliminate all phenomena based solely on the idea that they are obscure, then these branches would not have much to do.

So, one might maintain that objects of science need not have certain boundaries among themselves, at least not as much as one might expect. It might be futile to expect simple, distinct and clear truths from scientific investigations at all. A defender of the locationist approach might say, then, that separations between emotion categories are of course not clear-cut. They rather resemble the nature of emotions as much as possible. Considering the brain's working mechanisms, it could only be posited that hypotheses about the brain and its functions embrace a probabilistic approach regarding functions and localizations. After all, it would be mistaken to expect that much certainty from science, especially from social sciences

and biology where variability among members is the norm (Scarantino, 2012b). Almost all scientific disciplines make ambiguous assumptions by presupposing an idealized world and aim to understand, analyze, and solve its problems through those idealizations.

The second alternative, concerning the inadequacy of scientific tools, might not shed light on the problem of natural kinds, and does not provide a full solution in itself, though it appears to be convenient. It does not give much information about the nature of emotions. It only calls attention to the problem but does not show the actual origins of the problem. So, it seems that we need a reliable picture of emotions to design proper tools for their investigation. That is, one should explicitly point out what the scientific tools cannot account for.

The second alternative lacks an explanation for the origins of the problem of whether emotions are natural kinds. However, there might be a final alternative to salvage this alternative, to get a more clear idea of the natural kind status of emotions. Simply put, one might accept that neuroimaging is not yet well-suited to yield evidence for functional specialization of emotions, and more refined levels of analysis are surely needed. In the following section, I will present this third alternative by pointing out the reason why one needs more sophisticated analyses, and where this reason leads us.

## CHAPTER IV

### A NEW HYPOTHESIS

In this section I will argue that in order to do justice to the examination of the nature of emotions, one should take the phenomenal aspect into consideration. This aspect might be a candidate that could provide some natural divisions as one would expect to find in natural kinds. Yet, it is also the very same aspect that places scientific status of emotions on a complicated and ambiguous level, and, allegedly creating an impasse. Explicating this phenomenal aspect requires one to consider the distinction between emotion and emotional sensation. When this distinction is made, I believe, one will have a more precise picture of the problem of natural kind status of emotions, and thus, have a more reliable ground to evaluate possible solutions.

It should be noted that, however, there are similar kinds of distinctions in the literature which has often appeared as the distinction between feelings and emotions, or has been presented as not a distinction but a hierarchical relation such that emotions are taken to be a class of feelings.<sup>8</sup> The distinction I will make and the distinctions that already exist in the literature might have some common points, and for this reason it might not be a purely unique one to consider. Still, I believe, it provides a new perspective to the main problem of the thesis.

The main idea argued in this chapter is as follows. Every emotional experience is a derivative of an emotional sensation. Emotional sensation, as I take it, designates the primitive level of an emotional experience. At this level, one is aware that she is experiencing some kind of an emotion, yet she is not able to identify the objects, reasons, and relations among them clearly. When she begins to think, deliberate, evaluate, and interpret her own emotional experience, she begins to clarify the components of her experience, and realizes the reasons that generates the experience. At the final stage, she conceptualizes her experience, and by putting it into one or more folk categories of emotion, she constitutes a common ground for her emotions

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<sup>8</sup> See also Prinz, 2004a; Damasio, 1994.

to be shared, understood by other people. From this point of view, folk categories are sensitive to the contexts and to the intentions of both the experiencer and the perceiver of emotions, providing a common ground for communication. In this sense, distinctions between emotion categories may not merely depend on natural divisions, and emotions might represent something more than the pure emotional experience itself.

Nevertheless, as I will argue, emotional sensations' having cognitive components of emotions as embedded in themselves might make them more convenient candidates for displaying natural divisions of emotions in a more clear and plain way, *if* there are any natural divisions at all.

The most salient aspect of emotional sensations, as I take it, is the phenomenal aspect. Whether the subject is explicitly aware of other constitutive components of her emotional experience or not, at this primitive level, she is at least aware that she is experiencing *some kind* of an emotion without labeling her condition. Also, it seems to be the case that the same subject is aware that her current emotional experience differs from previous ones with respect to the distinctive phenomenological properties it retains.

These distinctive phenomenological properties might be what make someone think that emotional sensations can, in fact, be natural kinds. Certainly, emotions might have distinctive phenomenological properties, as well. Yet, the effect of context and interpretation might be so prominent that we might not be able to identify the correspondence of these properties' to natural kind distinctions. That is to say, we might not be able to identify these processes naturally due to the huge impact of context and interpretation accompanying emotions. In every situation, every context, a person's nature of pure emotional experience might change due to her interpretation. Whereas, since emotional sensations refer to emotional experiences *before* the interpretation process, they might be less affected by those factors. In this respect, if there really is a natural distinction, this distinction can be grasped more lucidly when we look at the differences among the properties of emotional sensations.

Nevertheless, the question of whether emotional sensations are natural kinds is tightly dependent on the question of whether one can provide a scientific account of these distinctive phenomenological properties. At this point, I would like to adopt an agnostic perspective. Even though, in the literature, there are scholars who might think that this phenomenological aspect I am referring to cannot be explained with reference to scientific methods, I do not want to adopt such a strong opinion. Maybe, when scientific tools are advanced, when more fine-grained brain imaging techniques are adopted, we might be able to detect these natural divisions among emotional sensations, if there really are natural divisions among them. At this point, I think that the agnostic position is the most sensible approach to this problem, because no matter how developed our scientific tools might be, there is still the possibility that we might not be able to give an adequate scientific explanation of phenomenologically experienced natural divisions among emotional sensations.

#### 4.1 Emotional Sensations and Emotions

Very roughly speaking, bodily changes can be taken as the core of every emotional experience. Every emotional experience accompanies a bodily change regardless of its being distinctive or not. In this sense, I put bodily changes central to my hypothesis, as James does. Yet, I will not identify emotions with the perception of bodily changes and will use the term “emotional sensation” instead of “feeling” to emphasize on its composite nature.

My primary hypothesis can simply be summarized as follows. Emotional sensations are primitive bodily reactions to given stimuli both from the outside world and the body itself. Nevertheless, this primitiveness should not be taken to mean that they merely consist of bodily changes. I hold that objects of the world and relations among them are implicitly embedded in bodily changes. Revelation of these features requires a process of interpretation, a reflective introspection to the emotional process one experiences.

To say that objects of emotions are implicitly embedded in emotional sensations is to indicate that objects that cause, affect, or in some way associate with emotional

experience are not clearly known by the subject herself. Consider this example. At one stage of your life, you feel on the edge, annoyed, and bothered so that you get irritated by every little thing that you encounter. Then you retrospectively figure out that all your stress or whatever you felt was primed by your exam period. And you relate to people that your previous misbehavior was caused by your nervousness, so that your ambiguous reactions could be defined in order to be categorized thoroughly. Even though the cause and the object of your feeling was the same all along, only after interpreting the possibilities, you will have turned your primitive reactions into definable, concrete emotions that have a meaning in a given context and for yourself.

In this sense, primitive bodily reactions may be thought as having a passive character. Consider this analogy. If the body is likened to a thermometer, then sensations may be representations of the changes that the body detects upon itself. Yet these changes do not have a meaning on their own. Without a process of *reading* the degree of temperature and evaluating which category that degree falls into, numbers that are meant to represent temperature would be mere numbers. In this analogy, emotions are taken to be the evaluated forms of changes of temperature which a thermometer represents. To put it another way, emotions are not just reactions to the world. Once an evaluation or interpretation process enters the picture, emotional sensations take on their meaning.

One might argue that the analogy of thermometer falls short of explaining the relationship between emotions and emotional sensations because it is misconstrued from the beginning. This objection is surely a legitimate one. After all, a thermometer, in comparison with the mind, is not a thing that can realize and interpret changes that occur within itself. In other words, unlike the mind, a thermometer does not have an introspective or reflective character. At this point, it is crucial to point out what the term “meaningful” stands for in the context of emotions to clarify what the analogy actually represents. As I take it, emotions’ being “meaningful” refers to sharable, understandable, communicable features of emotions. That is to say, emotions are a form of emotional sensations, a constructed category that provides the ground for the possibility to the talk about emotional sensations. In

this respect, they are adjusted and shaped through the context to provide and maintain communication about emotional sensations.

#### 4.1.1 The Effect of Cognition in Shaping Emotions

However, one might argue that, what produces the distinct features of emotions is the cognition that is directed towards them. That is to say, only when someone cognitively elaborates on her emotional state, she would be in a position to determine what kind of an emotion she experiences. The same physiological, bodily changes can be interpreted with respect to the available cognitions, in such a way that quite different emotion categories become applicable to the present emotional experience of an individual.

At that point, I should mention a prominent study that aims to reveal the role of cognition in emotional experience and its classification. At the beginning of their study, Schachter and Singer (1962) hypothesize that cognitive factors are the major determinants of the emotional labels humans apply to a common physiological state. The results of their study meet their initial hypothesis, and they find that given precisely the same internal state or bodily condition (specifically, epinephrine-induced sympathetic activation), subjects were labeling their states disparately when they have manipulated their physiological states by means of cognitive factors. That is to say, the same bodily change or condition could be evaluated and categorized differently with respect to the cognitions available to the subject. Schachter and Singer take this finding as an indicator of the ineliminable role that cognitive factors play in any formulation of emotion. Moreover, the findings also suggest that bodily changes in themselves are not sufficient for labeling emotional experience properly. If the same bodily condition can be interpreted differently with respect to the cognitions available to the subject, then the key element designating the category that the emotional state falls into would be the cognitive part of that emotional state.

At first sight, this claim may seem completely incompatible with the notion of emotional sensations and their discrete phenomenological perceptions. However, it does not have to be so. At the first level of emotional experience, Schachter and

Singer seem to focus only on physiological changes. That is to say, they present emotions as something constituted by physiological changes plus a cognitive part that is added on with respect to the condition or state one is in. Nevertheless, it seems obvious that physiological changes in themselves would not represent emotions fully and clearly. In this regard, since emotional sensations, as opposed to bodily changes, have intentionality within themselves, may represent the cognitive part of emotions and may provide distinctions that are analogous to the distinctions of current available cognitions.

Notice also that the kind of approach Schachter and Singer seem to embrace seems to be kind of an add-on theory Goldie presents and objects to. To remind what Goldie (2002) states, add-on theories take emotions to be constituted by objects of emotional experience and mechanisms which, when combined, give meaning to emotions.

When I say that emotions are derived from emotional sensations, one might think that I am proposing an add-on theory that Goldie objects to. It is not necessarily the case. Notice that there is a difference between saying emotional sensations are the primitive forms of emotions and saying emotions result from adding cognition to emotional sensations. I argue for the former one. To remind, I think that the objects of cognition within the emotions and the relations between these objects are implicitly embedded within emotional sensations, and they take an explicit form via interpretation. Meaning that, adding some object that was not previously there, is not the case. This is why it seems as though it is not correct to say that there is a new thing added on.

#### 4.1.2 Contrasting with Barrett's Theory

At face value, this new proposal might seem very much alike the constructivist theory of emotions, particularly Barrett's. However, despite their commonalities, the two approaches differ with respect to two points: the contents of core component of emotions, and related to this, the answer they provide to the problem of natural kind status of emotions.

As I addressed in section 2.3, Barrett states that emotional experience consists of basic psychological processes. Accordingly, emotional experience is nothing more than basic psychological mechanisms coming together to form an experience. Among the fundamental psychological processes, she asserts that “core affect” might be considered as essential. Core affect refers to constantly and consciously experienced feelings and their neurophysiological substrates which evaluate situations or objects on the basis of two grounds: hedonic tone or valence, and arousal (good-bad, pleasure-displeasure, activation-deactivation) (Russell & Barrett, 1999; Russell, 2003). The important thing to note is that core affect, in contrast with cognitive phenomena like beliefs or perceptions, does not involve intentionality. It merely designates the intrinsic reactions to given stimuli. According to this, when Prinz’s alcoholic beverage metaphor is reconsidered, core affect might be taken as ethanol rather than the alcohol itself (Atkinson, 2009). It is the underlying chemical compound that lies beneath every alcoholic beverage, but just by itself, it would not create diversity among beverages. In parallel, discrete emotion categories appear when core affect is combined with cognitive elements. Atkinson (2009: 552) presents a good summary of this idea as follows:

Discrete emotional states occur when perceptual and conceptual knowledge (including knowledge of antecedent events, past experiences, and social norms, as well as cognitive evaluations) are applied to momentary states of core affect, resulting in the categorization of that affect in thought, language, and behavior.

The impact of these psychological mechanisms Atkinson mentions is so huge that the so-called characteristic features of emotion categories vary from culture to culture, and even from context to context. That is why, according to Barrett, emotions’ being natural kinds is an assumption that have to be discarded. The divisions among emotion categories and within the categories emerge out of the interactions among psychological mechanisms, so there is no significant and distinct feature of those categories that would render them natural kinds.

My first disagreement about Barrett’s theory occurs when the notion of core affect is reconsidered. At face value, one might say that this notion is so minimal a criterion to identify with the core of emotional experience that there is not much to disagree with. However, as I take it, in the core of emotional experience, there should be more than merely intrinsic reactions. Otherwise, there would be nothing that distinguishes

the core affect from bodily sensations, resulting in core affect leaving out the affective aspect of emotions. In other words, even though the core affect might be a basic component that all emotions have in one way or another, this would not show much about the real nature of emotions, considering other psychological mechanisms and the context that affect the way emotions are realized significantly. One might say that if A is said to be the core of B, the essential feature of that B should represent it even in a primitive form. That is to say, if core affect essentially is what makes an emotion *emotion* then it should have some respective emotional features that might make us recognize it as the core of emotion. Then we need a concept that might just provide us with this requirement of having intrinsic intentionality, and emotional sensation might be a good candidate in explaining this aspect.

Apart from that, the main reason why I argue that psychological constructivist theories of emotion, and Barrett's constructive theory in particular, are not extensively successful is related to their inadequacy in providing insights to the real difficulty which scientific studies of emotions encounter. This difficulty is about the phenomenological aspect of emotions. Let us take it for granted that emotions are constitutions of the mind and emotion categories are just arbitrary groups of emotions that are affected by various kinds of mechanisms through the emergence process. So, distinctions between emotion categories do not reflect "real" distinctions that can be observed and evaluated. Nevertheless, one can still maintain that, phenomenologically, she can realize the difference among her own emotional experiences even before realizing that she is in a certain emotional state. She might maintain that her sensations are distinct in themselves and their distinctiveness also present itself when sensations are turned into emotions, even if in a relatively different manner. To put it differently, even if emotions are constructions of the mind, would it necessarily follow that divisions among them are also constructed? I do not think so. Surely, to say that "they differ from one another naturally because I feel them as if they are" would not be a convincing argument, irrespective of its being an argument at all. Yet, it might be worthwhile as a starting point to query the possibility of the distinctiveness of emotions originating from their core which is the most prominent component.

#### 4.2 The Possibility of Emotional Sensations Being Natural Kinds

I argue that, intuitively, when we experience emotional sensations, we realize that they differ from one another while preserving clear boundaries. One detects the natural divisions among emotional sensations phenomenologically. In other words, in the experience of emotional sensations, even though one does not have separate labels for emotional sensations' distinct experiences just as emotion categories have (such as "fear," "happiness," "sadness"), one can intrinsically experience and realize that those sensations are distinct with respect to the way they make one feel. I can surely distinguish and tell that the way I sense an emotional sensation differs from another emotional sensation, but if I were to put those experiences into words, name and categorize them according to the categories I have already developed to express those experiences, I would be interpreting the pure version of my emotional experience (i.e., emotional sensation) and turning it into something more complex and context-dependent.

Consider this example. One goes into a slightly dark room where the objects can hardly be discerned. At first, what one can say at best is that she perceives objects which roughly differ in size or shape. Then, she begins to realize which objects stand in the room, what kind of features they have in particular such as their colors, textures. At the latest step, she begins to construct a relationship between those objects and interprets the room and the objects in the light of this network of relationships. Considering the general picture of the room, the objects take upon meaning. Perception of the objects should be interpreted in such a way that it reflects this relational aspect. Only then, the person would have a clear understanding of her surroundings and the objects in the room, in the sense that this new understanding provides the ground to answer questions such as "what sort of room she's in," "which objects stand in there," and "how one can make use of them to make sense of the properties of the room in general."

It seems to me that emotional experience resembles well to the experience of this dark room, if not comprehensively. When one contemplates about her emotional experience, think of it as a flux of emotional states, the first thing to notice is the distinctions between those states. Nevertheless, those distinctions might not appear

as clear as they will turn out to be after the process of evaluation. This process requires one to consider and interpret her emotional state with respect to both the context and other concurrent emotional and mental states.

I argue that, being the primitive forms of emotions, emotional sensations might represent the natural distinctions among themselves, if there are any, in a more clear way, considering that they are only slightly exposed to interpretation.

One worry regarding the distinct nature of emotional sensations might be that they do not reveal themselves as distinct in such a way that they would correspond emotion categories respectively. If experience of emotional sensations harbors natural distinctions within itself, then these distinctions could also be observed in the experience of emotions.

Barrett (2006b: 24) refers to this problem and asserts that “the taxonomic structure of experience should reflect the structure of emotions as they really exist in nature.” That is to say, if anger, sadness, disgust, and fear are distinct in themselves, i.e., they have naturally discrete boundaries among themselves, then this distinctiveness should also be displayed in the experience (Barrett, 2006b). So, for example, everyone should be able distinguish between an angry feeling, and a sad feeling. Contrary to this expectation, however, Barrett claims that not everyone necessarily experiences emotions as qualitatively different states. It is highly possible and even common that people categorize their emotional experiences differently. While some people use discrete emotional terms, for example, others identify them broadly, by using global terms (Barrett, 1998; Barrett et al., 2001; Feldman, 1995). Barrett interprets these results to indicate that not everyone can realize the difference among the emotional states they experience. One thing to keep in mind, however, is that Barrett’s claim depends on self-reports of people who evaluate their emotional experiences.

On the other hand, results might not indicate that people are not aware of the differences among their emotional experiences. There is still the possibility that they recognize and identify them on an unconscious level. Here, the term “unconscious” refers to a state where one is unaware of what kind of a mental state she is in.

Nevertheless, one can still distinguish one state from another without indicating the contents of the those states. They might only be interpreting what is available to them phenomenologically. In this sense, those self-reports might reflect people's beliefs, thoughts, or evaluations about what they feel rather than the actual contents of their feeling.

Considering this possibility, it seems to me that evidence based on self-reports does not offer a plausible reason to reject the idea that emotional sensations might have natural boundaries within themselves. One can still indicate that she is actually aware of experiencing emotional sensations clearly and distinctly. But after the process of, in Barrett's terms, interpretation and categorization, these sensations turn out to be not as clear and distinct as the way they are experienced at first. That is to say, distinctions among emotional sensations do not, and need not correspond to emotion categories. If the distinctions among emotion categories reveal themselves as a form of categorization, concept formation, interpretation, or meta-cognition, then it would be futile to expect to find one-to-one correspondence among them.

It can also be the case that folk emotion categories take emotions more broadly. For example, in what they call "anger," one might come across ten *types* of anger. But emotional sensations, since they are more precise, might help us find more fine-grained categories by revealing the true natural distinctions among themselves.

#### 4.3 Being Agnostic about the Natural Kind Status of Emotional Sensations

What was illustrated in the previous sub-section seem to be one of the prominent reasons why the distinctions among emotion categories cannot only be revealed by looking at their brain basis. If the distinctions among emotion categories are highly or even completely dependent on the way we interpret them, then it would be conceivable to expect that more than one mechanism is involved in the realization of these categories. For example, if categorizing mechanism is an activity of the brain, then, of course, categorizing itself comes into the picture (among other cognitive mechanisms) when one thinks about her own emotional states, and tries to put her present emotional state into an allegedly correct emotion category. That is to say, the

possibility that those mechanisms are so interwoven with each other that it makes a scientist's task involved in the sense that it is hard or even impossible to indicate the constitutive mechanisms separately. So, looking at emotions' brain basis might not be fruitful.

One may argue that even if it is the case that those distinctions are interpretation-dependent, this is not a reason to give up seeking the brain basis of this interpretation process. That is to say, it might be accepted that emotions are not single objects that are to be found distinctively in the brain, rather they are the products of multiple cognitive mechanisms which constitute emotions all together. Once these mechanisms are explained in a step by step fashion, we would have a more clear picture about the distinctions among emotions, and about their nature as psychological constructivist theories point out.

However, what I believe the most crucial reason that creates an illusory impasse for the scientific studies of emotions is a problem about giving explanations to *phenomenologically experienced divisions* among emotional sensations. If certain emotional sensations are experienced distinctively, and if those distinctions cannot be examined and explained in the way they are experienced, then an important question appears. How can science give an account of emotions which incorporates the phenomenology of them? If the existence of such phenomenological divisions is a precondition for the possibility of a differentiated experience, then the scientific understanding of emotions which aims to explain those experiences should be able to give an account of emotions on the basis of those distinct phenomenological experiences. To simplify, the main question can be stated as follows. Why can't someone account for, represent, or observe phenomenological content and the corresponding natural categorical divisions in scientific studies?

In the previous chapter, I remarked that natural kinds are not mind-dependent entities. That is, they should reflect reality in such a way that they point out to genuinely natural divisions out there in the world. But in case of chemical compounds, plants, or any kind of physical objects, we deal with objects of the world that exist, in a sense, independently from us. They exist whether we perceive them or not. However, in case of emotions, and specifically, emotion categories, the situation

is slightly different. There is no external object of emotional experience that exists independently from the perceiver. This is not to say that emotions do not have objects. An object may be the object of an emotion. An object may invoke emotional experience. But without some kind of a personal mechanism, be it cognitive or affective mechanisms, the object itself is tangential to the production of emotional experience. So, objects of the emotional experience is a perceiver-dependent phenomena. The perceiver herself provides the conditions for the object to be perceived. That might be the one and maybe the most essential reason why scientific theories of emotion are inadequate in representing the contents of emotions.

#### 4.3.1 Goldie's Pessimism about Studying Phenomenology Scientifically

As mentioned in Chapter II, Goldie takes a critical stance concerning scientific account of phenomenological aspect of emotional experience. Goldie (2002: 249) states that

Scientific investigation of the emotions, from a purely impersonal perspective, deploying purely impersonal theoretical concepts, inevitably –and quite appropriately from this stance– makes no *use* of phenomenal concepts, which are only available from the personal perspective; whereas phenomenology is essentially personal, and makes essential use of phenomenal concepts... But perhaps that does not matter given that science and phenomenology are in different businesses. It would matter, however, if science were to aspire to give an adequate characterization of the phenomenology from its impersonal perspective, for this cannot be done: science is impersonal, and our ordinary way of thinking about emotional experience is personal.

As much as Goldie's approach seems convincing, I do not think what science can achieve and discover are set in stone. What was previously thought as impossible to study scientifically, or what was previously apprehended as mysterious can now be objects of science. For example, "personal" features such as memory and perception have been extensively studied in science. At this point, one might object that what is studied in memory and perception studies are not purely "personal," like phenomenology is "personal." Even though, considering the developments achieved in scientific studies, one might say that studying phenomenology scientifically may not be impossible.

All the while, I am not claiming that we will account for the whole picture concerning emotions. Goldie seems to expect science to explain the phenomenological aspect comprehensively. However, I think that it would be sufficient if science gives an adequate enough solution to the problems of phenomenology. What counts as “adequate” depends on the perspective one takes about scientific affairs. After all, it might be unreasonable to expect that science can tell us everything we need to know about emotions.

Considering these factors, I argue that more detailed and revised versions of scientific tools might enable us to reveal the core nature of emotions. In this sense, it seems to me that the question of whether emotional sensations are natural kinds or not preserves its uncertainty, at least for now. That is why I think it would be most convenient to embrace an agnostic position regarding natural kind status of emotions without a clear picture.

#### 4.4 A Concluding Remark

The hypothesis I present may seem like it adopts the metaphysical conception of natural kinds since it aims to find *real* distinctions in nature. But, in fact, this is not what I am trying to do. As I mentioned, adopting the metaphysical conception, that is, defending the idea that every kind has its own absolutely essential necessary and sufficient properties, is not a scientifically fruitful approach.

I underline the possibility of emotional sensations harboring natural divisions among themselves because emotional sensations’ properties, compared to emotions’ complicated and convoluted structures, might be more suitable for scientific research.

## CONCLUSION

In this thesis, I tried to investigate the problem of the natural kind status of emotions. I believe that this problem is closely related to the scientific exploration of emotions. Prior to answering this question, I focused on the sensation-based prominent theories of emotion in literature to look how they categorize emotions. This provided an initial insight as to where the differences among emotional experience might originate from. Then, I examined natural kinds thoroughly and set forth criteria for the identification of natural kinds. According to the existing empirical evidence, the natural kind status of emotions is debated.

In the last chapter, by providing a distinction between emotions and emotional sensations I tried to narrow down the actual scope of this existing problem. In this narrowed approach, I take emotional sensations to be the cores of emotions. Considering this new scope, the thing that could provide clues for the existence of natural divisions is the phenomenological aspect of emotions. I adopted an agnostic stance as to whether a scientific explanation can be given to emotional sensations. Thence, the question whether emotions are natural kinds or not preserves its uncertainty. I do not believe that one can find an answer to this central question before providing an explanation to the question concerning the natural kind status of emotional sensations. The next question for further research might be, then, what kind of tools science should develop to reveal the above-mentioned phenomenological aspect of emotions.

## REFERENCES

- Anderson, M.L. (2010). Neural reuse: A fundamental organizational principle of the brain. *Behavioral and Brain Sciences*, 33(4): 245-66
- Atkinson, A. P. (2009) Emotion. In Symons, J., & Calvo, P. (Eds.) *The Routledge companion to philosophy of psychology*. Routledge, pp. 543-554
- Barrett, L. F. (2006a). Solving the emotion paradox: Categorization and the experience of emotion. *Personality and social psychology review*, 10(1), 20-46.
- Barrett, L. F. (2006b). Are emotions natural kinds?. *Perspectives on psychological science*, 1(1), 28-58.
- Barrett, L. F., Lindquist, K. A., Bliss-Moreau, E., Duncan, S., Gendron, M., Mize, J. & Brennan, L. (2007) Of mice and men: Natural kinds of emotions in the mammalian brain? A response to Panksepp and Izard. *Perspectives on Psychological Science* 2(3):297–311
- Barrett, L. F. (2017). *How emotions are made: The secret life of the brain*. Houghton Mifflin Harcourt.
- Bechtel, W. & Mundale, J. (1999). Multiple realizability revisited: Linking cognitive and neural states. *Philosophy of Science*, 66, 175-207.
- Bird, A. & Tobin, E. (2008). Natural kinds. In Edward N. Zalta (ed.), *Stanford Encyclopedia of Philosophy*.
- Boyd, R. (1989). What Realism Implies and What it Does Not. *Dialectica*, 43(1/2), 5-29.
- Boyd, R. (1999), "Homeostasis, Species, and Higher Taxa", in Wilson, R. (ed.), *Species: New Interdisciplinary Essays*, Cambridge, MIT Press , pp. 141-185.
- Brierley, B., Medford, N., Shaw, P. & David, A. S. (2004) Emotional memory and perception in temporal lobectomy patients with amygdala damage. *Journal of Neurology, Neurosurgery, and Psychiatry*, 75:593–99.
- Charland, L. C. (2002). The natural kind status of emotion. *The British journal for the philosophy of science*, 53(4), 511-537.
- Cooper, R. (2004). Why Hacking is wrong about human kinds? *British Journal of Philosophy of Science*, 55, 73–85.

- Craver, C. F. (2009). Mechanisms and natural kinds. *Philosophical Psychology*, 22(5), 575-594.
- Damasio, A. R. (1994). *Descartes' Error: Emotion, Reason, and the Human Brain*, New York: G.P. Putnam's Sons.
- Ekman, P. and Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, 17, 124-129.
- Ekman, P. & Cordaro, D. T. (2011) What is meant by calling emotions basic. *Emotion Review* 3(4):364–70.
- Ellsworth, P.C., & Scherer, K.R. (2003). Appraisal processes in emotion. In R.J. Davidson, K.R. Scherer, & H.H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 572–595). New York: Oxford University Press.
- Goldie, P. (2000). *The emotions: A philosophical exploration*. Oxford University Press.
- Goldie, P. (2002). Emotions, feelings and intentionality. *Phenomenology and the Cognitive Sciences*, 1(3), 235-254.
- Griffiths, P. E. (1997). *What emotions really are: The problem of psychological categories*. University of Chicago Press.
- James, W. (1884). What is an emotion? *Mind*, 9, 188-205
- Khalidi, M. (2015). Natural Kinds as Nodes in Causal Networks. *Synthese*, 1– 18
- LaBar, K. S., LeDoux, J. E., Spencer, D. D. & Phelps, E. A. (1995) Impaired fear conditioning following unilateral temporal lobectomy in humans. *Journal of Neuroscience*. 15(10):6846–55.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Lindquist, K. A., Wager, T. D., Kober, H., Bliss-Moreau, E., & Barrett, L. F. (2012). The brain basis of emotion: a meta-analytic review. *The Behavioral and brain sciences*, 35(3), 121.
- Mill, J. S., (1884). *A System of Logic*, London: Longman.
- Neu, J. (2000): *A Tear is an Intellectual Thing: The Meanings of Emotion*, Oxford: Oxford University Press.
- Pessoa, L. (2008) On the relationship between emotion and cognition. *Nature Reviews Neuroscience* 9(2):148–58.
- Prinz, J. (2004a). *Gut reactions: A perceptual theory of emotion*. Oxford University Press.

- Prinz, J. (2004b). Embodied emotions. In R. C. Solomon (Ed.), *Thinking about Feeling: Contemporary Philosophers on the Emotions* (pp. 44-59). Oxford, New York: Oxford University Press.
- Prinz, J. (2005). Are emotions feelings?. *Journal of Consciousness Studies*, 12(8-9), 9-25.
- Roseman, I.J. (1984). Cognitive determinants of emotion: A structural theory. *Review of Personality & Social Psychology*, 5, 11–36.
- Russell, J. A., & Barrett, L. F. (1999) “Core affect, Prototypical Emotional Episodes, and Other Things Called Emotion: Dissecting the elephant,” *Journal of Personality and Social Psychology* 76: 805–19.
- Russell, J. A. (2003) Core affect and the Psychological Construction of Emotion, *Psychological Review* 110: 145–72.
- Scarantino, A. (2012a). Functional specialization does not require a one-to-one mapping between brain regions and emotions. *Behavioral and Brain Sciences*, 35(3), 161-162.
- Scarantino, A. (2012b). How to define emotions scientifically. *Emotion review*, 4(4), 358-368.
- Tekin, Ş. (2016). Are Mental Disorders Natural Kinds?: A Plea for a New Approach to Intervention in Psychiatry. *Philosophy, Psychiatry, & Psychology*, 23(2), 147-163.
- Tomkins, S. S. (1962) *Affect imagery consciousness: Vol. 1: The positive affects*. Springer Publishing Company.
- Tomkins, S. S. (1963) *Affect imagery consciousness: Vol. 2: The negative affects*. Springer Publishing Company.