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Emergent Emotion

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Emergent Emotion: THESIS SUMMARY

I argue that emotion is an ontologically emergent and *sui generis*. I argue that emotion meets both of two individually necessary and jointly sufficient conditions for ontological emergence. These are, (i) that emotion necessarily has constituent parts to which it cannot be reduced, and (ii) that emotion has a causal effect on its constituent parts (i.e. emotion demonstrates downward causation).

I argue that emotion is partly cognitive, partly constituted by feelings and partly perceptual. 1) I argue that both the type and the intensity of an emotion supervene on cognitive factors. But emotion cannot be reduced to cognition because emotions are paradigmatically valenced and cognitions are not. 2) I argue that the phenomenal properties of emotion are determined by bodily feelings, thus emotion necessarily requires feelings. But emotion cannot be reduced to feelings because emotion has rational properties not held by bodily feelings. 3) I argue that the intentional objects of emotion are perceptual objects, and hence emotion necessarily requires perception. But emotion cannot be reduced to perception because emotion has second orders (as evidenced by metaemotion) and perception does not. Thus emotion meets the first necessary condition for ontological emergence; emotion has constituent parts to which it cannot be reduced.

I go on to argue that emotion has a causal effect on its 4) cognitive, 5) feeling, and 6) perceptual parts, both as a faculty and at the level of the individual emotion.

Emotion meets the two individually necessary and jointly sufficient conditions for ontological emergence: (i) emotion has composite parts to which it cannot be reduced, and (ii) emotion has a causal effect on its composite parts. Thus emotion is ontologically emergent. Being ontologically emergent, emotion is *sui generis*.

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Introduction:

In an article in *The Guardian*¹, Oliver Burkeman claimed that researchers and experts on emotion have, for many years, been hiding a secret. “They don’t discuss it in interviews,” he writes. “But get chatting to a psychologist on his or her third whiskey, at a lonely bar on the outskirts of town near closing time, and you might finally hear the truth.” The truth, according to Burkeman, “is that no one really has a damned clue what an emotion is”.

One of the problems in finding the answer to the persistent mystery of emotion is that science, with all of its specialisms, seems ill equipped to provide a coherent answer. Neurology and biochemistry can tell us what happens in the brain and the body when we experience emotion; psychology can tell us what happens in the mind; sociology can tell us what happens in society as a consequence. But ultimately each specialism holds only part of the answer. The bigger picture gets lost in its pixilation, so to speak. This is because, in essence, the question “what is an emotion” is a philosophical question, requiring a philosophical answer. The aim of this thesis is to provide such an answer.² I will argue that emotions are ontologically emergent and *sui generis*. On my view, humans are best understood as possessing, in addition to our cognitive and perceptual faculties, a complex faculty of emotion which blends together thoughts, feelings, and perceptions. My view contrasts with three main types of rival view: those according to which emotions can be reduced to cognitions; those according to which emotions can be reduced to feelings; and those according to which emotions can be reduced to

¹ Oliver Burkeman 14.08.2015 “What is an emotion?” in the Guardian online: <http://www.theguardian.com/lifeandstyle/2015/aug/14/oliver-burkeman-what-exactly-is-an->

² My concern throughout this thesis lies solely with occurrent emotion; I make no commitment with regard to moods or dispositional emotion.

perceptions. I argue against each in the course of articulating and defending my own, novel view.

In the remainder of this introduction, I provide a brief explanation of ontological emergence, which is central to my view. I explain that there are two individually necessary, and jointly sufficient, conditions which emotion must meet if it is to be considered ontologically emergent: (1) emotion must have constituent parts to which it cannot be reduced; and (2) emotion must have a causal effect on those constituent parts. I go on to provide a summary of my thesis, which is formed of two parts, each one dealing with one of the two necessary conditions. In Part I, I argue that emotion is constituted by cognitions, feelings and perceptions, but that it cannot be reduced to any one of these. In Part II, I argue that emotion has a causal effect on its constituent parts.

Ontological Emergence: a short introduction

Emergence theory is concerned with ways in which complex systems³ might be explained. By definition, complex systems have mereological⁴ parts on which they supervene⁵ – otherwise they would be simple rather than complex. However,

³ I use the term ‘complex system’ as a catch-all to denote complex biological phenomena as well as non-biological complex compounds, structures or arrangements.

⁴ Mereological parts might roughly be described as intrinsic composite parts of a whole. For example the tines and the handle are mereological parts of the fork. For more on mereology see Varzi (2015).

⁵ Supervenience is a dependence relation which describes how the higher-level properties of a system necessarily depend on its lower-level properties. If we call the higher-level properties of a system ‘H’ properties and we call the lower-level properties of that system ‘L’ properties then the supervenience relationship can be defined as follows: H-properties supervene on L-properties if and only if anything that has some H-property necessarily has some L-property, such that having that L-property guarantees having that H-property. For example, a person’s discernible characteristics such as the colour of their eyes (an H-property) supervenes on that person’s genetic makeup (an L-property). In our world it is a matter of nomological necessity that a person with a

philosophical controversy exists as to whether a complex system can be described as being merely the aggregation of its parts (and therefore explainable solely in terms of those parts) or whether the emergent system can be said to be different in kind from the parts on which it supervenes; i.e. whether the emergent system can be characterised as a metaphysically new phenomenon. Metaphysical claims of this kind can be difficult to substantiate, and so ontological emergence remains controversial.

An example may help to clarify. Sodium (Na) molecules and chlorine (Cl) molecules combine, in a 1:1 ratio, to form sodium chloride (NaCl), or table salt. Table salt has qualitatively different properties from those of its constituent parts. For instance, sodium is a soft silvery metal, which oxidises (loses electrons) under standard conditions of temperature and pressure unless it is immersed in oil. Under the same standard conditions, chlorine is a gas. These two chemical elements combine to form table salt, which is a crystalline mineral. The question that emergence theory addresses is whether table salt should be characterised merely as a combination of sodium and chloride (i.e. merely an aggregation of its parts); or whether it should be characterised as different in kind from its parts, and therefore as something metaphysically new.

Some theorists⁶ hold the position that complex systems are merely the aggregation of their parts and thus can be characterised ontologically by appeal to those parts. Others⁷ hold that the property differences between a complex system and its parts is evidence of a difference in kind between the emergent system and the parts on which it supervenes.

particular eye colour necessarily has a particular chromosomal makeup, such that a person with that chromosomal makeup is guaranteed to have that eye colour. For more on 'Supervenience' see McLaughlin and Bennett (2014).

⁶ See Bedau (1997), Kim (2006).

⁷ See Davies (2006), O'Connor (1994, 2000), O'Connor & Jacobs (2003), O'Connor & Wong (2015), Van Gulick (2001).

On this latter view, for instance, the property differences between salt (a crystalline mineral), and its sodium (a soft metal) and chlorine (a gas) constituents, constitutes evidence that salt is an emergent compound. On this view, if there is a difference in kind between salt and its constituents then our ontological commitments ought to reflect that difference.

The reductionist position, however, argues that property difference is not sufficient for ontological emergence. For instance, Jaegwon Kim (2006) argues that if property difference *were* sufficient then too many properties would count as emergent; “this object on my desk has the property of being a ballpoint pen, although none of its parts are ballpoint pens; the brick I am holding is hefty, although none of its molecular parts are hefty, and so on” (Kim 2006, p.192). Indeed, both Kim and Mark Bedau (1997) treat the notion that an emergent system can ever be ‘more than the sum of its parts’ as deeply problematic. Bedau suggests that such a claim “is uncomfortably like magic” (1997, p.377). He questions how complex systems that arise from the aggregation of parts could be characterised as anything more than mere aggregations. On his view if one had access to all of the information about the systems composite parts, as well as the laws underlying their interaction, one could theoretically predict the emergent properties of a complex system. In practice, such predictions are limited by our knowledge, and so it is only through simulation that emergent properties become known. Given this, such emergent properties may be said to be epistemically emergent but that does not entitle one to claim that they are ontologically emergent.

Epistemic emergence (also known as ‘weak emergence’) is, therefore, a weaker thesis than ontological emergence (also known as ‘strong emergence’). It recognises that a

complex system can have qualitatively different properties from the properties of its mereological parts. It also recognises that, as a result of those differences, one cannot predict the emergent system's properties in advance; one cannot predict its properties based purely on the properties of its constituents. But it denies that this indicates a difference in kind, and thus maintains that no further ontological commitment is required beyond characterising the complex system as an aggregation of its parts.

In order for an emergent system to claim a difference in kind, it must demonstrate a causal effect that could not be ascribed to its constituents. For instance, salt has a corrosive effect on metal. On the epistemic emergence view, this effect might be explained as being due to the effect of the constituents of salt (corrosion might be due to the effects of sodium or chlorine), in which case one need not commit to the view that salt is ontologically emergent. On this view, the only way one could plausibly claim that an emergent system is *ontologically* emergent, is if that system can be shown to have a causal effect on its mereological parts. If the emergent system has a causal effect on its constituents, then the effect cannot be said to be due to those constituents. This is because each constituent would not have a causal effect on itself; and the effect of individual parts on each other is already demonstrated as yielding the emergent phenomenon. For instance, sodium has no causal effect on sodium (ditto for chlorine), and the causal effect of interaction between sodium and chlorine is the formation of salt.

If an emergent system has a causal effect on its constituents, it must be due to the emergent system being somehow 'more than' merely the aggregation of its parts. This notion of a system having a casual effect on its mereological parts is known as

‘downward causation’, and for the reasons described, it is the *sine qua non* of ontological emergence.

Putting all of this together I am now in a position to describe the necessary and sufficient conditions for a claim of ontological emergence. A system can be said to be ontologically emergent if and only if it demonstrates the following individually necessary, and jointly sufficient, conditions:

1. The emergent system is composed of parts to which it cannot be reduced.
2. The emergent system demonstrates downward causation.

In this thesis I will argue that emotion meets the necessary and sufficient conditions for ontological emergence.

Part I Summary:

In Chapter 1 I argue that emotion is partly cognitive, but that it cannot be reduced to cognition. The chapter is composed of three parts. First (§1.1), I argue that the type and intensity of emotion are partly determined by cognition. Hence, emotion is partly cognitive. I defend my position against four potential challenges; a challenge from the passivity of emotion; a perceptualist challenge; a challenge from recalcitrant emotion; and a challenge from contingency. Second (§1.2), I present a cognitivist argument for the reduction of emotion to cognition. Third (§1.3), I argue that cognition cannot fully explain emotion because emotion has at least one property not held by cognition;

emotions are paradigmatically valenced and cognitions are not. Thus emotion is partly cognitive, but it cannot be reduced to its cognitive parts.

In Chapter 2 I argue that emotion is partly constituted by feelings, but that it cannot be reduced to feelings. First (§2.1), I argue that the phenomenal properties of emotion are partly determined by feelings; what it's like to have an emotion is partly determined by how that emotion feels. I argue that this is an intuitive claim (reflected in the intensional interchangeability between 'having' an emotion and 'feeling' an emotion), and I present biochemical evidence which backs up this intuition. Hence, emotion is partly constituted by feelings. I defend my position against a challenge that feelings are no more than the causal effects of emotion. Second (§2.2), I present the so-called 'feeling theories' which hold that feelings are both necessary and sufficient for emotion, and thus emotion can be reduced to feelings. Third (§2.3), I argue that emotion has rational properties not held by feelings, so emotion cannot be fully explained by feelings. Thus, emotion is partly constituted by feelings, but it cannot be reduced to its feeling parts.

In Chapter 3 I argue that emotion is partly perceptual, but that it cannot be reduced to perception. I argue (§3.1) that the intentionality of emotion is partly determined by perception; the intentional objects of emotion are perceptual objects. Hence, emotion is partly perceptual. I defend my position against two challenges; a challenge from overdetermination of the intentionality of emotion; and a challenge from absent objects. I then present (§3.2) a perceptualist argument for the reduction of emotion to perception. Finally, I argue (§3.3) that emotion cannot be reduced to perception because emotion has second-orders and perceptions do not; perception cannot account for the

second-order phenomenon of metaemotion. Thus, emotion is partly perceptual, but it cannot be reduced to its perceptual parts.

Conclusion to Part I: On the basis of my arguments in the first three chapters I claim that emotion has cognitive, feeling, and perceptual parts to which it cannot be reduced. Thus emotion meets the first necessary condition for ontological emergence. I also explain the reasons why I characterise emotion as a ‘faculty’, rather than merely as a response to objects and events.

Part II Summary:

In Chapter 4 I argue that emotion has a causal effect on cognition both at the macro-level of the emotional faculty, and at the level of the individual emotion. At the macro-level of the emotional faculty, I argue (§4.1) that emotion has a causal effect on decision making, (§4.2) that emotion is a causal factor in cognitive bias, and (§4.3) that emotion is a causal factor in self-deception. At the level of the individual emotion I argue that an emotion can be a rationalising reason for action. As rationalising reasons can be causes, emotion can cause action.

In Chapter 5 I argue that emotion has a causal effect on how one feels both at the macro-level of the emotional faculty and at the level of the individual emotion. At the macro-level, I argue (§5.1) that emotion is a causal factor in the character of one’s life in terms of its happiness or unhappiness. At the level of the individual emotion, I argue

(§5.2) that a so-called prohibited emotion can be a causal factor in painful self-chastisement.

In Chapter 6 I argue that emotion has a causal effect on perception both at the macro-level of the emotional faculty and at the level of individual emotion. At the macro-level I argue (§6.1) emotion has a causal effect on perceptual selectivity. At the level of the individual emotion I argue (§6.2) that an emotion can have a causal effect on higher-order perception.

Thesis Conclusion: I conclude that emotion meets the necessary and sufficient conditions for ontological emergence. Emotion is complex faculty in which thoughts, feelings and perceptions blend together; emotion has cognitive, feeling, and perceptual parts to which it cannot be reduced. Emotion also has a downward causal effect on its cognitive, feeling, and perceptual parts. As downward causation is the *sine qua non* of ontological emergence, emotion is ontologically emergent. Being ontologically emergent, emotion is different in kind from the faculties on which it supervenes.

Emotion is an ontologically emergent *sui generis* faculty.

Part I

Emotion has cognitive, feeling, and perceptual mereological parts to which it cannot be reduced.

Chapter 1: Emotion's Cognitive Parts

In this chapter I will argue that emotion is partly cognitive, but that emotion cannot be reduced to cognition. I argue (§1.1) that both the type of an emotion, and its intensity, are determined by cognition. As such, therefore, emotion is partly cognitive. I discuss (§1.2) a cognitivist argument which maintains that emotion can be fully explained by, and therefore reduced to, cognition. I argue (§1.3) that emotion has at least one property that cognition does not have; paradigmatically emotions are valenced while cognitions are not. Thus emotion cannot be reduced to cognition. Emotion is partly cognitive, but it cannot be reduced to its cognitive parts.

§1.1: Emotion is Partly Cognitive

In this section I will argue (§1.1.1) that emotion is partly cognitive; specifically, the type and intensity of an emotion are determined, in part, by cognition. I defend my view against four potential challenges, according to which (§1.1.2) emotions are higher-order perceptions, (§1.1.3) emotions are passive happenings, (§1.1.4) that my view cannot account for recalcitrant emotions, and (§1.1.5) that the relation between emotion and cognition is contingent rather than necessary.

§1.1.1: Emotion is Partly Cognitive

Consider the following situation. Three individuals stand in exactly the same spot at the edge of a precipice. In this imagined scenario all external circumstances, (weather, wind-speed etc.) are held constant and the individuals have roughly similar visual and

auditory acuity. Thus the conditions are such that the three individuals have more or less the same perceptual stimuli available to them.

In this imagined scenario all three individuals feel emotion. The first subject (S1) feels fear, the second subject (S2) feels exhilarated, and the third subject (S3) feels terrified. Thus, in this scenario we can say that S1 and S2 have different types of emotion, and that S1 and S3 have the same emotion-type (fear) but their emotions differ in their intensity. In my view any plausible theory of emotion ought to be able to provide an explanation both for the individual emotions experienced, as well as any differences between them in terms of type or intensity.

Taking first the difference in emotion-type between S1 and S2. If the same intentional object (the precipice) instils fear in S1, and exhilaration in S2, then the differences in their emotional states is plausibly due to differences between the individuals. After all, the external factors are held constant for both, and they have roughly similar perceptual abilities, so if S1 and S2 experience different emotions then we cannot easily appeal to external factors to explain that difference. On my view the difference in emotion-type is best explained by appeal to subjective psychological differences between S1 and S2. If I am correct then emotion is partly determined by cognition.

I should stress at this point that when I claim emotion is partly cognitive, I do not limit the cognitive part of emotion to beliefs and judgments. When cognitive differences exist between two individuals it is possible that there is also a disparity in their beliefs and judgments. But it is also possible that there is some disparity in their experiential histories, their memories, their ways of thinking and of reasoning, their priorities, and

their goals etc. Memories, thoughts, goals etc. fall under the broad umbrella of cognition. According to my view, therefore, a claim that emotion is partly determined by subjective psychological factors amounts to the claim that emotion is partly determined by cognition.

Returning to the example: If one wishes to explain why S2 feels exhilarated while S1 feels afraid, or vice versa, one will intuitively look for explanatory reasons; which is to say that one will look to psychological differences to explain the difference in their emotion-types. And if, for example, one were to find that S1 doesn't like heights and that S2 is an avid base-jumper, one would reasonably cite these differences in one's explanation for the difference in their emotion-type. It is plausible, therefore, that the difference in emotion-type between S1 and S2 supervenes on the kinds of psychological differences between S1 and S2 that I've described; S1 feels fear because she doesn't like heights, while S2 feels exhilarated because she's an avid base-jumper. If I'm correct then it is plausible that the type of emotion a person feels in a given set of circumstances is partly determined by subjective psychological factors. I have said that this claim amounts to the claim that emotion is partly determined by cognition. Thus emotion is partly cognitive.

Now consider the difference in emotional intensity between the fear of S1 and the terror of S3. We can feel certain emotion-types with varying degrees of intensity. Fear is one such. At the lower end of the intensity scale fear may be experienced as something like trepidation, while a fear experienced as terror lies at the higher-intensity end of the spectrum. Accordingly, S1 and S3 have the same emotion-type but the intensity of emotion differs between the two. When we try to explain why S3's fear is so much

more intense than that of S1, we intuitively look to subjective psychological factors. We might, for instance, wonder if S3 is generally more cautious, and less adventurous, than S1. We might wonder if S3 has some traumatic experience involving heights in her past, which S1 doesn't have, and which might account for why S3 is terrified while S1 is merely afraid. Regardless of the details, it is not implausible to consider a psychological difference to be a reasonable explanation for the difference in emotion-intensity between the two. It is plausible that the difference in emotion-intensity between S1 and S3 is determined by subjective psychological differences between S1 and S3. If this is correct then it is plausible that emotion is partly determined by subjective psychological factors. I have said that this claim amounts to the claim that emotion is partly determined by cognition. Thus emotion is partly cognitive.

§1.1.2: Challenge from Perceptualism about Emotion

A challenge to my claim that emotion is partly cognitive might be offered from a perceptualist view of emotion⁸. A perceptualist account of emotion might hold that the difference in emotion-type between S1 and S2 can be explained by differences in their higher-order perceptions. On this view S1 (higher-order) perceives the precipice as dangerous and her feeling of fear supervenes on her perception. S2, on the other hand, (higher-order) perceives the precipice as challenging and her feeling of exhilaration supervenes on that perception. As S1 and S2 have differing higher-order perceptions, they have differing emotions.

⁸ For examples of this view see: de Sousa (1987), Roberts (1988), Prinz (2004, 2006), Döring (2008).

Similarly, the difference in emotion-intensity between S1 and S3 might be explained by a perceptualist about emotion as a difference in higher-order perceptions. For instance, the perceptualist might claim that S3 (higher-order) perceives the precipice as lethal rather than merely as dangerous. On this perceptualist view the difference in higher order perception between S1 (who perceives the precipice as dangerous) and S3 (who perceives the precipice as lethal) might be said to explain the difference in their emotion-intensity.

On a perceptualist view, therefore, the difference in emotion-type between S1 and S2, as well as the difference in emotion-intensity between S1 and S3, can be explained by appeal to differences in the higher-order perceptions of the individuals. If this position is correct then a perceptualist might claim that one can explain emotion without appeal to cognition.

I do not wish to discount the role of perception in emotion, indeed I will argue in Chapter 3 that emotion is partly perceptual. It certainly seems plausible that one person can perceive a precipice as dangerous while another perceives it as a challenge, and a third perceives it as lethal. So I do not, in fact, disagree with this kind of explanation in as far as it goes.

My objection is that the explanation is incomplete. In my view we also want to know what it is that accounts for the differences in higher-order perceptions upon which the difference in emotion supervenes. Which is to say that we want to know *why* S1 perceives the precipice as dangerous, for instance, when S2 perceives it as challenging, and vice versa; we want the explanatory reasons that underlie the differences in higher-

order perception between S1 and S2. Similarly, we want to know *why* S3 perceives the precipice as treacherous when S1 perceives it merely as dangerous, and vice versa.

On my view the difference in higher-order perceptions between S1, S2, and S3, supervenes on a difference in subjective psychological factors between S1, S2, and S3; such as, for instance, S1's not liking heights, S2's being an avid base-jumper, and S3's previous traumatic experience involving heights. If my view is correct then each individual's emotion type or intensity can supervene on their higher-order perceptions, but those higher-order perceptions in turn supervene on cognitive factors. As supervenience is transitive, this means that emotion's type and intensity supervene on cognitive factors. If that's true, then emotion supervenes, at least in part, on cognition. In other words, emotion is partly cognitive.

§1.1.3 Challenge from The Passivity of Emotion

A further challenge may be raised at this point. My account seems to assume that emotion is not passive, it assumes that emotion isn't something that merely happens. There is a difference between the things which we can be said to do, and the things that can be said to happen to us. Making supper is something I do; being soaked by a sudden downpour is something that happens me. The former is agentive, the latter is not. My view that emotion partly supervenes on cognition may be challenged by the view that emotion is passive; that emotions are happenings rather than doings. Peters and Mace (1962) make this argument. They argue that we are the passive receivers of the emotions that we feel; they are "mists in our mental windscreens rather than

straightforward judgments” (1962, p.119). The authors point to emotions like fear, jealousy, and anger as emotions with which we can be ‘overcome’ prereflectively. On their view when one is prereflectively overcome by emotion, it is the functioning of one’s autonomic nervous system which determines the emotion, and not the workings of cognition as I claim. If emotion is passive, if it is a happening rather than a doing, then my view that emotion is partly cognitive is undermined.

I find the challenge from the passivity of emotion to be problematic for two reasons. The first is the assumption, on which the challenge is based, that pre-reflectivity implies passivity. The second is that the normativity of emotion is inconsistent with the notion that emotion is passive.

Taking the pre-reflectivity issue first: Emotional responses can be prereflective, they can occur without our thinking about them. It might be thought that the rapidity of an emotional response constitutes evidence that emotion is something that happens to us – the functioning of our autonomic nervous system – rather than something agentive. But there are many things that I can be said to do which I do not think about before doing them. For instance, when I reach for my mug of coffee my hand grasps the handle without my having to think about it before doing it. When I touch-type I do so without thinking about the placement of the letters on the keyboard or about which fingers I need to move in which order etc. Neither grasping the handle of my mug, nor typing this sentence, can be said to be something that happens to me; they are both things that I do. And yet both are done pre-reflectively. I do not see, therefore, why the pre-reflective nature of emotion should constitute evidence that emotion is a happening rather than a doing. Emotions are responses to objects, events and imaginings etc. Responses can be

pre-reflective and nevertheless involve cognition. For instance, catching something as it falls off a table or a ledge. This response involves complex calculations of speed and distance. And yet the response (catching the falling item) is also pre-reflective; in fact consciously thinking about it would probably reduce the chances of my making the catch. Pre-reflectivity does not imply passivity. The notion of a response as pre-reflective is consistent with the notion of a response as agential. Thus, the fact that one's emotional response can be pre-reflective does not imply that emotion is passive, and the challenge from the passivity of emotion is undermined.

But perhaps more problematic for the passivity challenge is the fact that emotions are subject to normative constraint; they can be assessed as appropriate or inappropriate. And the notion that emotion is subject to normative constraint contradicts the notion that emotion is passive. Normative constraint applies to the things that we do, and not to the things that happen to us. Consider something that really is passive, like the knee-jerk reflex. When the patellar tendon is struck, the knee jerks. This is a straightforward, non-agential, physical reflex. The idea that a knee-jerk reflex might be normatively constrained is incoherent. The knee-jerk reflex is entirely passive; it is not open to agential control, nor is it open to normative constraint. The notion of normative constraint is inconsistent with the notion of passivity. Thus, if emotions were passive, in the way that the knee-jerk reflex is, their normativity would be incoherent. We can, and do take responsibility for our emotions. Therefore the notion that emotion is passive is false, and the challenge from the passivity of emotion fails.

§1.1.4: Challenge from Recalcitrant Emotion

A further challenge to my account of emotion as partly cognitive might be raised from the existence of recalcitrant emotions. Recalcitrant emotions are emotions that are thought to be at odds with (or contrary to) one's beliefs or judgments. For instance, one might feel terrified when sitting on an airplane despite one's belief that flying is a relatively safe way to travel; or one might continue to be plagued with jealousy despite one's judgment that one's partner is faithful.

Recalcitrant emotion is problematic for my account if it is thought of as analogous to perceptual illusion. For instance, one will see a straight stick as bent in water, despite one's belief that the stick is straight. It is thought that perceptual illusions demonstrate that perception can be encapsulated from cognitions such as belief and judgment⁹. On this view the disparity between my belief that the stick is straight and my perception of the stick as bent can be explained by the idea that what I see can be encapsulated from, and so can run contrary to, what I believe to be the case.

In instances of recalcitrant emotion it seems that what one feels similarly runs contrary to what one believes to be the case. So it might be argued that experiences of recalcitrant emotion are analogous to experiences of perceptual illusion. If that's the case then recalcitrant emotion might similarly be explained by appeal to cognitive encapsulation. But if emotion can be encapsulated from beliefs and judgments in this way then my claim that emotion is partly cognitive comes under serious threat.

⁹ See Fodor (1983).

I believe the challenge to be mistaken for two reasons. First, there are important differences between recalcitrant emotion and perceptual illusion that belie the analogy between the two. Second, the challenge presents an overly restrictive view of the type of cognition involved in emotion, it mistakenly restricts cognition solely to beliefs and judgments.

Taking the disanalogy between recalcitrant emotion and perceptual illusion first. There are at least two important differences between recalcitrant emotion and perceptual illusion. The first is a difference in rationality, and the second is a difference in persistence. Perceptual illusions are arational. A person who persists in seeing a straight stick as bent in water, despite believing that the stick is in fact straight, is not typically thought, as a result, to be either rational or irrational. This is because susceptibility to perceptual illusion is not a question of rationality but a question of perceptual architecture.

Recalcitrant emotion, on the other hand, is typically thought of as irrational. Indeed, phobias are also colloquially referred to as ‘irrational’ fears, and a fairly standard accusation levelled at someone who, for instance, continues to feel jealous when there’s no evidence of infidelity is that they’re ‘being irrational’. Recalcitrant emotion can be deemed irrational because its persistence is not a question of perceptual architecture. Recalcitrant emotions “involve *rational* conflict or tension” (Brady 2009, p.413; original emphasis), hence the vulnerability of such emotion to rational criticism and charges of irrationality.

Recalcitrant emotion's openness to rational criticism points to a second important difference between it and perceptual illusion, the difference of persistence. Recalcitrant emotions are open to change in a way that perceptual illusions typically are not. No matter how many hours a person might devote to understanding perceptual illusions, they nevertheless persist; one will typically continue to see a straight stick as bent in water no matter how much one thinks, and talks, about it. On the other hand, the same hours devoted to understanding the psychological and emotional issues underpinning one's recalcitrant emotions can lead to a change in those emotions. While, admittedly, it is very difficult to change recalcitrant emotion, it is nevertheless possible to do so in a way that is not typically the case for perceptual illusion.

Differences in rationality and persistence between recalcitrant emotion and perceptual illusion mean that the two are not analogous, as the challenge to my position would require. Failure of the analogy, however, is not sufficient to defeat the challenge. If, as I maintain, emotion is partly cognitive then I must account for the seemingly conflicting beliefs held, for instance, by a person who persists in feeling jealous, despite her belief that her partner is faithful. It seems that my account requires that this person holds both the belief that her partner is unfaithful (as a constituent part of her jealousy) *and* the belief that her partner is faithful. A challenger to my position might suggest that this seeming conflict is resolved if belief is not a constituent part of jealousy. If belief is not a constituent part of emotion then a person could, at one and the same time, both feel jealous and believe that her partner is faithful. Recalcitrant emotion, therefore, seems to provide evidence that emotion does not have cognitive parts, even if it is not analogous to perceptual illusion.

But the explanation provided (that cognition is not a constituent part of emotion) in the challenge above cannot be correct because it fails to explain the attribution of irrationality to recalcitrant emotion. Rational conflict involves a divergence between one's own opposing thoughts, reasons, beliefs, or judgments; in short a clash between one's opposing cognitions. If, as the challenge suggests, jealousy has no cognitive parts then there would be no rational conflict in an instance in which one's emotion diverges from one's beliefs. The problem with the challenge from recalcitrant emotion, in my view, is that the view espoused stems from too narrow a specification of the types of cognition upon which emotion can be said to supervene. In the challenge the jealous partner is credited with two straightforward, directly conflicting, beliefs; the belief that her partner is unfaithful and the belief that her partner is faithful. But the cognitive underpinnings of recalcitrant jealousy can be far more complicated than this simplistic picture allows.

An alternative, and perhaps more plausible, account can be found if one were to consider something like Script Theory. Script Theory, originating from the work of Silvan Tomkins¹⁰, suggests that past recurrent or habitual emotional experiences play an important role in our occurrent emotional responses. The theory maintains that a person can respond to occurrent events *as if* they were the events of the past. So, for instance, it may be that the jealous partner has previously been cheated on, perhaps more than once. These kinds of painful experiences can leave indelible psychological marks. For example, one aspect of this can be the development of an unconscious 'script' according to which 'partners cheat'. This script can be triggered by events sufficiently similar to the events that resulted in the script first being 'learned'. So, for the person with a

¹⁰ Script Theory was originally presented by Tomkins at the 1954 International Congress of Psychology in Montreal. See also Tomkins (1995) pp.312-388.

‘partners cheat’ script, the smallest gesture or omission on the part of a current partner can result in an ‘*as if*’ response – i.e. she responds *as if* the current situation is a replay of the past in which her previous partner had been unfaithful. The fact that her recalcitrant jealousy involves a rational conflict or tension is explained on this view. The jealous partner can be fully aware that her jealousy is irrational, she may in fact agree with any accusation of irrationality levelled towards her, but nevertheless her jealousy will persist (at least until she deals with the underlying emotional trauma of earlier infidelities). The rational conflict that results can be explained if her jealousy is determined, not by a belief that her current partner is unfaithful (a belief she holds to be false), but by a script which is itself determined by events from the past.

In my view, rather than challenging my thesis, recalcitrant emotion strengthens the argument for cognitive parts of emotion. Script Theory seems to me to be a plausible thesis. And if the theory is correct then it is a *script* which is in conflict with belief when recalcitrant emotion arises. Such scripts are essentially cognitive. On this view, recalcitrant emotions are partly cognitive, and the challenge fails.

§1.1.5: Challenge from Contingency

A final challenge to my position might suggest that the relationship between cognition and emotion may be contingent rather than necessary. I have said that the type and intensity of emotion are partly determined by subjective psychological factors. A challenger might hold that my position is too strong, entailing as it does a necessary relation between emotion and cognition. On a challenger’s view subjective

psychological factors may simply *cause* emotion, which would mean that the relation between cognition and emotion is contingent rather than necessary.

Jesse Prinz (2004) makes this sort of challenge when he characterises cognitions as playing a purely causal role in emotion. Prinz maintains that the relationship between cognition and emotion is such that cognitions are “*prior conditions*, not *constituent parts*” of emotion (2004, p.98, original emphasis)¹¹. He elaborates using the example of jealousy. He claims that when romantic jealousy occurs, there is first a judgment to the effect that one’s lover has been unfaithful, and this judgment causes the emotion of jealousy. On his view, the judgment is causally antecedent to the emotion and not a constituent part of it. He defends his view on the basis that different judgments can result in the same emotion. “Jealousy can be triggered by the judgment that one’s lover has been unfaithful, but it can also be triggered by other judgments, such as the judgment that one’s lover has been staying unusually late at work...There is, therefore, no pressure to say that any particular judgment comprises a constituent part of any higher cognitive emotion” (Prinz 2004, p.101). According to Prinz, emotion has no cognitive parts and the relationship between cognition and emotion is merely contingent. If he is correct then my claim that emotion is partly cognitive is challenged.

With respect, Prinz’s claim that no specific judgment is required for emotion does not entitle him to conclude that no judgment whatsoever is required for emotion. Holding that judgment is required is consistent with the notion that no *specific* judgment is required. But more importantly, even if one could conclude that the relation between *judgment* and emotion is contingent, one could not further conclude from this that the

¹¹ I will discuss Prinz’s thesis in greater depth in Chapter 3.

relation between *cognition* and emotion is contingent. To do so is to assume that all cognition can be reduced to judgment, which seems implausible.

I believe that there are good reasons to hold that the type of emotion a person experiences, and the intensity with which they experience that emotion, are both determined, at least in part, by cognition. A person who dislikes heights is more likely to feel fear at the edge of a precipice, than is an avid base-jumper. Similarly, a person who is insecure or lacking self-esteem is more likely to feel jealousy, or to feel jealousy more intensely, than someone who is both secure and confident. More importantly, a change in a person's psychology can result in a change in their emotional responses. The plasticity of emotion is such that our emotional responses can be improved, even in adulthood¹². A so-called thin-skinned individual, one who is easily offended, can come to realise that 'not everything others do or say is always about me', and consequently their threshold for offence can be increased. Having a higher threshold for offence, the person will become angry less easily or less frequently. Similarly, a person lacking in self-esteem can come to realise their own value, and consequently their propensity to experience security-related emotions like jealousy can abate.

It seems that when we change as individuals (i.e. when we change our psychology) our emotional responses also change. This constitutes good evidence that emotion supervenes on subjective psychological factors. Supervenience is such that one cannot change the lower-order property without some change in the higher-order property. If a change in psychology translates into a change in emotional response then the relationship between the two is plausibly one of supervenience. Supervenience is a

¹² See Kotsou, Nelis, Grégoire, & Mikolajczak (2011)

necessary, rather than a contingent, relationship. On this basis it is plausible that the relation between emotion and cognition is necessary rather than contingent. Hence it is plausible that emotion is partly cognitive.

On my view emotion is partly cognitive. In the next section I will consider a reductionist theory which claims that emotion is wholly cognitive. According to this view emotion just is a form of cognition.

§1.2: An Argument for the Reduction of Emotion to Cognition

In this section I present a cognitive view of emotion. Cognitivists about emotion¹³ hold that emotion can be fully explained by cognition. They also largely agree (with the exception of Nussbaum 2001) that perception and feelings have a causal relationship with emotion; respectively as antecedent and consequent. They argue that perceptions can cause emotions but perception is not a constitutive part of emotion, and that emotions cause feelings but feelings are not a constitutive part of emotion. I present (§1.2.1) Martha Nussbaum's (2001) argument for the reduction of emotion to cognition from her publication *Upheavals of Thought: the intelligence of emotions*. Nussbaum describes her position as similar to the Stoical view that "emotions are appraisals or value judgments, which ascribe to things and persons outside the person's own control great importance for that person's own flourishing" (Nussbaum 2001, p.4). On her view emotions are cognitive evaluations with no necessary somatic correlates; emotions are essentially, and exclusively, cognitive. I consider (§1.2.2) three challenges to Nussbaum

¹³ For examples of Cognitivism about emotion see Gordon 1987; Marks 1982; Nash 1989; Neu 1987; Nussbaum 2001; Solomon 2004

as well as her responses to these challenges. The first challenge suggests that Nussbaum's explanation of emotion is also consistent with judgments as causal rather than constituent parts of emotion. The second challenge comes from the fact that emotion can dissipate over time even when judgments don't change, the paradigm example being that of grief. The third challenge is that Nussbaum's view denies any role for feelings in emotion.

§1.2.1: Nussbaum's Cognitive Thesis

Martha Nussbaum (2001) argues that the directedness or intentionality of emotion is cognitive. The aboutness of emotion she says, "comes from my active ways of seeing and interpreting: it is not like being given a snapshot of the object, but requires looking at the object, so to speak, through one's own window" (Nussbaum 2001, p.27). She maintains that the identity of an emotion – what distinguishes fear from hope, love from grief etc. – "is not so much the identity of the object, which might not change, but the way in which the object is seen" (ibid, p.27). The object of one person's loathing might be the object of another's love, the object of one person's fear might be the object of another's excitement.

Nussbaum argues that seeing the object of one's emotion as contemptible or lovable etc. might be cashed out in terms of believing that object to be contemptible or lovable etc. She writes; "it is not always easy, or even desirable, to distinguish an instance of *seeing X as Y*,...from having a belief that X is Y" (ibid, p.27, original emphasis). In order to have fear, she argues, one must believe that something bad is impending; in order to feel

anger, one must believe some non-accidental injustice has been perpetrated against me or someone important to me. “If I should discover that not A but B had done the damage, or that it was not done willingly, or that it was not serious, we could expect my anger to modify itself accordingly, or go away” (ibid, p.28). On Nussbaum’s view, severing belief from emotion severs the emotion. On this basis, she argues, belief is necessary for emotion.

Nussbaum considers whether the necessity for belief in emotion means that relevant beliefs are a constituent part of emotion. “A claim of necessity,” she writes, “is compatible with, but does not entail, a claim of constituent parthood, since the beliefs might be necessary as external causes of something that in its own nature does not contain belief” (2001, p.34). But she rules out the notion that beliefs might merely be causes of emotion. They must be constitutive, she argues, because they are an essential part of an emotion’s identity. She maintains that if beliefs are an essential part of what differentiates one emotion from another, then beliefs are a constitutive part of emotion.

Neither a characteristic feeling nor a characteristic mode of behaviour would appear sufficient to define emotions such as envy, hope, grief, pity, and jealousy, or to differentiate one of these from the others. In some cases (for example, anger and fear) there are at least *prima facie* candidates for such a defining feeling, although I have argued that the full-fledged emotion requires more than this feeling (and shall later argue that this feeling isn’t always present). In others, such as hope and envy, we can’t even begin to specify such a defining feeling. We seem to be left, then, at least with constituent parthood, with, that is, the thesis that the cognitive elements are part of what an emotion *is*

Nussbaum 2001, p.34.

According to Nussbaum belief is a necessary constituent of emotion, and not just a necessary external cause of it, because it is a constituent part of an emotion’s identity. But this constituent parthood is insufficient to her larger thesis. If, as Nussbaum claims,

emotion can be fully explained by cognition then cognition must be more than just necessary for emotion, cognition must also be sufficient. To conclude her argument, therefore, Nussbaum turns to another form of cognition, judgment.

Nussbaum defines judgment as an assent to an appearance. She explains this as having two phases: “First, it occurs to me or strikes me that such and such is the case. It looks to me that way, I see things that way – but so far I haven’t really accepted it” (2001, p.37). At this stage “I can accept or embrace the way things look, take it into me as the way things *are*; in this case the appearance has become my judgment and the act of acceptance is what judging is” (ibid, p.37). This latter act, she asserts, “seems to be a job that *requires* the discriminating power of cognition” (ibid, p.38, original emphasis). And emotion, she argues, is just such an act of assent to the appearance of how things are. She gives the example of grief. For instance, it can strike me that someone close to me has died without my really accepting it, as in the case of denial. Grief, Nussbaum claims, is the acceptance of it really being the case that someone close to me has died. Grief is the judgment that it really is the case.

Importantly, entailed in this judgment, says Nussbaum, is a necessary property of the object as being important to me. Severing the object’s value or importance ‘for me’, Nussbaum argues, also severs the emotion. Writing of her own mother’s death, she says: “Suppose that I did not love my mother or consider her a person of great importance; suppose I considered her about as important as a branch on a tree next to my house. Then (unless I had invested the tree-branch itself with an unusual degree of value) I would not fear her death, or hope so passionately for her recovery” (Nussbaum 2001, p.29). She writes: “Internal to the grief itself must be the perception of the

beloved object and of her importance” (ibid, p.44). This entirety (the assent to the appearance of how things are and the importance of the object), is not only necessary to emotion, she claims, it is also sufficient.

§1.2.2: Challenges to Nussbaum’s View

Nussbaum anticipates three important objections to her position. The first of these is that her position is consistent with judgments as causal rather than constituent parts of emotion. Her judgments that her mother has died and that her mother was someone that was important to her might be construed as causing her grief. If that’s the case then the most Nussbaum can claim is that such judgments are necessary for emotion but not that they are sufficient for it.

Nussbaum responds to the objection by denying that judgment could be construed as merely causal. Her judgment that her mother has died, she argues, is not an event that temporally precedes her grief. “When I grieve, I do not first of all coolly embrace the proposition, ‘my wonderful mother is dead’, and then set about grieving” (2001, p.45). She makes this claim on the basis that her judgment doesn’t cease once the grief sets in. The full recognition of her mother’s death, she claims, *is* the upheaval of grief. It is a state of affairs one accepts or assents to continuously.

A second complication for Nussbaum’s position stems from the fact that emotions like grief typically diminish over time. If the emotion of grief just is the judgment that her mother (someone who is precious to her) is dead, then how can she account for the

diminution of her grief? “The suggestion,” she writes, “is that the original proposition is retained, and that the waning must therefore be accounted for in some other way” (2001, p.79). If the judgment that her mother is dead persists, but her grief wanes over time, then her grief must be more than just her judgment that her mother is dead. If that’s true then judgment is not sufficient to explain emotion.

Nussbaum recognises that her thesis must account for the diminution of her grief purely by appeal to cognition. She considers the difference between the intensity of her grief at the time of her mother’s death and its intensity eight years later. “The real question then is,” she writes, “is the difference between my calmed state of August 2000 and my grief-stricken state of April 1992 a cognitive difference, or a noncognitive difference?” (2001, p.80). She argues that the difference can be explained by cognition. Her judgment that her mother has died does not change, she says, but that judgment is gradually displaced in the forefront of her mind:

[W]hen the knowledge of her death has been with me for a long time, I reorganize my other beliefs about the present and future to accord with it. I no longer have the belief that I will see my mother at Thanksgiving dinner; I no longer think of the end of a busy day as a time when I can call her up and enjoy a long talk; I no longer think of a trip abroad as an occasion to buy presents for her; I no longer expect to make happy plans to celebrate her birthday. Indeed, the experience of mourning is in great part an experience of repeatedly encountering cognitive frustration and reweaving one’s cognitive fabric in consequence.

Nussbaum 2001, p.80

Her grief changes, argues Nussbaum, as its relationship to her other beliefs and judgments changes. But, she admits, this is not yet an emotional change on her definition. “I have defined emotions by their content, not by their relationship to other parts of our mental content” (Nussbaum 2001, p.81). In that respect the most influential

change, she argues, is the centrality of her mother's salience to her own wellbeing; "propositions having to do with the central role of my mother in my own conception of flourishing will shift into the past tense" (ibid, p.82). It is this change in judgment, she argues, that is a large part of the diminution of grief:

Some things stay constant: my judgments about her intrinsic worth, and about the badness of what happened to her, my judgment that she has figured centrally in my history. We may even say that I do not altogether remove her from my present life, since after all I have hardly ceased to write and think about her. So in one respect, my experience is still an experience of loss. But I put her into a different place in my life, one that is compatible with her being dead, and so not an ongoing active partner in conversation, love and support.

Nussbaum 2001, p.82

Thus for Nussbaum the diminution of her grief in the eight years following her mother's death can be accounted for purely in cognitive terms. Her grief is no longer at the forefront of her mind, and to the extent that her grief is displaced by other beliefs and judgments, so her grief diminishes. If that's true, Nussbaum claims, then the diminution of her emotion over time can be fully explained by cognition and the challenge fails.

But Nussbaum's response seems to me to be unsatisfactory inasmuch as it raises the third and strongest challenge to her position; Nussbaum's account seems to ignore the involvement of feelings in emotion. It seems to me that the aspect of grief that diminishes over time is how keenly grief is *felt*. When Nussbaum relates her experience at the time of her mother's death, she describes periods of agonised weeping, days of crushing fatigue. When she talks about her feelings eight years after her mother's death, she describes a 'calmed state'. On her own admission, there is not just a difference in terms of the judgments she makes, there is a difference in how she feels. Her response to the challenge from the diminution of grief over time does not explain the change in

her hedonic state. Because Nussbaum's account of emotion ignores how emotion feels, the plausibility of her position is undermined. Unless cognition can explain the change in hedonic state, then Nussbaum's thesis results in an underdetermination of emotion.

Nussbaum denies that feelings are a necessary part of emotion. As sentient beings, she says, our conscious experiences necessarily seem to have some feeling or phenomenal aspects. "But we don't have any clear reason to say that these things are part of grief itself" (2001, p.57). Her reason for this, she explains, is that "if we confine ourselves to a particular episode of emotion we have difficulty finding arguments bearing on the question of whether a given feeling or bodily process is or is not a necessary part of its internal conditions of identity" (ibid, p.57). On her view human experiences are embodied, and as such, all conscious experiences will entail phenomenal properties, thus emotion too will have some phenomenology. But Nussbaum holds that phenomenology is not a necessary part of the identity conditions for grief (and *a fortiori* for emotion) and thus it is not a necessary constituent of that grief. She elaborates this view as follows:

There usually will be bodily sensations and changes of many sorts involved in grieving; but if we discovered my blood pressure was quite low during this whole episode, or that my pulse rate never got above sixty, we would not, I think, have the slightest reason to conclude that I was not really grieving. (Quadriplegics lack altogether the usual connection between central blood pressure and heart rate regulatory mechanisms and peripheral effector mechanisms, and yet we have no difficulty thinking that such people really have emotions.) If my hands and feet were cold or warm, sweaty or dry, again this would be of no necessary criterial value, given the great variability of the relevant physiological connections.

Nussbaum 2001, p.57

For Nussbaum emotion has no specific somatic correlates other than those we might expect to experience as necessary to our being sentient embodied entities. She argues

that there are no bodily states or processes that are “constantly correlated with our experiences of emotion, in such a way that we will want to put that particular bodily state in to the definition of a given emotion-type” (2001, p.58). Instead, she argues, the judgment that constitutes an emotion “has many of the kinetic properties that the ‘feeling’ is presumably intended to explain” (ibid, p.60). Bodily states, she claims, “may accompany an emotion of a specific type and they may not - but they are not absolutely necessary for it” (ibid, p.60). Nussbaum argues for this position by pointing out that there is a degree of plasticity in the way different people feel different emotions; for instance, some feel anger as a roiling in the gut, and others feel it as a tension in the shoulders. She claims that we don’t all feel the same emotions in the same way. This means, she claims, that there are no specific feelings that are constantly correlated with emotion; and hence emotion has no necessary somatic correlates.

Pace Nussbaum, her claim that different people feel emotion differently does not entitle her to conclude that feelings are unnecessary to emotion. Furthermore, research suggests that Nussbaum’s claim about emotional plasticity is false. A study by Nummenmaa et al. (2013) shows that there is a statistically significant correlation between various emotion-types and where those emotions are felt in the body. The researchers ran five experiments amongst a total of 701 subjects. Participants were given various emotional stimuli (specifically movies and guided mental imagery using words and stories) and asked to indicate the bodily regions where they felt increased or decreased activation. The researchers found that: “Different emotions were consistently associated with statistically separable bodily sensation maps [BSMs] across experiments” (Nummenmaa et al. 2013, p.646).

In their paper, Nummenmaa et al. anticipated an objection from the fact that body-related expressions are common for describing emotions across all cultures. Many of these expressions are metaphorical (such as having butterflies in one's stomach etc.) and it might be argued from this that the research findings do no more than “reflect a purely conceptual association between semantic knowledge of language-based stereotypes associating emotions with bodily sensations” (2013, p.649). To allay this concern the research was carried out in two regions (Norway and Taiwan) thought to be sufficiently culturally disparate to remove any bias from conceptual association. The researchers conclude that the ‘strong concordance’ between the results from the two regions suggests that “BSMs likely reflect universal sensation patterns triggered by activation of the emotion systems, rather than culturally specific conceptual predictions and associations between emotional semantics and bodily sensation patterns” (Nummenmaa et al. 2013, p.649).

But a counterargument may be made here. The empirical research suggests only that bodily feelings play a role in emotion, this does not necessarily mean that those feelings are constituent parts of emotion. For instance, Joel Marks (1982) argues that emotion causes bodily feelings but denies that those ensuing feelings are part of the emotion that cause them. Thus a cognitive response to Nummenmaa et al.'s research might hold that the somatic aspects of emotion are causal effects and not constituent parts of emotion. Marks' view is that emotion can be reduced to belief-desire sets. He writes:

My main argument for my position is this: we say, 'His fright caused him to shiver', 'He blanched from fear', 'His fear made him tense up'; we also say, 'He acted out of fear', 'He ran away because he was afraid', etc. The strong suggestion here is that the locus of the emotion is (causally) prior to the various manifestations of the emotion (and among these are acts). Thus, the manifestations are not the emotion (plus action), but (along with action) effects of the emotion. But we have already seen (i.e., *ex hypothesi*) that these manifestations can be construed as effects of (some set of) the

emoter's beliefs and/or desires. Therefore, the emotion is just some set of the emoter's beliefs and/or desires.

Marks 1982, pp.229-30

Marks suggests that if the locus or root of an emotion is in the cognitions prior to bodily feelings then bodily feelings just are the causal effects of emotion. Emotion itself, he maintains, can be fully explained by cognition while still accounting for the role of feelings.

On Marks' view, if I'm afraid of a rabid dog then the root of my fear, that which inspired it in the first place, is my belief that the dog is dangerous and my desire to save myself. According to Marks, this belief-desire (BD) set is causally prior to any physiological feeling that my fear results in. He argues that this BD set is necessary for my emotion. If I don't believe the dog constitutes a danger, if he's securely locked away for example, I would have no BD set regarding the dog and hence would have no fear. This necessary connection, he argues, cannot be explained unless emotion is essentially cognitive.

Marks claims that the feelings associated with emotions arise only as effects. He concludes from this that emotion can be reduced to cognition alone. In the next section I will argue that this cognitivist position is flawed. Emotion has at least one property that cognition does not have; emotions are paradigmatically valenced and cognitions are not, thus cognition alone cannot account for at least one property of emotion. If that's the case then emotion cannot be reduced to cognition.

§1.3: A Property of Emotion Not Held by Cognition

I argued (§1.1) that emotion is partly cognitive. I then presented (§1.2) the reductionist position that emotion can be fully explained by cognition. In this section I argue that emotion cannot be reduced to cognition because emotion has at least one property not held by cognition. I argue (§1.3.1) that emotions are paradigmatically valenced and cognitions are not. If valence cannot be accounted for by cognition then emotion cannot be reduced to cognition alone. I anticipate a challenge (§1.3.2) to my argument on the basis that the valence of an emotion may not be intrinsic to it but rather may merely be a causal effect. I respond that valence is a property of emotion, and as such is intrinsic to it. I consider the potential counterargument (§1.3.3) that unconscious emotions are not valenced and therefore valence is not necessary for emotion. I respond that unconscious states are special cases and not counterexamples; all unconscious states lack phenomenology by definition. In such cases the absence of evidence does not constitute evidence of absence; the absence of valence in instances of unconscious emotions does not constitute evidence for the absence of valence in the case of conscious emotions. I conclude (§1.3.4) that conscious emotions are paradigmatically valenced. As cognition is not valenced, cognition cannot explain the valence of emotion. Hence, emotion cannot be reduced to cognition by virtue of having a property not held by cognition.

§1.3.1: Cognition cannot account for Emotional Valence.

Feeling states can have a certain negative or positive hedonic resonance. Feeling hungry (as well as feeling too full), feeling thirsty, feeling pain – these feeling states have in common that they are unpleasant; roughly, they ‘feel bad’. On the other hand, feeling

comfortable, feeling satiated, feeling cosy – these feeling states have in common that they are pleasant; roughly, they ‘feel good’. Emotions too have negative or positive hedonic resonance. Grief, jealousy, shame, and guilt are emotions that have in common the fact that they have a negative hedonic charge. While joy, love, happiness and awe are emotions that have in common the fact that they have a positive hedonic charge.

The term ‘valence’ is used to refer to the hedonic charge or resonance of an emotion. A valenced state is one that is experienced phenomenologically as ‘positive’ or ‘negative’; roughly speaking, as ‘feeling good’ or ‘feeling bad’¹⁴. Emotions are paradigmatically valenced states. Indeed, valence is said to be among “the most fundamental properties of affective experience” (Kuppens et. al 2013, p.917). It seems that emotions typically have a positive (agreeable) or negative (aversive) character or ‘feel’ about them; consciously felt emotion has a valence that can be characterised predominantly as either positive or negative¹⁵.

If emotions are paradigmatically valenced states then cognition cannot fully explain emotion because cognition does not have the property of being valenced. When I believe that grass is green, that snow is white and that the sun will rise tomorrow, none of these beliefs feels particularly attractive or aversive, none feels positively or negatively charged. In fact, the notion that cognitions might have phenomenal properties at all is philosophically controversial. David Pitt (2004) writes: “It is a traditional assumption in analytic philosophy of mind that intentional states, such as

¹⁴ The notions of ‘positive’ and ‘negative’ or ‘good’ and ‘bad’ are used in different ways in emotion literature – e.g. the terms can be used in the normative or axiological sense. I use the terms ‘positive’ and ‘negative’ exclusively in the phenomenological sense here.

¹⁵ I do not wish to deny that one can experience mixed emotions - affective episodes in which some positively valenced and some negatively valenced emotions are elicited - in these cases it is possible that the overall valence of the experience may also feel mixed.

believing, doubting or wondering that *p*, have no intrinsic phenomenal properties” (Pitt 2004, p.1).

The notion that conscious thoughts might have phenomenal properties remains hotly debated. Tim Bayne and Michelle Montague write:

One of the striking features of the cognitive phenomenology debate is that it exists at all. Why do some theorists (the ‘conservatives’) hold that there is no distinctive phenomenal character to thought, whilst others (the ‘liberals’) hold that there is? After all, it is widely held that one is—or at least can be—aware of the phenomenal character of a given mental state just in virtue of being in that mental state. In light of this, explaining why there is such deep disagreement about the nature of conscious thought poses something of a challenge. (Compare the cognitive phenomenology debate to debates about the sensory phenomenological character of perception, which are not typically about whether sensory phenomenology exists but about how best to explain it.)

Bayne and Montague 2011 p.4

The notion of cognitive phenomenology continues to be subject to debate and the very fact of this controversy demonstrates that cognitions are not valenced states. If thoughts were valenced, cognition would have clear phenomenal properties and the debate would be different. The fact that we question whether thoughts have any phenomenal properties at all shows, at the very least, that they are not valenced states. Thoughts are not valenced and even the most controversially liberal view, as espoused by Pitt¹⁶, would not suggest otherwise. Valence is something that is felt in the body, it is

¹⁶ Pitt’s (2004) view is that there is something that it’s like to think a conscious thought and that “what it is like to think the conscious thought that *p* is distinct from what it is like to think any other conscious thought, and that the phenomenology of a conscious thought is constitutive of its content” (Pitt 2004, p.1). He argues for his position on the basis that a mental state, if it is conscious, has phenomenal properties. Conscious thoughts are conscious mental states, therefore, conscious thoughts have phenomenal properties. He defends his argument against any claims of triviality (if ‘conscious’ means or entails ‘phenomenal’ then the argument that conscious thoughts have phenomenology is trivial) by saying that he finds this to be no objection at all. Even if his claim is true by definition or trivially true, he says, it is still true.

necessarily somatic. If emotions are valenced states, and if valence is necessarily somatic then emotions necessarily have somatic parts.

§1.3.2: Challenge from Contingency

A challenge may be raised here. I claim that emotions are valenced and that valence is necessarily felt therefore emotions necessarily have somatic parts. However, the objection might be made that a claim that valence is necessarily felt does not allow one to conclude that valence is a property of emotion. The relation between emotion and valence may be contingent rather than necessary. In §1.2 I reported Nussbaum's claim that there are no bodily states or processes that are 'constantly correlated' with our experiences of emotion. I countered that Nussbaum cannot conclude from this that emotion has no somatic parts whatsoever. I provided evidence from research that suggests emotion is felt in the body. However, neither my counterargument, nor the research, provides evidence either way as to whether the somatic correlates of emotion are necessary constituent parts of emotion. The evidence is equally consistent with the claim that the somatic aspects of emotion are merely the causal effects of the cognitions that constitute emotion, as Joel Marks (1982) argues. Even if emotion involves bodily feelings, those feelings may not necessarily be a constitutive part of emotion. On this view, valence might be the effect of an emotion rather than part of it. If that's true then emotion might be fully explained by cognition and my argument that emotion cannot be reduced to cognition fails.

The challenge is mistaken. The valence of an emotion is not separable from the emotion

itself. Consider the valence of an emotion like grief, there is no added extra component on top of grief, by virtue of which grief feels bad. One would not say, for instance, that ‘grief + negative valence = what makes grief feel bad’. Grief feels bad in itself; ‘bad’ is just how grief feels. This is akin to the point made by Kenny when he says that pleasure is not a ‘separate sensation’ that can be added to make a pleasurable activity pleasurable (Kenny 1963, chapter 6).

Additionally, the differing valences of different emotions cannot be said to be analogous to inverted spectrum cases. In inverted spectrum cases two individuals might, for instance, share the same colour vocabulary and discriminations but the colour one person sees may nevertheless be different from the colour the other person sees¹⁷. But when two individuals share the same emotional vocabulary and discriminations their emotional experiences cannot be inverted. This is because sharing the same vocabulary and discriminations with regard to emotion necessarily involves sharing the same vocabulary and discriminations with regard to emotional valence. For instance, it cannot be the case that one person feels joy and calls it grief, while the other feels grief and calls it joy. The valence of grief is negative, the valence of joy is positive. This phenomenological difference is reflected in the vocabulary used to describe these emotions, as well as in the way we discriminate one from the other. As emotion is paradigmatically valenced, then emotion has at least one property that is not held by cognition. Thus emotion cannot be reduced to cognition.

¹⁷ For more on inverted spectrum cases see Byrne (2015).

§1.3.3: Challenge from Unconscious Emotion

The counterargument might be raised from the possibility of unconscious emotion. Martha Nussbaum (2001) makes this argument when she holds that the possibility that we can have emotions that we don't feel (unconscious emotions), is evidence that feelings are not a constitutive part of emotion. Unconscious emotion is not valenced. It seems plausible that I might be afraid of one person or in love with another without my being aware of my emotional state. And if I am unaware that I have an emotion, I am also unaware of the valence of that emotion. Nevertheless I can still be said to have that emotion. According to the challenge, unconscious emotion is not valenced, therefore valence is not a necessary part of emotion. Thus, my claim that emotion cannot be reduced to cognition is undermined.

The notion of unconscious emotion is controversial but I will not deny its possibility here. However, I do not need to deny the possibility of unconscious emotion to respond to the challenge. This is because all unconscious states lack phenomenology by definition. This is true irrespective of whether the state in question is perceptual, cognitive, conative or affective. I can arrive home at the end of a long drive with little or no memory of the journey; I can hold beliefs I didn't realise I had until they are called into question; I can remain unaware of my hunger until I stop working and realise that I haven't eaten anything since breakfast.

Unconscious states lack phenomenology by definition. On my view this means that unconscious states are special cases and not counterexamples. Consider unconscious perceptual states, such as arriving home after a long journey, and realising that one was entirely unconscious of driving for much of it. The question becomes whether events

like this call into question whether perceptual states necessarily have phenomenal properties. After all, I can assume that my perceptual faculties were operating during the time in which I was driving ‘unconsciously’ so to speak. The fact that I arrived home safely is evidence of this. And yet, the very fact that I was driving ‘unconsciously’ means that I was unaware of my perceptions as having phenomenal properties at the time.

In considering this scenario, it’s useful to call on Ned Block’s (1995) distinction between phenomenal consciousness (P-consciousness) and access consciousness (A-consciousness). What makes a state P-conscious is that there is ‘something that it’s like’ to be in that conscious state (as suggested by Nagel 1974). Block writes that “we have P-conscious states when we see, hear, smell, taste, and have pains. P-conscious properties include the experiential properties of sensations, feelings, and perceptions, but I would also include thoughts, desires and emotions” (Block 1995, p.230); when I drive ‘unconsciously’ my experience can be said to lack P-consciousness.

Block suggests that A-consciousness lacks experiential properties and is involved in the performance of cognitive, perceptual and behaviour-control tasks; when I drive ‘unconsciously’ I might be said to be in an A-conscious state¹⁸. However, that a conceptual distinction might be made between these two types of consciousness does not imply that P-conscious properties are not a necessary part of *conscious* perception.

¹⁸ Block’s uses ‘blind-sight’ as the primary exemplar for his distinction between P-conscious and A-conscious states. Damage to particular parts of the visual cortex can result in blindness in certain areas of the visual field. A blind-sighted person cannot see anything presented to them in their ‘blind spot’ but, when questioned, they have the ability to ‘guess’ the location of the item correctly. Block takes this as an example of the operation of A-consciousness in the absence of P-consciousness. Another of Block’s examples of A-consciousness in the absence of P-consciousness is somewhat closer to my driving example; “suppose you are engaged in intense conversation when suddenly at noon you realize that right outside your window there is – and has been for some time – a deafening pneumatic drill digging up the street. You were aware of the noise all along, but only at noon are you *consciously* aware of it” (Block 1995, p.234, original emphasis).

To suggest otherwise leaves us open to the conceptual possibility of the philosophical zombie¹⁹. Conscious perception necessarily has P-conscious properties; if it lacked P-conscious properties then, by definition, it wouldn't be conscious perception.

Unconscious states have no phenomenal properties and it is therefore a mistake to appeal to them as arbiters of the phenomenal properties of conscious states. Thus, unconscious emotions cannot be appealed to in order to determine the phenomenal properties of emotion. Valence is a phenomenal property of emotion. Unconscious emotion cannot be used to deny that valence is a phenomenal property of emotion. Therefore the counterchallenge fails.

Emotions are paradigmatically valenced. Cognitions are not valenced. The valence of emotion cannot be explained by cognition. Hence emotion cannot be reduced to cognition.

Chapter Conclusion:

I have argued that the type and intensity of one's emotional response to the objects and events of the world are both determined by cognition. Therefore, emotion is partly cognitive. However, cognition cannot account for some of the phenomenal properties of emotion and in particular it cannot account for an emotion's valence. Hence emotion cannot be reduced to cognition alone. Therefore, emotion is partly cognitive, but it cannot be reduced to its cognitive parts.

¹⁹ A philosophical zombie is an entity which is like ourselves in all other respects, but which lacks phenomenal consciousness.

In the next Chapter I will argue that emotion is partly constituted by feelings but that it cannot be reduced to its feeling parts.

Chapter 2: Emotion's Feeling Parts

In this chapter I will argue that emotion is partly constituted by feelings, but that emotion cannot be reduced to its feeling parts. I argue (§2.1) that the phenomenal properties of emotion supervene on bodily feelings, and thus emotion is necessarily partly constituted by bodily feelings. I consider (§2.2) feeling theories which hypothesise that emotion can be fully explained by, and thus reduced to, feelings. I argue (§2.3) that emotion has rational properties not held by bodily feelings, and thus emotion cannot be fully explained by feelings. Hence emotion is partly constituted by feelings, but it cannot be reduced to its feeling parts.

§2.1 The Feeling Part of Emotion

There is something that it's like to be happy and there's something that it's like to be sad. There's something that it's like to be jealous and there's something that it's like to be in love. There's something that it's like to grieve and there's something that it's like to be afraid. This 'what-it's-likeness' refers to the phenomenal qualities of an emotion. The phenomenal properties of emotion can be ineffable; one cannot always easily describe the 'what-it's-likeness' of an emotion in semantic terms²⁰. However, even if one cannot easily describe what it's like to be happy, one can nevertheless say that what it's like feels different in some way from what it's like to feel sad (*mutatis mutandis* for

²⁰ Brian Loar contends that "no direct semantic correlation holds between phenomenal qualities and English expressions" (1990, p.81)

the other emotions mentioned). The difference between the two is a difference in phenomenal content. I argue (§2.1.1) that somatic feelings are a necessary part of an emotion's phenomenal properties, and back up my claim by explaining the biochemical underpinnings of emotion. When two emotions differ in somatic feeling, they will also differ in their phenomenal properties. On this basis, how an emotion feels somatically is part of what it's like to have that emotion; somatic feelings are part of the phenomenal properties of an emotion. Therefore emotion necessarily requires bodily feelings. I consider the challenge (§2.1.2) that feelings are merely the causal effects of emotion and not constituent parts of it. I respond (§2.1.3) that the challenge is incoherent. The phenomenal properties of a conscious emotion are intrinsic to that emotion. Feelings are an intrinsic part of the phenomenal properties of emotion, therefore, feelings are an intrinsic part of emotion. Emotion is partly constituted by feelings.

§2.1.1: Emotion Necessarily Requires Feelings

It seems intuitively to be the case that emotion necessarily requires feelings. For instance, notions of 'feeling an emotion' and 'having an emotion' appear to be intensionally interchangeable – the two seem to mean the same thing. 'Feeling happy' and 'being happy' are analogous terms. Similarly 'feeling annoyed' and 'being annoyed', or 'feeling jealous' and 'being jealous'. The intensional interchangeability between such terms makes emotion somewhat different from non-emotional states. Take the example of a cognitive state like belief. The notion of 'believing that the sky is blue' isn't typically intensionally interchangeable with the notion of 'feeling that the sky is blue'. Someone claiming a belief and someone claiming a feeling with the same

intentional content are not taken to be making analogous claims. Similarly for perceptual states; ‘seeing my laptop’ and ‘feeling my laptop’ refer to two distinct perceptual senses, visual and kinaesthetic, and therefore the two notions are not intensionally interchangeable. The intensional interchangeability between ‘being in an emotional state’ and ‘feeling an emotion’ seems to indicate an intuitive link between emotion and feeling.

The feelings that seem integral to emotion include bodily or somatic feelings. Paradigmatically the somatic symptoms of emotion include *inter alia* elevated or decreased heart rate, increased or decreased respiration, tensing or relaxing of muscles, and intestinal peristalsis. Many of these somatic aspects are reflected in the metaphorical language we use to describe what it’s like to be in a particular emotional state – for instance gut wrenching despair, cringing embarrassment, or paralysing fear. Indeed, it may seem almost trivial to claim that what it’s like to be in a particular emotional state is determined *inter alia* by how one feels somatically. This seeming triviality illustrates that the phenomenal properties of emotion are intimately linked with somatic feelings. The reason for this intimate link may be found when one considers the biochemical processes that underpin emotion. Neuroscientist Candice Pert (1997) explains the process in her book *Molecules of Emotion*:

During episodes of emotion a biochemical chain of events unfolds. Small-chain amino acids, known as peptides, are released into the body. These peptides travel through the blood and the limbic system and affect muscles and internal organs at a cellular level.

The surface of every cell throughout the body and in the brain has an outer oily membrane. Cellular structures known as ‘receptors’ are found in this membrane. These receptors are analogous to “lily pads floating on the surface of a pond, and, like lilies, receptors have roots enmeshed in the fluid membrane...and reaching deep into the interior of the cell” (Pert 1997, p.22). Receptors are composed of single molecules that respond to energy and chemical cues by vibrating. This allows chemicals to bond with the cell, a process that results in structural changes in the cell itself; receptors “bend and change from one shape to another, often moving back and forth between two or three favoured shapes, or conformations” (Pert 1997, p.22). A single cell can have millions of these receptors on its surface.

At a cellular level, receptors bind with specific chemicals, known as *ligands*²¹, which exist in the extracellular fluid. A ligand is analogous to a chemical ‘key’ which binds with the receptor much as a key enters a keyhole. This process of binding creates a disturbance in the receptor molecule, causing it to rearrange its shape so that the chemical information of the ligand can enter the cell. The chemical information, having moved from the surface to the interior of the cell, begins a chain reaction of biochemical events that alter the state of the cell itself so that it might, for example begin to manufacture proteins, initiate cell division or discharge electricity. “In short, the life of the cell, what it is up to at any moment, is determined by which receptors are on its surface and whether those receptors are occupied by ligands or not” (Pert 1997, p.24). As an example, the binding of acetylcholine²² to receptors on the cells of heart muscle,

²¹ From the Latin *ligare*, meaning that which binds.

²² Acetylcholine is an organic molecule that has been shown to be involved in heightened responsiveness and attention to sensory stimuli. See: Spehlmann et. al. (1971), Stone (1972), Foote et al. (1975).

digestive tract muscle, and skeletal muscle, can variously result in a slowing of the heartbeat, the stimulation of digestion and feelings of relaxation.

Because of *receptor specificity* the process of binding is selective. Receptor specificity means that a receptor will bind only with those ligands that have exactly the right shape to fit with it. “The opiate receptor, for instance, can ‘receive’ only those ligands that are members of the opiate group, like endorphins, morphine or heroin” (Pert 1997, p.24). Ligands are divided into three chemical types. The first type is that of the classical neurotransmitters like serotonin, histamine, dopamine and acetylcholine. The second is the category of steroids such as cortisol, oestrogen, progesterone and testosterone. But by far the largest category of ligands (accounting for about 95% of them) are the ‘peptides’, which play a wide role in the regulation of all biological processes, and amongst which the emotional peptides are to be found:

Until the brain peptides were brought into focus by the discoveries of the 1970s, most of our attention had been directed toward neurotransmitters and the jump they made from one neuron to another, across the little moat known as the *synaptic cleft*. The neurotransmitters seemed to carry very basic messages, either ‘on’ or ‘off’, referring to whether the receiving cell discharges electricity or not. The peptides, on the other hand, while they sometimes act like neurotransmitters, swimming across the synaptic cleft, are much more likely to move through extracellular space, swept along in the blood and cerebrospinal fluid, travelling long distances and causing complex and fundamental changes in the cells whose receptors they lock into.

Pert 1997, p.26-7

Peptides are organic molecules that have extensive impact on the body at a cellular level. Composed of short-chain amino acids, bound together with carbon and nitrogen, peptides can be thought of as chemical messengers or ‘information substances’: “Amino acids are the letters. Peptides, including polypeptides and proteins, are the words made

from those letters. And they all come together to make up a language that composes and directs every cell, organ and system in your body” (Pert 1997, p.65).

The biochemical changes, initiated by peptide binding at receptor sites, result in the alteration of cellular structure. Pert writes: “When a receptor is flooded with a ligand, it changes the cell membrane in such a way that the probability of an electrical impulse travelling across the membrane where the receptor resides is facilitated or inhibited” (1997, p.143). This occurs not only in the cells of the brain but at receptor sites between nerves and bundles of nerve-cell called ganglia, distributed in and near the spinal chord. These extend along pathways to the internal organs and to the skin. What this means is that the biochemical process involved in emotion – the binding of emotion peptides like adrenaline, noradrenaline, serotonin, cortisol, acetylcholine, etc. to receptors and subsequent cellular alteration – happens throughout the body.

Having an emotion changes the body at a cellular level in ways that can be felt at a conscious level, so to ignore these changes would constitute an underdetermination of emotion. Take for instance a rough biochemical picture of what happens in the ‘fight or flight’ response associated with fear. When you feel fear, cortisol is released into the bloodstream. Cortisol binds with receptors in the cells of your brain and body (heart, lungs, skeletal muscles etc.). Once bound, cortisol releases its chemical information into the cells and results in structural cellular changes; your neurons fire, your heart beats faster and your blood pressure rises, your breath is more shallow, your muscles tense. All of these changes happen at a cellular level but they are changes that register, i.e. you can feel them happening. This means that the phenomenal properties of emotion - what

it's like to have an emotion - is determined in part by the bodily feelings that accompany the biochemical changes occurring at a cellular level throughout the body.

The evidence from the biochemistry of emotion provides empirical support for our intuitive notion that emotion necessarily requires feelings. On my view, therefore, emotion necessarily requires feelings.

§2.1.2: A Challenge from Contingency

A cognitivist challenge to my position might argue that feelings are not constituent parts of emotion, rather they are merely its causal effects. Joel Marks (1982) argues for this claim. He maintains that emotions can be reduced to belief-desire sets. On his view an episode of fear, for instance, can be reduced to the belief that one is in danger and the desire to flee. According to Marks, emotion can cause bodily feelings but the bodily feelings that arise are contingent, and therefore not an intrinsic part of the emotion itself.

§2.1.3: Response to the Challenge

I believe the cognitivist position is unconvincing. I argued in the previous chapter that emotions are paradigmatically valenced states. I argued that valence is necessarily somatic, it is necessarily felt in the body. And I defended this claim against an objection from unconscious emotion. I argued that unconscious emotions are special cases and not

counterexamples because unconscious states lack phenomenal properties by definition, so one may not appeal to these states as arbiters of phenomenal properties.

In order for the challenge to be convincing, it would have to demonstrate that the *phenomenal properties* of a conscious emotion are causal effects of that emotion and not intrinsic parts of it. This seems to me to be an incoherent position. If one were to remove the phenomenal properties of emotion, one would remove the emotion. For instance, if one were to remove the feeling of a racing heart and churning stomach from the emotion of excitement, if one were to feel nothing at all, one would no longer characterise oneself as excited. The phenomenal properties of a conscious emotion are intrinsic to that emotion. Feelings are an intrinsic part of those phenomenal properties. Therefore feelings are an intrinsic part of emotion. Emotion is partly constituted by feelings.

I now present feeling theories of emotion which hold that emotion can be reduced to feelings alone. I then go on to argue (§2.3) that emotion cannot be reduced to feelings because emotion has rational properties which feelings do not have.

§2.2: Argument for the Reduction of Emotion to Feelings

I argued in the previous section that emotion is partly constituted by feelings. But some theorists have gone further and suggested that emotions just *are* those feelings. In this section I present (§2.2.1) the feeling theories of emotion. I also present (§2.2.2) a challenge against those theories. I further discuss (§2.2.3) a methodological weakness in

the challenge before presenting my argument (§2.3) for why emotion cannot be reduced to feelings.

§2.2.1: Feeling Theories of Emotion

Feeling theories of emotion, most notably those of William James (1884) and Carl Lange (1885), characterise emotions as physiological changes. On this view, when an object or event provokes emotion, one has a physiological response, and one's physiological response is both necessary and sufficient for emotion; the somatic response just *is* the emotion.

William James writes; “My thesis...is that *the bodily changes follow directly the PERCEPTION of the exciting fact, and that our feeling of the same changes as they occur IS the emotion*” (1884 p.189-90; original emphasis). He goes on to say that “every one of the bodily changes, whatsoever it be, is *felt*, acutely or obscurely, the moment it occurs” (ibid, p.192; original emphasis).

James argues for his thesis by considering what, if anything, is left of emotion once the feeling of bodily changes is subtracted from it. “If we fancy some strong emotion and then try to abstract from our consciousness of it all the feelings of its characteristic bodily symptoms, we find we have nothing left behind, no ‘mind-stuff’ out of which the emotion can be constituted, and that a cold and neutral state of intellectual perception is all that remains” (ibid, p.193). A purely disembodied emotion, one not felt in the body,

is inconceivable according to James. Carl Lange, separately, comes to the same conclusion:

We have in every emotion as sure and tangible factors: (1) a cause – a sensory impression which usually is modified by memory or a previous associated image; and (2) an effect – namely, the above mentioned vaso-motor changes and consequent changes in bodily and mental functions. And now we have the question: What lies between these two factors; or does anything lie between them? If I start to tremble when I am threatened by a loaded pistol, does a purely mental process arise, fear, which is what causes my trembling, palpitation of the heart, and confusion; or are these bodily phenomena aroused immediately by the frightening cause, so that the emotion consists exclusively of these functional disturbances of the body?

Lange 1885, p.64

His answer is that the latter is the case – emotion consists in bodily changes. Like James, Lange holds that emotion cannot plausibly be said to exist without its feeling attributes. “Take away the bodily symptoms from a frightened individual; let his pulse beat calmly, his look be firm, his colour normal, his movements quick and sure, his speech strong, his thoughts clear; and what remains of his fear?” (Lange 1885, p.66). His question is, he believes, rhetorical; on his view nothing is left. According to both James and Lange feelings are necessary for emotion.

James implies that feelings are also sufficient for emotion when he claims that there is no ‘mind-stuff’ remaining out of which an emotion can be constituted once the feeling of an emotion is removed. Lange goes one step further and attempts to substantiate this implication. He argues that emotion can be induced or changed purely by physical means. He argues that alcohol can change sorrow into joy, and fear into courage, and that emetics can have a depressive effect. If emotion can be elicited in a purely physical way “utterly independent of disturbances of the mind” (Lange 1885, p.66), he argues, then emotion must be a feeling phenomenon - thought, or cognition cannot be a necessary part of it.

For James and Lange emotion is best understood as a non-cognitive embodied phenomenon for which feelings are both necessary and sufficient. On this view, feelings are necessary for emotion because taking away the feeling of an emotion leaves nothing remaining that could plausibly be called an emotion. And they are sufficient because emotion can be induced by chemical means and therefore without the necessity for cognition or perception. If feelings are both necessary and sufficient for emotion, then emotions can be reduced to feelings.

§2.2.2: Challenge to the Feeling Theories

An argument against the Feeling Theories was originally put forward by Walter Cannon (1927) based on evidence from Gregorio Marañón (1924). Later, Schachter & Singer (1962) conducted research that attempted further to substantiate Cannon's challenge. The challenge maintains that feelings alone are not sufficient to explain how we differentiate between disparate emotions that feel similar. If that's true then feelings are necessary but not sufficient for emotion.

The feeling theories of James and Lange became orthodoxy until they were challenged by Walter Cannon in 1927. He argues that the feeling theories aren't sufficient to explain how we distinguish between emotions and non-emotional states with similar physical symptoms. On Cannon's view, fear and rage, as well as fever and exposure to the cold, result in the same "acceleration of the heart, contraction of arterioles, dilatation of bronchioles, increase of blood sugar, inhibition of activity of the digestive glands,

inhibition of gastro-intestinal peristalsis, sweating, discharge of adrenin, widening of the pupils and erection of hairs” (1927, p.110). But, he argues, fear, rage, fever and exposure to the cold are all states that we can typically distinguish between under normal circumstances; we don’t, under normal circumstances, mistake being cold for being enraged. If the physical symptoms are the same in each case, argues Cannon, then their differentiation cannot be due to physical symptoms. Thus, on his view, the feeling theories are insufficient to account for how we differentiate amongst different emotions that feel physiologically similar.

Carl Lange had made purely anecdotal claims about artificial emotion induction in his argument. Cannon countered those claims by citing Marañon (1924) who had carried out research into the effects of injections of adrenalin:

When injected directly into the blood stream or under the skin it induces dilatation of the bronchioles, constriction of blood vessels, liberation of sugar from the liver, stoppage of gastrointestinal functions, and other changes such as are characteristic of intense emotions. If the emotions are the consequence of the visceral changes we should reasonably expect them, in accordance with the postulates of the James-Lange theory, to follow these changes in all cases. Incidental observations on students who received injections of adrenalin sufficiently large to produce general bodily effects have brought out the fact that no specific emotion was experienced by them - a few who had been in athletic competitions testified to feeling "on edge," "keyed up," just as before a race.

Cannon 1927, p.113

Cannon claimed that if artificial stimulation of the physiological changes typically associated with strong emotions didn’t produce those emotions, then emotions must be more than just physiological changes. On this view, feelings are not sufficient for emotion.

Stanley Schachter and Jerome Singer (1962) believed that the evidence used by Cannon in his argument could be open to challenge. The subjects in Marañón's study had been aware that they had been injected with adrenalin. Schachter & Singer believed that this could have biased the results. They maintained that a subject who feels 'on edge' or 'keyed up' would be less likely to identify themselves as feeling an emotion (fear or excitement for example) if they are aware that those feelings are the result of an injection of adrenalin. On their view, subjects would be less likely to report an emotional state if they already had a physical explanation for the way they felt; they would just attribute any physiological symptoms to the injection and not look any further for an emotional explanation.

To overcome this shortcoming Schachter & Singer (1962) devised a study that avoided the methodological problems of Marañón's research. In their study subjects were told that they were being injected with a vitamin rather than with the epinephrine (adrenalin) that was actually used. Of the 185 subjects who took part in the study, some were told they would experience physical side effects and some were not. Amongst those who were made aware of the possibility of side effects, some were correctly informed that they would experience elevated heart rates and increased respiration, while some were misinformed that they would experience numbness and itching.

Schachter & Singer's study was designed to show whether subjects in the same artificially induced states of physiological arousal could be manipulated into demonstrating and reporting different emotional states. They hypothesised that "given a state of physiological arousal for which an individual has no explanation, he will label this state in terms of the cognitions available to him" and "by manipulating the

cognitions of an individual in such a state we can manipulate his feelings in diverse directions” (Schachter & Singer 1962, p.395). To that end, the subjects were split into two groups. Individual subjects from the first group were left alone in a room with someone demonstrating euphoric behaviour; individuals from the second group were left with someone demonstrating increasing levels of outrage.

The researchers hypothesised that subjects who either had no knowledge of, or incorrect information about, possible side effects of the ‘vitamin’ injection, could be manipulated into believing they felt the emotion being expressed by the person with whom they were left alone. Thus, those left with the ‘jester’ would demonstrate and report joy or happiness, while subjects left alone with the enraged individual would demonstrate and report anger. The results supported their hypothesis: “those subjects who had no explanation for the bodily state thus produced, gave behavioural and self-report indications that they had been readily manipulable into the disparate feeling states of euphoria and anger” (Schachter & Singer 1962, p.395).

Schachter & Singer concluded that something other than the feelings caused by the adrenalin, with which the subjects had been injected, must be at play. All of the subjects should have experienced the same physiological symptoms (i.e. they should all have had similar feelings), yet some subjects claimed to experience joy while others claimed to experience anger. The disparity in their reported emotional experience could not be explained by the adrenalin injection. Schachter & Singer concluded that emotion identification necessarily requires something other than somatic feelings. The research, therefore, seemed to demonstrate that feelings are not sufficient for emotion. But the

research nevertheless had some methodological problems which undermine this conclusion.

§2.2.3: Issues of Methodology

A challenge might be raised against Schacter & Singer's methodology. Although their expectation was that the subjects all had similar feelings, resulting purely from the adrenaline injection, this may not have been the case. It is equally plausible that emotional contagion²³ was the reason for the subjects' reports of their emotions.

Roughly speaking, you tend to feel happy when you're in the presence of someone who is obviously happy, and you tend to feel anxious and angry when you are with someone who is enraged. If that's the case then the researchers' assumption that the test subjects only experienced feelings consistent with the injected adrenaline is flawed. The subjects who reported joy may genuinely have had a different physiological experience from those who reported anger. Their emotional states may have resulted, not just from the injected chemical, but from exposure to the emotional behaviour of the stooges. Those who reported feeling happy may indeed have felt happy; those who reported feeling angry may indeed have felt angry. If that's true then the researchers' conclusion that physiological symptoms are insufficient to differentiate between experiences of disparate emotions is undermined.

²³ Emotional contagion is a form of empathy in which the emotions of two or more people can converge when they interact with one another. For more on the subject of emotional contagion see Hatfield, Cacioppo & Rapson (1994).

Schacter & Singer had two control groups. One was composed of those who were correctly informed of the symptoms to expect from the injection they were given; the other control consisted of a group injected with placebo (saline instead of epinephrine). The researchers hypothesised that those who were correctly informed were less likely to identify their physiological state as an emotional state; as with Marañón's subjects, any physiological symptoms would be attributed to the injection. Their results bore this hypothesis out: "In those conditions in which subjects were injected with epinephrine and told precisely what they would feel and why, they proved relatively immune to any effects of the manipulated cognitions." (1962, p.396). However, the difference between the control group injected with placebo and those who were misinformed about the side-effects of the injection showed only borderline statistical significance. Those who were injected with placebo were as likely to report experiences of joy or anger as other subjects in the study. The research could not rule out the possibility that subjects were influenced by emotional contagion.

In an attempt to compensate for the methodological shortcomings of the Schachter & Singer research, further research was carried out by Schachter & Wheeler (1962). In this study a further control group was introduced. This control group was injected with the autonomic blocking agent, Chlorpromazine²⁴. The new research also mitigated against the potential for intersubjective influence by using a comedy movie (as opposed to 'stooges') to manipulate the emotions of the subjects.

The researchers hypothesised that "whatever emotional state is experimentally manipulated, it should be most intensely experienced by subjects who have received

²⁴ Chlorpromazine works by binding with cellular receptor sites for adrenalin, thus blocking adrenalin from binding to those sites. It is the active ingredient in the anti-psychotic drug marketed under the brand name Thorazine.

epinephrine, next by placebo subjects, and least of all by subjects who have received injections of an autonomic blocking agent” (Schachter & Wheeler 1962, p.121). Their results bore out their hypothesis. “Epinephrine subjects gave indications of greater amusement than did placebo subjects who, in turn, were more amused than chlorpromazine subjects” (ibid, p.124). Although the research only measured one emotion (amusement), it nevertheless backs up Schachter & Singer’s research. It shows that the somatic symptoms associated with adrenalin (the biochemical correlate of fear) can be misattributed as amusement. This misattribution is evidence that emotion identification requires more than somatic feelings.

Schachter & Wheeler (1962) showed that the biochemical correlates of fear (adrenaline) can be misattributed as amusement. Research from Dutton & Aron (1974) and White, Fishbein & Rutstein (1981) also provides evidence that fear can be misattributed as sexual attraction; fear and sexual attraction can be mistaken for one another. The feelings associated with fear, excitement, amusement and sexual attraction do not seem to be sufficiently different from one another for us to differentiate between these disparate emotions. These emotions feel so similar that we can be manipulated into mistaking them for one another.

Feeling theories of emotion are problematic because some disparate emotions feel similar. As both fear and excitement can be described as including feelings of tension, elevated heart rate, and shortness of breath, then there must be some other explanation for how we can tell fear and excitement apart. Feelings are not sufficient to explain how we differentiate between emotions that feel similar. Thus emotion cannot be reduced to

feelings. But I believe there is another reason why emotion cannot be reduced to feelings. Namely, emotion has rational properties that feelings do not have.

§2.3: A Property of Emotion not held by Feelings

Ontological emergence entails that the emergent system cannot be reduced to its constituents by virtue of its having properties not held by those constituents. In this section I argue (§2.3.1) that emotion has rational properties. Emotions can be instrumentally rational, inasmuch as emotions can be purposive. Paradigmatic feelings like thirst and pain, on the other hand, do not demonstrate instrumental rationality. I consider the challenge (§2.3.2) that emotion used purposively is not genuine emotion. I respond (§2.3.3) that the challenge is difficult to defeat, but even if it is correct, there is further reason to hold that emotion has rational properties. Emotion is open to reason. Feelings like thirst and pain, on the other hand, are not. Emotion has rational properties not held by feelings. Thus, emotion cannot be reduced to feelings.

§2.3.1: Emotion's Instrumental Rationality

Emotion has rational properties not held by feelings like thirst and pain. For instance, emotion demonstrates instrumental rationality²⁵. We sometimes use emotion to get our

²⁵ See Patricia Greenspan (1988); she argues that emotion has 'strategic rationality'. On her view, the rationality of emotion shouldn't be assessed in terms of how rational the emotion might be as an immediate response, nor indeed in terms of the agent's control over her emotion but rather in

own way. It is not uncommon, for instance, for children to cry, or throw a temper tantrums, in order to get what they want. As adults we are also not above resorting to emotional blackmail, or using emotion to manipulate others for our own ends. A nice example of this is given by Robert Solomon (2003):

Joanie wants to go to a party; her husband does not. She begins to act bored and frustrated; he watches television. She resigns herself to reading, sighing occasionally. He asks if she has picked up some shirts from the laundry; she says “no”. He flies into a rage. He needs shirts (he has hundreds). He needs one of *those* (they are all the same). She is negligent (she was busy). She takes advantage of him (she stays with him). Naturally, she rebels, but she is upset, with mixed guilt and anger. She thinks him unreasonable, impossible, and slightly neurotic. Their encounter is short-lived. She goes off to read; he settles back before the television. The party is out of the question.

Solomon 2003, p.12

Both parties in this exchange use emotion to try to get what they want. Joanie deliberately shows her boredom and frustration with occasional sighing, presumably in an attempt to change her husband’s mind. The husband (we never learn his name) uses his anger so that Joanie will give up on the idea of the party. This sort of occurrence is not unusual and may even be a familiar part of some relationships.

Similarly, it is not unusual that a person can use sadness to achieve what they want. Part of the complexity of this kind of instrumental use of emotion is that our own emotions can evoke emotion in another. Sadness can evoke feelings of guilt in another. This guilt can then convince the other to give us what we want. We learn this at a very young age when we realise that our tears can convince a parent to capitulate. The notion of ‘guilt tripping’ is something with which we are probably all familiar; either because we’ve done it ourselves, or because we’ve had it done to us, or both. It’s possible to ‘guilt trip’

terms of how her emotion functions as a way of avoiding injury (in the widest sense of that term) and controlling the behaviour of others.

another by verbal appeal to their emotions (as in *argumentum ad misericordiam*), but it seems that the easiest way to appeal to another's emotions is through the use of our own. It is possible to make someone feel guilty by showing them that you're sad, and allowing them to infer that your sadness is their fault. When someone thinks that your sadness is their fault, they are more likely to capitulate and give you what you want. Thus sadness can be used instrumentally for one's own ends. As Solomon writes:

Emotions are not the brutish, unlearned, uncultured, illogical and stupid drives that they are so often argued to be. To the contrary, they are extremely subtle, cunning, sophisticated, cultured, learned, logical and intelligent. There is more intelligence in resentment than in the routine calculations of syllogising; and there is far more strategy in envious Iago than in thoughtful Hamlet. The cunning of Reason, when you see what Hegel means by it, is almost always the cunning of emotion.

Solomon 1977, p.46

Emotion can be used in subtle, cunning, and sophisticated ways. Emotion can be used to manipulate the feelings of others in order to achieve our own ends. As such, therefore, emotion demonstrates instrumental rationality.

Bodily feelings are not instrumentally rational. Take thirst and pain for instance. We do not (neither consciously, nor unconsciously) become thirsty in order to achieve our own ends in the way that we can become angry to avoid going to a party. We become thirsty as a result of dehydration. We do not feel pain in order to manipulate others, we feel pain when we are injured or unwell.

Emotion demonstrates instrumental rationality, and bodily feelings do not. Emotion has rational properties not held by bodily feelings. Bodily feelings, therefore, cannot

account for the rationality of emotion. Thus, emotion cannot be reduced to bodily feelings.

§2.3.2: A Challenge from ‘Non-Genuine’ Emotion

A potential challenge may be raised against my argument for the rationality of emotion. It might be argued that emotion, when it is used instrumentally, is not genuine emotion. Theorists who considers genuine emotion to be passive and pre-reflective may hold this position²⁶. Peter Goldie (2000) holds something like this position about expressions of emotion. He describes facial expressions (as well as related phenomena like laughter and tears) as “*involuntary* bodily movements” (Goldie 2000 p.137; original emphasis). He argues that emotional expressions, used instrumentally, do not constitute genuine expressions of emotion. In the same vein, it might be argued that someone who uses anger to avoid a party is not genuinely angry, rather they pretend to be angry in order to get what they want. Similarly, someone who uses sadness to make another feel guilty merely pretends to be sad.

Emotion used instrumentally may not be genuine emotion. If emotion used instrumentally is not genuine emotion, then such instances do not provide evidence that emotion has rational properties. According to this challenge, therefore, emotion cannot be said to have rational properties.

²⁶ For instance see Peters & Mace (1962) on emotions as passive states, and Davis (2003) on expressions of emotion as involuntary.

§2.3.3: Response to the Challenge

The challenge is correct inasmuch as instrumental use of emotion is not sufficient evidence for the claim that emotion has rational properties. Indeed, if this were the only reason to believe that emotions demonstrate rationality, my argument would be seriously undermined. However, emotions can also be said to be rational in another way. Emotions are responsive to reason.

For example, in *The New York Journal* of June 2nd 1897, Mark Twain famously wrote: “The report of my death was an exaggeration”. No doubt some of his friends had seen the earlier newspaper reports of his death that had prompted him to make the statement. If they did see the earlier mistaken reports, then it is likely that they felt grief at what they thought was the death of a friend. But the same friends would have ceased to grieve once they realised that Twain was still alive. This because grief is open to reason. Once one realises that the person one grieves for is still alive there ceases to be a reason to grieve, and so one stops grieving.

Similarly, I might feel guilty about turning up fifteen minutes late for dinner, but if I were to discover that my watch was running fifteen minutes fast, and I wasn’t in fact late after all, I would no longer have reason to feel guilty. My guilt would dissipate, probably to be replaced by relief. If emotions weren’t responsive to reason in this way then I might continue to feel guilty. The fact that I cease feeling guilty demonstrates that emotion is responsive to reason. This responsiveness to reason is a rational property of emotion.

Bodily feelings, on the other hand, are not responsive to reason. If I am thirsty, reasoning that I just had a large glass of water only an hour ago, and ought not to be thirsty again, will not alleviate my thirst. If my toe hurts because I stubbed it on the coffee-table, reasoning that I ought to have been looking where I was going, or discovering that it was in fact the desk and not the coffee-table I'd walked into, will not change the pain in my stubbed toe. Bodily feelings like thirst and pain are not open to reason.

Emotions have rational properties; they are responsive to reason. Paradigmatic feelings are not responsive to reason; they do not have rational properties. As such, therefore, emotion has at least one property not held by feelings. As feelings cannot account for the rational properties of emotion, emotion cannot be reduced to feelings.

Chapter Conclusion:

In this chapter I have argued that feelings are an intrinsic part of emotion. This seems intuitively to be the case (talk of feelings is often interchangeable with talk of emotions), and evidence from the biochemistry of emotion supports this intuition. I argued that the phenomenal properties of emotion are partly determined by feelings. The phenomenal properties of emotion are intrinsic to emotion. Thus feelings are an intrinsic part of emotion. But emotion cannot be reduced to feelings because emotion has rational properties not held by feelings. Thus, feelings are necessary but not

sufficient for emotion. Feelings are an intrinsic part of emotion, but emotion cannot be reduced to feelings.

In the next chapter I argue that emotion is also partly perceptual, but that it cannot be reduced to its perceptual parts.

Chapter 3: Emotion's Perceptual Parts

In this chapter I will argue that emotion is partly perceptual, but emotion cannot be reduced to its perceptual parts. I argue (§3.1) that the intentionality of emotion partly supervenes on perception. On my view the intentional objects of emotion are perceptual objects and thus emotion necessarily requires perception. I discuss (§3.2) a perceptualist argument that emotion can be fully explained by, and therefore reduced to, perception. I argue (§3.2) that emotion has at least one property that perception does not have; emotion has second-orders, as evidenced by metaemotion, while perception does not. Thus emotion cannot be reduced to perception. Emotion is partly perceptual, but it cannot be reduced to its perceptual parts.

§3.1: Emotion is Partly Perceptual

In this section I will argue that an emotion's intentionality - what an emotion is about - is determined in part by the objects of perception. I argue (§3.1.1) that the intentional objects of emotion are perceptual objects. As such, therefore, emotion necessarily requires perception. I anticipate two challenges to my position. First (§3.1.2) that the intentionality of an emotion is determined by cognition; if that's the case then my claim that the intentionality of emotion also supervenes on perception may be said to constitute an overdetermination of emotion. Second (§3.1.3) I consider a potential challenge from absent objects.

§3.1.1: The Intentional Objects of Emotion are Perceptual Objects

Occurrent emotions are typically intentional states, which is to say that they are typically *about* something. When I feel embarrassed, there's typically something that I'm embarrassed about - some ill-advised behaviour on my part. When I grieve, my grief is typically about something - the loss of someone important to me. When I feel guilty, there's typically something I feel guilty about - e.g. turning up late for dinner. In each of these instances the emotion in question has an intentional object – that which the emotion is about. My embarrassment is about my behaviour, my grief is about my loss, my guilt is about my tardiness. Emotion represents its intentional objects as being a certain way. So for instance, my embarrassment represents my behaviour as socially awkward; my grief represents my loss as painful and irredeemable; my guilt represents my tardiness as disrespectful or hurtful. Nevertheless the objects and events that emotion represents are objects and events in the world.

When I'm angry at some real or imagined slight, my anger can be said to be about that real or imagined slight. On this basis it can be said that the real or imagined slight is the intentional object of my anger. I emphasise that the slight can be imagined because it is possible to be mistaken about the intentional objects of emotion. For instance, suppose a friend fails to acknowledge me when we pass each other on the street. I can feel quite hurt and angry that she has snubbed me. In this instance 'her failure to greet me' is the intentional object of my emotion. However, I may be mistaken. It may be that my friend was preoccupied with concerns of her own and unaware of her surroundings when we

passed one another; it may be that she didn't see me at the time. In this case no real snub exists and my emotional response is mistaken.

Emotion represents the world as being a certain way; as being thus and so. For example, my anger and hurt represent 'my friend's failure to greet me' as 'a snub'. Part of what my emotion is about, therefore, is my perception of my friend's failure to greet me. Without my perceiving that failure, there would be no emotion. Thus the intentionality of emotion is determined *inter alia* by the objects that emotion represents. And the objects that emotion represents are objects of perception. Thus the intentionality of emotion is determined *inter alia* by the objects of perception. Emotion is partly perceptual.

Consider another example. John and Tim have decided to marry. As the day draws closer, John notices that Tim is spending less and less time on the wedding arrangements and more time with his football friends. The night before the wedding, when they were due to introduce their parents to each other, Tim turns up late saying he got caught up with work but looking like he'd just got out of the shower. Throughout the meal, Tim seems to be paying little attention to the enthusiastic conversation about the honeymoon and answers several texts, smiling secretly to himself each time. When they reach home afterwards, Tim tells John that he has to pop out again for a little while. By the time he returns several hours later, John has worked himself into a consummate state of jealousy. John accuses Tim of having cold feet about the wedding, he cites Tim's increasing absence as an obvious lack of commitment, he accuses him of lying about why he was late for dinner and concludes that he'd just spent the previous

hours with a lover. In John's opinion they might as well call the wedding off now and avoid the inevitable divorce down the line.

As it turns out, John couldn't have been be more mistaken. Tim had been more absent recently because he'd been secretly contacting all of John's old university friends to ask them to come to the wedding as a surprise for John. Given that Tim wasn't sure who these friends were this included a lot of time spent tracking people down, time which he'd told John he was spending with his football friends so as not to spoil the surprise. On the day of the dinner he'd also devoted hours to searching through dusty old archives at the university for endearingly funny photos of John, after which he'd needed to shower at the gym in order to be presentable for dinner with the parents. During dinner he'd received the final messages from Tim's old friends promising they'd be there for the wedding the next day. After he'd dropped John off, Tim had gone on to his office to compile the photos he'd gathered from the university into a video montage with John's favourite song in the background. Unfortunately, this had taken more time than he'd envisaged but he couldn't wait to see John's delight the following day at the wonderful surprise. Equally unfortunately, it never occurred to him that John might misinterpret his actions, it never occurred to him that John might feel jealous. But Tim was now faced with spoiling the surprise or risking a cancelled wedding.

The point of this fictional story is to show that we can easily be mistaken where emotions are concerned. And when we are mistaken it is typically because we have misinterpreted or misrepresented that which the emotion is about. John misrepresented Tim's behaviour as infidelity. As such, therefore, John's jealousy was partly about Tim's behaviour; his absences, his excuses, his furtive texts. And Tim's behaviour was

something that was perceived by John. It seems that the objects we misrepresent, when our emotions are mistaken, are perceptual objects. Thus, objects of perception are part of the intentionality of emotion.

§3.1.2: Challenge from Overdetermination

A potential challenge may be raised that the intentionality of emotion is cognitive. For instance, jealousy is about infidelity or a fear of loss. Thus, John's jealousy is about his evaluation of Tim as being unfaithful. The evaluation made by John represents Tim's behaviour as being a certain way, i.e. as being unfaithful. This evaluation appears to be sufficient to explain the representational content of John's emotion. If that's the case then the intentionality of emotion is cognitive and my characterisation of intentionality as partly perceptual might be said to constitute an overdetermination of emotion.

The challenge is flawed because it conflates the intentional objects of emotion with the way in which those objects are evaluated. Consider the case in which John's emotion is something other than jealousy. It's possible that John could have evaluated Tim's behaviour as deeply loving (which in fact it was), in which case his emotion would have been something other than jealousy (gratitude perhaps). The version of John's story in which he is jealous and the version in which he is grateful share the same intentional object – Tim's behaviour. The fact that one of these potential emotions is a misrepresentation of that object, and the other isn't, does not detract from the fact that the intentional object is the same in both cases. In both cases the intentional object is an object of perception.

Tim's behaviour is a real-world state of affairs as perceived by John. To conflate Tim's behaviour with John's evaluation of that behaviour would be to fall foul of an act-object ambiguity. It is a mistake to conflate the object of the emotion with the evaluation of that object. Irrespective of *how* John evaluates Tim's behaviour, *what* he evaluates is Tim's behaviour and Tim's behaviour is a perceptual object. To consider how an object of emotion is evaluated, and fail to consider the nature of that which is being evaluated, constitutes a serious underdetermination of emotion. And as conflating the act of evaluation with the object that is evaluated is a mistake, the challenge fails.

§3.1.3: A Challenge from Absent Objects

A second challenge may be raised here. Sometimes we do not directly perceive the objects of our emotions. For instance, it is possible to feel angry about an injustice one merely reads about in the newspaper. In this instance the object of emotion is not directly perceived; the injustice was not witnessed in person. If one can have an emotion about an object that is not directly perceived, then my claim that the intentionality of emotion supervenes on perception seems to be undermined.

I find the objection unconvincing because it implies that objects of perception might only be characterised *as* objects of perception when they are directly perceived. The challenge maintains that one would have to question whether the objects of emotion are perceptual objects if one can have an emotion about an absent object. The implication here is that the object of an emotion can be said *not* to be a perceptual object if that object is absent, i.e. if it is not directly perceived. But for this view to be correct it would have to be the case that any object is an object of perception if and only if that object is directly perceived. This position seems to veer perilously close to idealism and must therefore be incorrect. Objects of perception can be characterised *as* objects of perception whether or not they are directly perceived. Thus an absent object is nevertheless an object of perception and the challenge fails.

On my view, the intentional objects of emotion are objects and events in the world. If my view is correct then the objects of emotion are perceptual objects, irrespective of whether those objects are directly perceived by the emoter. And if the intentional objects of emotion are perceptual objects then the intentionality of emotion supervenes, at least in part, on perception. Emotion is partly perceptual.

§3.1.4: Section Conclusion

I have argued that perceptual objects are a necessary part of the intentionality of emotion. If one removes the perceptual object of an emotion, one removes the emotion. Therefore, emotion is partly perceptual. Perceptualism about emotion argues for the stronger claim that emotion can be fully explained by perception; on this view emotion can be reduced to perception. In the next section I will present the perceptual thesis, and

in particular the thesis as it is argued for by Jesse Prinz (2004). I then go on (§3.3) to challenge the reduction of emotion to perception on the basis that emotion has at least one property not held by perception.

§3.2: An Argument for the Reduction of Emotion to Perception

Perceptualism about emotion maintains that emotion just is a form of perception. Jesse Prinz (2004, 2006) holds this view. He argues that, in much the same way as we perceive colour through vision, we perceive danger through fear and we perceive loss through sadness. Emotion, according to Prinz, just is a form of perception. I explain (§3.2.1) Prinz's argument that emotion can be reduced to perception. I present a challenge (§3.2.2) to Prinz on the basis that his position does not adequately account for the way in which we differentiate between different emotions. I then consider his response that emotions can be differentiated on the basis of their cognitive causes, without cognition being a necessary part of emotion.

§3.2.1: Prinz's Perceptual Argument

Prinz holds that emotions are the perception of 'core relational themes', which he describes as relations that pertain to personal wellbeing. Core relational themes, he claims, are representations of "organism-environment relations with respect to wellbeing" (2004, p.52). He argues that these representations are "inextricably bound up with states that are involved in the detection of bodily changes" (ibid, p.52). According to Prinz, in much the same way as the eye is the means by which we perceive visual

images, bodily changes are the means by which we perceive core relational themes. These core relational themes, on Prinz's view, are perceived directly by the body and emotion just is the perception of core relational themes.

In order to unpack Prinz's perceptual thesis, some clarification is necessary, beginning with what we should understand by 'core relational themes'. Prinz borrows the term from Richard Lazarus (1991) who points out that the person and the environment are not wholly separable when it comes to emotion, there is a relationship between the two. Not everyone is afraid of heights, not everyone feels slighted if a friend turns down their dinner invitation, and not everyone enjoys being the centre of attention. "If we feel threatened, insulted, or benefited...there must be a conjunction of an environment with certain attributes and a person with certain attributes, which *together* produce relational meaning" (Lazarus 1991, p.90).

On Lazarus' view, threat, insult and gratification are relational concepts; if you remove either the person or the circumstances from the equation the concepts lose their meaning. Lazarus holds that underlying every emotion is a basic, or central, or core, relational theme which describes the relation between the person and her environment or circumstances. Underlying all instances of anger, for instance, is a central theme of 'a demeaning offense against me and mine'; underlying all instances of anxiety is a basic theme of 'facing uncertain, existential threat'; underlying all instances of guilt is a core theme of 'having transgressed a moral imperative'. Core relational themes, therefore, might be seen as the tropes that underlie different instances of the same emotion. Taking Lazarus' view as the starting point for his argument, Prinz writes:

One can generally find a common theme behind the range of things that elicit any given emotion. Consider a number of things that might cause sadness: a child's death, a report on political crises in the Middle East, a divorce, being fired, a rejection letter, a low grade, misplacing one's favourite sunglasses, a bad weather forecast, and so on. These elicitors range from the tragic to the trivial, and they involve utterly different kinds of events. Still, they are alike in one respect: they all involve the loss of something valued. We can lose loved ones, hopes for world peace, relationships, careers, prized possessions, self-esteem, access to resources, and many other things. The things themselves differ, but each can be lost, each one is valued and in each case the loss leads to sadness. It makes sense to say that sadness is elicited by loss, where loss is defined as the elimination of something valued. This analysis explains why different things sadden different people.

Prinz 2004, p.61-62

When viewed in this way, Prinz believes that the concept of core relational themes allows for a distinction to be made between the *formal object* and the *particular object* of an emotion – a distinction first made by Kenny (1963). “The death of a child can be a particular object of one's sadness, but it causes sadness in virtue of being a loss. Being a loss is the formal object of sadness” (Prinz 2004, p.62).

Prinz then argues that core relational themes are the formal objects of emotion – they are the relational properties in virtue of which a specific emotion is felt. On Prinz's view, emotion represents its formal objects. Thus, according to Prinz: “An episode of sadness may concern any number of distinct particular objects, but the sadness in each episode represents loss” (ibid, p.62). On this view core relational themes are the formal objects of emotion, and emotion represents core relational themes.

Prinz argues that if the representations of emotion can be explained without appeal to cognition then emotion can be reduced to perception. He argues that “emotions can represent core relational themes without describing them” (2004, p.65) and that “core

relational themes are tracked by registering changes in the body” (ibid, p.68). He argues that this means that emotion can be reduced fully to perception without appeal to any cognitive components like judgement or belief.

To explain this more fully he draws an analogy with higher level conceptual contents of visual perception. Theories of higher order perception hold that what we have learned, not least in terms of concepts, contributes to the representational content of perception. The representational content of perception can depend on experience. In much the same way, on Prinz’s view, bodily changes can register *as* core relational themes. When I see a snake, I don’t need to form the judgment that this snake is dangerous to me; “merely seeing the snake get’s one’s heart racing” (2004, p.74). Fear represents the core relational theme of ‘dangerous to me’, and “fears track dangers via heart palpitations” (ibid, p.68). Prinz argues that this means perception is sufficient to explain emotion.

Prinz goes on to argue that core relational themes can be directly perceived. He says, “Just as the visual system subdivides into hierarchical pathways for detecting colour, form, motion and position, the somatosensory system subdivides into pathways for detecting textures, shapes, temperature, injuries and core relational themes” (Prinz 2004, p.225). He admits that core relational themes may seem very different from colours, textures and tastes. We consider the latter to be observable properties whereas the former seems not to be observable in the same way. A core relational theme such as ‘a demeaning offense against me and mine’, or ‘facing uncertain, existential threat’, or ‘having transgressed a moral imperative’ can’t be tasted or smelled or touched; these do not seem to be the sort of thing we think of as ‘in the world’ that might be ‘given’ to us directly through perception. But Prinz thinks this is a mistake. The fact that such themes

are relational properties, depending on the subject as well the environment, does not mean that they cannot be directly perceived. “Many other relational properties can be perceived,” he writes. “Consider the property of being about 10 feet away” (ibid, p.226). He concludes that there is no obvious reason to deny that core relational themes are observational properties.

§3.2.2: Challenge from Emotion Differentiation

In the previous chapter I said that feeling theories of emotion were challenged on the basis that bodily feelings aren’t sufficient to differentiate between emotions that feel similar. Disparate emotions like fear, excitement and sexual attraction, can all have similar somatic symptoms. Despite their feeling similar, however, we can usually tell them apart from one another under normal circumstances. On Prinz’s view, emotion is the perception of core relational themes and these themes are represented by bodily feelings. As such, therefore, on his view, the body is the sensory organ of emotional perception. But if that’s the case then Prinz must account for how we differentiate between emotions that feel similar in the body, like fear and excitement. If he cannot do this then his account of emotion as a form of perception can be undermined for much the same reason as the feeling theories were.

Prinz anticipates this challenge and responds to it. He argues that emotions can have cognitive causes and can be differentiated on the basis of those causes. But on his view, the role of cognition is merely contingent. He explains using the example of two emotions which he holds to be somatically similar, anger and jealousy. Prinz argues that

emotion is individuated by its cognitive causes through, what he calls ‘calibration files’. His explanation is inspired by Fred Dretske’s (1986) account of mental representation. Prinz appeals to Dretske’s example of a cough being used as a signal. In this instance something that usually indicates one thing (a tickle in the throat) can be used to indicate another (a signal). “Likewise,” Prinz writes, “an embodied appraisal that usually represents a demeaning offense (anger) may represent an infidelity (jealousy) when used under the direction of the right judgment. We can recalibrate our embodied appraisals to occur under conditions that are somewhat different than those for which they were initially evolved.” (Prinz 2004, p.99).

Prinz suggests that emotion differentiation is explained by different emotions being reliably caused by judgments. He calls the mental mechanism involved in this process ‘calibration files’:

Calibration files are data structures in long-term memory. Every calibration file contains a set of representations that can each causally trigger the same (or similar) patterned bodily responses. The perceptions of the bodily responses caused by representations in a calibration file are emotions. Their content is determined by the representations in a calibration. Emotions do not represent the content of any individual representation in a calibration file but rather the more abstract property that those representations collectively track. The calibration file for jealousy is a collection of representations that can track infidelity. It includes the explicit judgment that one’s lover has been unfaithful. When representations in this file are activated, they trigger a somatic response, and that response triggers an embodied appraisal. If an embodied appraisal just happens to be caused by an isolated judgment on some particular occasion, it is not yet calibrated by that judgment. If an appraisal is reliably caused by a judgment of a certain kind, then it will come to be reliably caused by whatever external conditions are represented by that judgment. For that, we need calibration files.

Prinz 2004, p.100

Prinz uses the notion of the calibration file to circumvent the challenge that emotions

that feel similar might be mistaken for one another. He denies that emotions that feel similar need necessarily be distinct in terms of their embodiment. Regret, remorse and guilt need not be somatically distinct, he argues, because they are the same embodied appraisal, recalibrated by virtue of having different causes. “By establishing new calibration files, an embodied appraisal can be said to represent something beyond what it is evolved to represent. Thus while the set of possible higher cognitive emotions is open-ended, it is not the case that every time we have an embodied appraisal triggered by a different judgment it counts as a distinct emotion” (Prinz 2004, p.100-101).

An obvious objection to this account of cognition as merely causal (and not intrinsic) is foreseen by Prinz. “The distinction between calibrating causes and constitutive causes looks like a cheap trick,” he says. “If a judgment reliably triggers an embodied appraisal to occur, there seems to be little reason to deny that it is part of the resulting emotion” (2004, p.101). Prinz argues that this challenge is based on a false assumption; the assumption that ‘reliably caused’ by a judgment means ‘always caused’ by that judgment. He argues that jealousy may reliably be caused by more than one judgment – ‘that one’s lover is unfaithful’, ‘that one’s lover has been staying overly late at work recently’, ‘that one’s lover smells of someone else’. But instances of jealousy, caused by different judgments, are nevertheless instances of the same emotion. “Instances of jealousy are united not by the fact that they share judgments but by the fact that they share similar somatic states and those somatic states represent infidelity” (2004, p.101). Guilt, remorse and regret, according to Prinz’s theory, are all the embodied appraisals that can be distinguished by the separate calibration files that cause them.

On Prinz’s view, differentiation between emotions can be accounted for by cognitive

calibration files, held in long term memory. These files cause the recognition of an emotional state as being one type rather than another, but they are not part of the emotion itself. Emotion, on this view, may have cognitive causes but it has no cognitive constituents. He concludes that this means emotion can be reduced to perception alone.

But I believe there is another reason to suggest that emotion cannot be reduced to perception. This is because emotion has at least one property that perception does not have. Emotions have higher-orders, while perceptions do not. I will argue that a perceptual account of emotion cannot explain the second order phenomenon of metaemotion. Thus, emotion cannot be reduced to perception.

§3.3: A Property of Emotion not held by Perception

Metaemotions are second order emotions about first order emotional states. For instance, feeling guilty about being happy when so many others aren't. I argue (§3.3.1) that emotion has second-orders but perceptions do not. I anticipate the objection (§3.3.2) that second-order emotions might be explained as emotions that take other emotions as their objects, which conceivably perceptions can also do. I respond (§3.3.3) that second-order emotions have the effect of altering the first-order emotions that they are about. A perception which takes another perception as its object does not alter the initial perception. Metaemotion is relevantly different, therefore, from a perception which takes another perception as its object, and perception alone cannot account for the second-order phenomenon of metaemotion. Emotion has at least one property that

cannot be accounted for by perception. Therefore emotion cannot be reduced to perception.

§3.3.1: Emotions have Second-Orders while Perceptions Do Not.

It is possible to have emotions about one's emotions. For example, it is possible that I might feel annoyed about being jealous when I thought that my tendency to feel jealous was a pattern I'd finally broken. Similarly, its possible to feel guilty about being happy when someone close is going through a tough time. Annoyance about one's jealousy, and guilt about one's happiness, are emotions about emotions or second-order emotions, otherwise known as metaemotions. Second-order emotions have the effect of altering the first order emotions that they are about, such that metaemotion changes the landscape of an emotional experience. Dina Mendonça writes, "metaemotions necessarily have an impact on the value of the first order emotion" (2013 p.394). If I feel guilty about being happy, my guilt has the effect of tempering my happiness – my guilt makes my happiness less wholehearted than it would have been had I not felt guilty about it.

Metaemotion is essentially a learned phenomenon that stems from parental and societal attitudes towards emotions. Hakim-Larson et. al explain that children are taught "deliberately and inadvertently how to label, express, and regulate emotions by their parents and others in their social environment" (2006, p.230). They maintain that how children (and the adults they become) feel about their emotions can be heavily influenced by whether they grew up in a household where emotions were trivialized,

dismissed, and discouraged, or in a household where parents are not just aware of the child's emotions but are actively involved in helping their child to process and integrate those emotions. In short, metaemotion can be thought of as a conditioned or socialised phenomenon, which is learned through familial and societal influence. For instance, a child may learn from family, school, or society, that one ought not to show anger, especially if one is female. This is because anger may be deemed by some to be a 'negative' or 'bad' emotion. 'Negative' or 'bad' in this context refers to the emotion's axiological value rather than its hedonic charge or valence. In simplistic terms the child learns that it is a bad thing to feel angry. As a consequence she may feel ashamed of her anger whenever it arises. Feeling shame about one's anger is something that is learned directly from a parent's or a society's negative reaction to that emotion, as well as indirectly from a parent's attitude towards the same emotion in themselves. If a parent is ashamed of her own anger, then her child will likely grow up in turn feeling ashamed whenever she gets angry.

On my view, emotion's second-orders cannot be accounted for by perception because we do not typically have perceptions about our perceptions. Indeed, the very notion of second-order perceptions seems conceptually incoherent, and as a result it is difficult even to characterise a second-order perception in such a way as to make it comprehensible. For example, imagine that you're listening to a piece of music. This is an instance of first order perception. A second order perception might perhaps be characterised as 'hearing yourself listening to a piece of music'. In this instance 'hearing yourself listening' might be said to constitute a second-order perception. But the notion of 'hearing yourself listening' is not a familiar notion. Even spelled out in this way it remains difficult to comprehend.

We are much more familiar with the notion of second-orders when it comes to cognition. Indeed, cognitions are something that we readily conceive of as having second orders; we can easily conceive of having beliefs about our beliefs, or judgments about our judgments. Metacognition and metaemotion are well recognised phenomena. Meta-perception is not. On my view, this is because perceptions do not have second-orders. But if perceptions do not have second-orders then perception cannot account for metaemotion and hence emotion cannot be reduced to perception alone.

Emotion has second-orders and perception does not. As such, therefore, perception cannot explain metaemotion. If perception cannot explain metaemotion then emotion cannot be reduced to perception.

§3.3.2: A Challenge from Cross-Modal Perception.

A challenge may be raised against my position. It might be argued that metaemotion might be explained as being analogous to cross-modal perception, in which one form of perception can have an altering effect on another. For instance, what one hears while one is eating can have an altering effect on one's flavour perception. Put this way, it is less difficult to conceive of metaemotion in perceptual terms as the challenge will show.

Empirical research²⁷ shows that the taste of food can be modulated by changing the background noise present when a person is eating. For instance, in one study (discussed

²⁷ See Crisinel et al. (2011) and Spence (2012).

in Spence 2012) participants listened to real-time auditory feedback, over headphones, of their own crunching while eating Pringles™. The feedback was altered randomly in terms of loudness and pitch so that some of the sounds participants heard were veridical, some were louder, some softer, and some at a higher or lower pitch. The study found that “participants rated the potato chips as tasting both significantly *crisper* and significantly *fresher* when the overall sound level was increased and/or when just the high frequency sounds above 2kHz were boosted. By contrast the participants rated the crisps as being both staler and softer when the overall sound intensity was reduced and/or when the high frequency sounds associated with their biting in to the potato chip were attenuated instead.” (Spence 2012, p.507; original emphasis). According to Spence the growing body of evidence “clearly demonstrates that what we hear, be it the sound of the food, its packaging, its preparation, or any background noise/music can all impact...on both the sensory-discriminative and hedonic aspects of our flavour experiences” (ibid, p.513).

A challenger may argue that metaemotion is analogous to the sort of cross-modal effect on perception demonstrated in research. On this view feeling guilty about being happy might be explained as one type of emotion (happiness) that is altered by another type of emotion (guilt). This seems analogous to the example in which a token of olfaction (flavour) is altered by a token of audition (e.g. the sound of a crunch). So, according to the challenge, just as sound can alter flavour, one’s perception of guilt can alter one’s perception of happiness. On this view metaemotion may be explained by perception.

§3.3.3: A Response to the Challenge

The challenge is mistaken. Cross-modal perception differs from metaemotion in two important respects, intentionality and awareness.

In the first instance, the research into flavour perception convincingly demonstrates that flavour is a cross-modal form of perception. Which is to say that the flavour of food and drink is not determined by taste alone. Rather it is also influenced by sound, by kinaesthetic properties such as crispness/softness etc., as well as by vision (as in metaphorically ‘eating-with-one’s-eyes’). In short, the research indicates that flavour is a multisensory experience; what one hears when one crunches on a crisp is part of one’s flavour experience. On this basis one would say, quite accurately, that the improved flavour it is *because of* the sound. But the claim ‘that one’s experience of flavour is altered *because of* what one hears’ is entirely different from the claim ‘that one’s experience of flavour is *about* what one hears’. The latter is an intentional claim, the former is not.

Now consider metaemotion. When one feels guilty about one’s happiness, for instance, one does indeed feel guilty because one is happy *and* that guilt does have a modulating effect on one’s happiness. But, unlike cross-modal perceptual effects, one’s guilt has an intentional object; one feels guilty *about* one’s happiness. Metaemotions have intentionality, and cross-modal perceptions are not plausibly intentional in the same way.

Secondly, we are typically unaware of cross-modal perceptual effects. Spence points this out when he writes; “[I]t turns out that most people are typically unaware of the

impact that what they hear has on how they perceive and respond to food and drink” (2012, p.506). So, while it may be true that sound has an altering effect on flavour perception, we are not typically aware of that effect.

When it comes to metaemotion, on the other hand, we can be acutely aware of the altering effect of a second-order emotion. Metaemotion changes the landscape of an emotional experience. When I feel guilty about being happy I do not have the same emotional experience as I would have had if my happiness were unadulterated. I am aware that my happiness is altered by some (non-happy) emotional state, even if I cannot immediately name that altering state. Such awareness makes meta-emotion relevantly different from cross-modal perception. Metaemotion and cross-modal perception differ in terms of intentionality and awareness. Thus metaemotion and cross-modal perception are not analogous, and the challenge fails.

Emotions have second-orders and perceptions do not. Therefore, emotion has at least one property that is not held by perception. As perception alone is not sufficient to explain metaemotion, emotion cannot be reduced to perception.

Chapter Conclusion:

I have argued that the intentionality of emotion supervenes partly on perception; the intentional objects of emotion are perceptual objects. On this basis emotion can be said to be partly perceptual. However, emotion cannot be reduced to perception because emotions have second-orders and perceptions do not. As such, therefore, perception

cannot account for this property of emotion. Thus, emotion has perceptual parts, but emotion cannot be reduced to perception.

This chapter concludes the first part of the argument for my claim that emotion is an ontologically emergent *sui generis* faculty. Next, in the conclusion to Part I, I will sum up my argument so far, and explain why I consider emotion to be a faculty.

Part I Conclusion: The Faculty of Emotion

I have argued that emotion is partly cognitive, that it requires feelings, and that it is partly perceptual. An emotion's type and intensity are determined in part by cognition; an emotion's phenomenological properties are determined by bodily feelings; and the intentionality of emotion is determined in part by perception. I have also shown that emotion is irreducible to any of these constituent parts in isolation because, in each instance, emotion has at least one property not held by that part. Thus emotion meets the first necessary condition for ontological emergence: emotion has mereological parts to which it cannot be reduced.

On my view, emotion is a complex phenomenon. For me, this complexity raises an important question as to how emotion ought to be characterised. Emotion might be characterised as a response to objects and events in the world. But in my view this characterisation is inadequate because it fails to capture the complexity of emotion. Instead, we should countenance an emotional faculty, which groups together a set of related abilities. Putting things this way, my claim that emotion has cognitive and perceptual parts can be understood as the claim that emotional abilities will draw on cognitive and perceptual abilities, and hence that the faculty of emotion will depend on both the faculties of cognition and the faculties of perception. This provides us with a more nuanced understanding of emotion.

A 'faculty' can be understood as a set of related abilities. Our cognitive faculties include: the language faculty, which relates to one's ability to comprehend and produce linguistic utterances; the mathematical faculty, which relates to one's ability to understand numerical patterns and functions; the faculty of pure reason, which relates to

one's ability to think through logical implications; the faculty of practical reason, which relates to one's ability to make decisions that guide one's actions; and so on. We also have perceptual faculties. For instance, spatial ability, which relates to one's ability to recognise and discriminate between different shapes; and auditory ability, which relates to one's ability to process and discriminate between different auditory stimuli.

The notion that our cognitive and perceptual faculties consist in a set of related abilities does not require that any individual ability fit into just one faculty. Neither does it require that faculties be isolated from one another. Emotion draws on both our cognitive and perceptual faculties. For instance, emotion draws on our practical reasoning ability in its evaluations. Fear is an evaluation of threat, jealousy is an evaluation of infidelity etc. These evaluations are not arrived at by fiat. Rather, they involve inference from evidence. The evidence involved can include past experience as well as occurrent objects and events. Emotional evaluations require one's faculties of practical reasoning. In the same vein, the intentional objects of emotion are perceptual objects and hence emotion requires spatial and auditory faculties.

Additionally, characterising emotion as a faculty is in keeping with the notion of emotional intelligence. One definition of emotional intelligence is "*the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions*" (Salovey & Mayer 1990, 189; original emphasis). Emotional intelligence, thus described, is a set of abilities. Emotional intelligence also includes the ability to understand the emotional motivations of oneself and others, which can be a complex task. For instance, I have already pointed out (§2.3.1) that the emotions of one person can elicit emotion in another. I argued that

emotion can be used instrumentally to elicit emotion (I used the example of sadness being used to elicit guilt), with the ultimate aim of achieving one's own ends. It requires a degree of emotional acuity to understand what is going on in such instances, irrespective of whether or not the emotional instrument is genuine.

Emotional abilities, many of which require emotional intelligence, draw on cognitive and perceptual abilities. Considered as a faculty, emotion can be seen as drawing on both the faculties of cognition and the faculties of perception. I propose, therefore, to characterise emotion as a faculty.

I now move to Part II of this thesis, where I argue that emotion demonstrates downward causation; emotion has a causal effect on its cognitive, feeling, and perceptual parts.

Part II

Emotion has a causal effect on its cognitive, feeling and perceptual parts.

Chapter 4: Emotion's Effect on Cognition

We are exhorted to listen to our heads and not our hearts. That this is the case suggests that we intuitively hold emotion to have a causal effect on action. As agents we have a choice in terms of what we do. Thus if emotion has an effect on our actions, then it seems plausible that emotion has an effect on the beliefs and judgments that determine those actions. Hence it is plausible that emotion has a causal effect on cognition. I have argued (Ch.1) that emotion is partly cognitive. In this chapter I will argue that emotion has a causal effect on cognition. I distinguish three cognitive practices on which I argue emotion has a causal effect. These are (§4.1) decision making, (§4.2) cognitive bias, and (§4.3) self-deception. As it might be argued that emotion's effect on these cognitive practices demonstrates only that emotion has an effect on cognition at the macro-level of the emotional faculty, I also argue (§4.4) that token emotions can have a causal effect on cognition.

§4.1: Emotion's Effect on Decision Making

It is a fact of the matter that human beings are capable of irrational decisions. The Darwin Awards²⁸ are testament to this. A recent example from the online press²⁹ might be taken as a case in point. A man in Missouri had been burning rubbish in a field when

²⁸ "The Darwin Awards are a tongue-in-cheek honor, originating in Usenet newsgroup discussions circa 1985. They recognize individuals who have supposedly contributed to human evolution by selecting themselves out of the gene pool via death or sterilization by their own actions." Wikipedia entry: https://en.wikipedia.org/wiki/Darwin_Awards

²⁹ <http://i100.independent.co.uk/article/man-tries-to-put-out-fire-by-repeatedly-driving-over-it-with-van-full-of-guns-and-inadvertently-creates-perfect-analogy-for-western-foreign-policy--W1de56a2we>

the fire got out of hand. The man panicked and tried to put the fire out by repeatedly driving his truck over it. At the time his truck was loaded with firearms and had a full tank of petrol. Not unsurprisingly, the truck itself caught fire and both the ordinance and the petrol tank exploded. Miraculously the man escaped unharmed. The question I deal with in this section is whether or not these kinds of irrational decisions are causally influenced by emotion. Was the Missouri man's panic a causal factor in his unfortunate decision, or might his decision be attributed solely to faulty reasoning? I argue that the former is the case. I will argue (§4.1.1) that we intuitively hold emotion to affect decision making and I present empirical evidence to back up this intuitive claim. I also argue that the adaptive value of an emotion like regret can be explained in terms of its causal role in decision making. I consider (§4.1.2) the challenge from the utilitarian position of Regret Theory that decisions are made on the basis of expected utility and thus determined by reason. So-called irrational choices can be explained as instances of faulty reasoning on this view. I respond (§4.1.3) that even on this utilitarian account, emotion is a factor in the calculation of utility. As such, therefore, the challenge cannot be said to undermine my position.

§4.1.1: Emotion as a Causal Factor in Decision Making

The spurned lover can decide to cause a public scene. The belittled worker can decide to quit. The angry driver can decide to cut someone off at the intersection. We intuitively think that emotion is a causal factor in these sorts of decisions. For instance, we often appeal to emotion when explaining these actions, which would be odd if we didn't think emotion played some role in their causal chain. It is not uncommon, for instance, for the

emotional state of a defendant to be presented as mitigating evidence in their defence. The nature of this defence suggests that barristers believe the defendant whose behaviour can be explained by emotion will be treated with greater lenience. That barristers continue to use this kind of defence suggests that this belief is not false.

Even in cases where we think we make decisions on a purely rational basis, our decisions may nevertheless be influenced by emotion. Take the example of political decisions. One might think that policies and political manifestos are the only factors that might affect one's decision on whom to vote for. But if that were the case then the common practice in politics of 'scaremongering' would make little sense. The recent Labour Party leadership election in the UK is a case in point. Supporters of the three losing candidates largely lobbied on the same claim, to the effect that the front-runner's election would result in Labour losing the general election in 2020. One would like to assume that politicians are rational creatures. If they are, then their stance only makes sense if they expected this claim to result in a loss for the front-runner; they expected fear of losing the 2020 election to influence voters' decisions about whether or not to vote for Jeremy Corbyn. If this was not their expectation then their tactics would make little sense. Fear, it seems, is a political tool. That this is the case demonstrates that we intuitively expect emotion to be a causal factor in decision making.

Our intuitions are not the only reason to hold that emotion is a causal factor in decision making; empirical evidence also suggests that this is the case. This evidence comes not least from instances in which impaired emotional systems result in impaired decision

making. The prefrontal cortex³⁰ is associated primarily with the affective states described as social emotions (embarrassment, shame, guilt, pride etc.), inasmuch as it is thought to be the region of the brain functionally responsible for personality (deYoung et al, 2010) as well as social and interpersonal behaviour (Yang & Raine, 2009). Evidence has shown that when damage occurs in this area, the individual's ability to make rational decisions in personal and social situations is compromised, even in cases where there is no impairment to memory or intellect. An example of the effects of damage to this area of the brain comes from the case of Phineas Gage, which Antonio Damasio (1994) relates in *Descartes' Error*. In 1848, Gage, a construction foreman, suffered an accident in which a metal rod, one and a quarter inches in diameter, passed through his head, entering at his left cheek and existing through the top of his head. The accident did not kill Gage, and neither did it cause him to lose consciousness. He sat upright in the cart that carried him to help, and an hour following the accident he was alert and rational and able to describe the events to the doctor attending him. But while his physical and intellectual abilities remained unchanged following the accident, his personality was so significantly altered that he was unable to resume the life he had lived before.

Gage had previously been described as a balanced individual who was emotionally temperate. Following the accident, however, he became anti-social. He became emotionally unstable, stubborn, quick to anger and swore constantly, which in the mores of the time was considered shocking. His motivation was also affected and although he made many plans for the future, they were all abandoned as soon as they were devised. The damage to Gage's prefrontal cortices "compromised his ability to

³⁰ The prefrontal cortex is broadly subdivided into the orbitofrontal cortex (OFC), dorsolateral prefrontal cortex (DLPFC), ventrolateral prefrontal cortex (VLPFC), and medial prefrontal cortex (MPFC).

plan for the future, to conduct himself according to the social rules he previously had learned, and to decide on the course of action that ultimately would be most advantageous to his survival” (Damasio 1994, p.33).

More recent cases show similar effects. Individuals who had previously been entirely rational in the way they ran their lives began to make personally and socially irrational and disadvantageous decisions following prefrontal cortical damage. It is thought that the damage to this region of the brain is consistently associated with “a disturbance of the ability to decide advantageously in situations involving risk and conflict and a selective reduction of the ability to resonate emotionally in [social] situations” (Damasio 2000, p.41). Research has also concluded that patients with damage to the prefrontal cortex become generally insensitive to future consequences (Bechara et al, 1994). Damasio believes these findings “suggest that selective reduction of emotion is at least as prejudicial for rationality as excessive emotion” (Damasio 2000, p.41). He concludes from this that “[w]ell-targeted and well-deployed emotion seems to be a support system without which the edifice of reason cannot operate properly” (ibid, p.42).

Pathology is not the only source of empirical evidence that emotion is causal in decision making. Prospect Theory (Kahneman & Tversky, 1979) holds that aversion to risk is a causal factor in decisions made under circumstances of risk. Research by De Martino et al. (2006) provides empirical evidence to back up this theory. Participants in the study initially received £50. They were then asked whether they would choose to ‘gamble’ or to ‘stay’. If they gambled, the respondent’s would have a chance of winning or losing the entire amount; if they ‘stayed’, they would keep £20 of the original £50. The study

found that the way that the ‘stay’ option was framed had a significant effect on the subjects’ decisions whether or not to gamble. The ‘stay’ option was framed either as 1) keep £20 – designated the ‘Gain’ frame, or as 2) lose £30 – designated the ‘Loss frame’. Options 1 and 2 obviously represent the same outcome, phrased differently, and yet the “behavioural results indicated that subjects’ decisions were significantly affected by our framing manipulation” (De Martino et al. 2006, p.684). Participants were significantly more likely not to gamble when presented with the Gain frame than when presented with the Loss frame. In other words, the results showed that participants were significantly less likely to risk losing the £50 if they were told that they’d keep £20 by ‘staying’ (gambled 43% of the time), than if they were told that they would lose £30 by ‘staying’ (gambled 62% of the time).

De Martino et al. also measured the participants’ neurological activity in an fMRI scanner while these decisions were made. This allowed the researchers to measure brain activation throughout the test and to identify areas that were more active when participants were influenced by the way the options were framed. The significant differences in amygdala activation prompted the researchers to conclude that the framing effect was the result of “an affect heuristic underwritten by an emotional system” (ibid, p.686).

In addition to our intuitions and the empirical evidence, the nature of some emotions is such that their evolution implies the role of emotion in decision making. Take the example of regret. Regret is a puzzling emotion when you consider that it is an immutable fact, in our world, that one cannot change the past. If emotion evolved for adaptive purposes (and it is plausible that it did) then it seems strange that an emotion

might evolve which is temporally biased more towards the past than the present, or the future. If emotion contributes to survival and adaptation, surely the temporal bias of emotion ought to be in the here and now. To regret the argument I had with my sister last week, or the fourth glass of wine I had at last year's Christmas party, seems strange when it is a fact that I cannot go back and change either of those things. So the adaptive value of regret isn't as immediately obvious as it might be, for instance, in the case of less temporally biased emotions like fear or jealousy.

Fear has adaptive value inasmuch as it motivates me to fight, flee, or freeze, when I find myself in dangerous circumstances, and those who fight, flee, or freeze, are more likely to survive than those who don't. Jealousy has an adaptive value inasmuch as it motivates me to fight for the attention of my mate against potential competitors, and those who successfully keep a mate are more likely to pass on their genes than those who don't. But discerning the adaptive value of regret is more complicated because of its temporal bias. However the ubiquity of regret suggests that it does have some adaptive value. I believe that a plausible adaptive value for regret might be its causal influence on future choices. Regret appears to constitute an affective signal that one has made a mistake. If that's the case then it's plausible that regret evolved because those who learn from their mistakes have a better chance of survival than those who don't. One can be said to have learned from one's mistakes when one makes better decisions; when one is faced with the same set of circumstances and chooses differently. On this basis, a decision to choose differently is determined, at least in part, by one's having learned from one's mistakes. And regret is a causal factor in one's learning from one's mistakes.

In summary, we intuitively believe that emotion has a causal effect on decision making. Evidence from pathology, as well as from studies on decision making, suggest that this intuition is correct. Additionally, the adaptive value of an emotion like regret can be understood in terms of its affect on decision making. It seems reasonable, therefore, to conclude that emotion has a causal effect on decision making.

§4.1.2: Challenge from Utilitarian Regret Theory

Regret Theory (Loomes & Sugden 1982) holds that we make decisions on the basis of the expected utility of the outcome, modified by the potential emotional consequences of our choice. According to Regret Theory we choose the outcome with the highest expected modified utility. The challenge might be raised, on the basis of Regret Theory, that decision making is, therefore, a rational practice unaffected by emotion.

Actions have real-world consequences, including emotional consequences, and Regret Theory suggests that decision making can be explained in terms of the ascription of utility to these consequences. When one makes a choice between two options, the option that was not chosen ceases to be possible. Any emotion resulting from a difference between ‘what is’ and ‘what might have been’ is a consequence of that choice. Take the example of choosing between two job-offers - for instance, between working in a bank or working in a small but promising start-up. If one chooses the job at the bank, the world becomes such that one works at a bank. If one chooses the start-up, the world becomes such that one works in a small but promising start-up. Thus one’s choice has consequences in terms of how one experiences the world. Having

chosen the bank, one might wonder about what one's world might have been like had one chosen the start-up, and vice versa. Regret Theory suggests that the pleasure we can derive from having chosen one option over the other will depend not only on the real-world consequences of that choice, but also on the pleasure we believe we might have derived had we chosen the other option. If the option one did choose is deemed more pleasurable, one might experience happiness or joy. If that option is deemed less pleasurable, however, one will experience regret. On this view, the difference between 'what is' and 'what might have been' can determine whether one rejoices or regrets³¹. Regret theory holds that we factor these emotional consequences into the utility value of our choices – what the authors call 'expected modified utility'. In decision making, the theory suggests, we seek to maximise expected modified utility.

Loomes & Stuben maintain that "Regret Theory rests on two fundamental assumptions: First, that many people experience the sensations that we call regret and rejoicing; and second, that in making decisions under uncertainty, they try to anticipate and take account of those sensations" (1982, p.820). For instance, if one were to apply the utilitarian principles of Regret Theory to the fire-fighting Missouri man, one might hold that his unfortunate decision was due to an inaccurate calculation of his decision's expected modified utility, possibly based on incomplete information. On this basis, his decision was not irrational, nor was it due to his panic, but rather his decision was the result of a failure in reasoning. The man had two choices, he could do nothing or he could attempt to put the fire out. The consequences of his doing nothing might include that the fire would spread, potentially developing into a wildfire. This might have consequences which he could come to regret. His only other option was to use whatever

³¹ There is also the possibility that the consequences of the choice one does make are on a par with the potential consequences of the choice one didn't make, in which case one may feel neutral with respect to one's decision.

means he had to hand to try to put the fire out. As it happens, the only means available to him was his truck. Unfortunately, the Missouri man failed to consider in his reasoning the possibility that his truck would also catch fire. Had he done so, he could have factored that possibility into his decision. No doubt, in that instance, he would have concluded that his regret would be even greater than the regret he would feel from doing nothing. As he failed to realise that his truck could explode, he failed to calculate the expected modified utility of his decision accurately. His failure to realise this can be explained by the limits of his cognitive acuity without any appeal to his panic. The Missouri man's decision resulted from a failure to factor in all possible outcomes and their consequences into his reasoning. Thus his decision was not causally affected by emotion, rather it constitutes a failure in reasoning.

Regret Theory can also predict that the Missouri man will not repeat his mistake. Having experienced the regret of his decision, he will now be in a position to factor this into the expected modified utility of his choices were he to find himself in similar circumstances in the future. On this basis, it can be predicted that he will choose differently. Appealing in this way to the utilitarian principles of Regret Theory shows that so-called irrational decisions may be no more than a failure in reasoning. If that's the case then irrational decisions can be explained without appeal to emotion. Thus, emotion is not a causal factor in decision making.

§4.1.4: Response to the Challenge

I find the utilitarian challenge presented by Regret Theory to be unconvincing for two reasons. First because if emotional consequences are a factor in the determination of the expected modified utility of an outcome, and if expected modified utility is causal in decision making, then by virtue of transitivity, emotion is causal in decision making. And second because I find this approach implausible, especially as applied to the unfortunate decision of the Missouri man.

Regret Theory suggests that our choices are determined *inter alia* by the hedonic value of the emotional consequences of our decisions. And if that's true then emotion plays a causal role in decision making. We seek pleasurable emotional experiences, and we seek to avoid unpleasant ones. In Regret Theory the hedonic value of regret and joy are reflected in the ascription of utility; a lower expected modified utility is ascribed to outcomes that result in regret, and a higher expected modified utility to outcomes that result in joy. The ascription of utility is hedonically motivated. Regret theory suggests that we choose based on the highest expected modified utility. The highest expected modified utility is determined, at least in part, by the hedonic value of the emotional consequences of the decision. By virtue of transitivity, therefore, what we choose is determined, at least in part, by the hedonic value of the emotional consequences of our decisions. The hedonic value of emotion affects decision making. If that's the case then decisions based on expected modified utility are not made on the basis of reason alone, they are also causally affected by the hedonic value of emotion. Hedonic value is a property of emotion. If a property of emotion is a causal factor in decision making then, by extension, emotion is a causal factor in decision making.

Also, in their argument, Loomes & Stuben consider the emotion of regret and suggest that “if an individual does experience such [regretful] feelings, we cannot see how he can be deemed irrational for consistently taking those feelings into account” (1982, p.820). This seems to me to imply that a person who does not experience regret (perhaps for pathological reasons) may not take the potential for feelings of regret into account in their decision making. The person who doesn’t feel regret would plausibly calculate the expected utility of various outcomes on some basis other than the emotional consequences of their decision. If they were to choose differently from a person who *does* take emotional consequences into account, then this difference in choice can be ascribed to the influence of emotion. If that’s the case, then for those who do experience regret, emotion must be a causal factor in the choice they make between different outcomes. Therefore decisions can be causally affected by emotion.

Issues of emotional consequences aside, I believe it is implausible that the Missouri man’s panic did not influence his decision to drive his truck over the fire. The Oxford English Dictionary defines panic as: “A sudden feeling of alarm or fear of sufficient intensity or uncontrollableness as to lead to extravagant or wildly unthinking behaviour” (OED online). Driving over a fire with a truck full of guns and a full tank of petrol seems to me to constitute extravagant and wildly unthinking behaviour. The Missouri man’s decision was the very definition of panicked. I believe it is more plausible that he acted out of panic than that he acted out of a calculation of expected modified utility. Panic can lead to bad decisions, not because the panicked person has failed to take the consequences of their decision into account, but because consequences aren’t even factored in. In a state of panic one acts first and thinks about it afterwards. If anything, panicked decisions epitomise cases in which emotion is the primary causal factor in the

choice of action. Thus, even if emotion were to prove to have little or no causal effect on decisions not resulting from panic, the fact that panic can have any effect at all on choice is sufficient to make my case that emotion can have a causal effect on decision making.

§4.2: Emotion's Effect on Cognitive Bias

In this section I argue that emotion is a causal factor in the development of cognitive bias³².

When one selectively processes information, or interprets ambiguous information in a partial way, one is demonstrating cognitive bias. Some of the information we deal with on a daily basis can be assigned an axiological value, for instance it can be considered to have positive or negative moral worth. Such information can be open to interpretation with regard to the axiological value we can assign to it. Take the example of the growing movement of anti-austerity protests in various countries throughout Europe. For some these protests are seen as a campaign for social justice and a moral good. For others they are seen as anarchy and a moral bad. When consuming news reports about the protests these two groups might select differently in terms of which information they process. For example the 'pro-protest' group might pay more attention to the messages conveyed through speeches and placards, while the 'anti-protest' group might pay more attention to an image of eggs thrown at a politician by protestors. The two

³² In making my argument I mainly limit the examples I use to instances of negative cognitive bias, or 'bias against'. This should not be taken to mean that I believe positive cognitive bias to be unaffected by emotion. Rather, I limit the examples I appeal to because demonstrating that emotion causally affects negative cognitive bias is sufficient to make my argument that emotion causally affects cognitive bias.

groups can also interpret the same information differently. For instance the same photograph of a group of protesters with their fists in the air might be interpreted by the ‘pro-protest’ group as ‘fists held high in solidarity’, and by the ‘anti-protest’ group as ‘fists raised in militant defiance’. What each group pays attention to, and how they interpret what they attend to, will depend on their disposition in favour of, or against, the protest. This sort of selective processing and interpretation of information is otherwise known as cognitive bias. In this section I argue that emotion is a causal factor in cognitive bias. I explain (§4.2.1) the mechanisms underpinning associative learning, and in particular the role played by the explicit and implicit memory systems. I argue that the same systems plausibly underpin cognitive bias. I argue (§4.2.2) that emotion is a causal factor in cognitive bias. I consider the potential challenge (§4.2.3) that cognitive bias is the result of a chain of reasoning and that emotion is incidental to that chain. I respond (§4.2.4) that the irrationality of cognitive bias is not consistent with reasoning as the only causal factor in its formation. The irrationality of cognitive bias can, however, be fully explained if emotion is a causal factor.

§4.2.1: Associative Learning

To be ‘biased’ is to hold an evaluative (positive or negative) stance or attitude. As an evaluation, cognitive bias is necessarily learned. Take the common examples of negative bias seen in racism, sexism, and homophobia. A person who is racist, sexist or homophobic roughly holds the belief that members of these groups are ‘less than’ (less valuable or less worthy) members of the group to which they themselves belong. To form this kind of bias requires that one form evaluative beliefs about what is valuable

and what is worthy. It also requires that one evaluate the value or worth of members of the outgroup on the basis of those evaluative beliefs. On this basis, cognitive bias is necessarily evaluative. But we are not born cognitively biased. For instance, prejudice is not a priori; it is not a fact of the matter like gravity or thermodynamics. Rather, we learn to become prejudiced. Thus cognitive bias is an evaluation that is necessarily learned.

It is thought that one's evaluative attitudes are acquired largely through the workings of implicit or nondeclarative memory (Squire & Dede 2015). Joseph LeDoux maintains that evaluative learning involves "implicit or unconscious processes in two important senses: the learning that occurs does not depend on conscious awareness and, once the learning has taken place, the stimulus does not have to be consciously perceived in order to elicit the conditioned emotional responses" (LeDoux 1998, p.182). The kind of evaluative learning that LeDoux focuses on primarily involves the evaluations of emotion, but I will show that the same learning process is plausibly involved in the learned evaluations of cognitive bias.

LeDoux draws a distinction between implicit, unconscious 'emotional memory' and explicit, declarative, conscious 'memory of an emotion'. On LeDoux's view the implicit and explicit systems can run in parallel. Take the example of a person who has recovered from a car accident, who subsequently feels afraid every time she sits into the driver's seat. In this instance both the implicit and the explicit system may be activated. Because of her traumatic experience, the driver may have come to associate driving with the trauma of the crash. Her implicit emotional memory of that trauma may subsequently be triggered by getting behind the wheel. At the same time, she may also

explicitly remember (and possibly in great detail) that she crashed and she may be reminded of that explicit memory whenever she gets behind the wheel.

But this second, explicit system, isn't necessary to her feeling afraid. LeDoux writes: "The particular fact that the accident was awful is not an emotional memory. It is a declarative [explicit] memory about an emotional experience. It is mediated by the temporal lobe memory system and it has no emotional consequences itself" (1998, p.201). That it is the implicit memory system that is predominant in the crash survivor's subsequent fear response is evidenced by the fact that the absence of explicit memory is no bar to the triggering of that fear. For instance, had the crash survivor suffered amnesia as a result of the crash, she would have no explicit memory of the experience; she would have no 'memory of emotion'. Nevertheless her fear can be triggered every time she attempts to drive. As her explicit memory is not functioning in this case, her implicit association between driving and crashing must be sufficient to trigger her fear. This unconscious system "opens the floodgates of emotional arousal, turning on all the bodily responses associated with fear and defense" (ibid, p.201). Thus, implicit systems are sufficient for evaluative learning.

Ledoux maintains that "without the emotional arousal elicited through the implicit system, the conscious memory would be emotionally flat. But, the co-representation in awareness of the conscious memory and the current emotional arousal give an emotional flavouring to the conscious memory" (Ledoux 1998, p.201). On Ledoux's view, when the crash survivor sits behind the wheel the memory from the past and the current state of arousal become seamlessly fused together so that they form a single unified conscious experience. This unified experience can itself also be converted into

explicit long term memory. This seamless fusing of the past with the current state of arousal can allow new fears to develop. Thus, an implicit emotional memory of fear associated with a specific crash can evolve into a conscious fear of driving in general. That this is the case is evidenced by the fact that the intentional object of this new fear (driving in general) differs from the intentional object of the original fear response (a specific event that occurred while driving).

Jacobs and Nadel (1985) have studied similar learned emotional responses. The authors were struck by the extent to which emotional patterns can become pervasive. Even when an individual is aware of just how irrational their emotional response is, “strong emotional responses continue to be exhibited” (Jacobs and Nadel 1985, p.514). They argue that the acquisition and retention of evaluative learning cannot adequately be explained by classical conditioning³³ and therefore must have some other explanation. Classical conditioning requires repeated exposure to the conditioning stimulus, but in contrast, an evaluative response can be acquired from limited exposure, even in cases in which we have no conscious memory of the stimulating event. “Acquisition seems to just happen, with no specific contingent pairings of the feared stimuli and aversive consequences” (ibid, p.514).

³³ Classical or Pavlovian conditioning originated from the work of Ivan Pavlov (1849-1936). He demonstrated that a neutral stimulus can be made to elicit a pre-reflective response if it is paired with a strong stimulus during a period of ‘conditioning’. In one famous experiment a bell was rung every time food was placed in front of a dog. In this instance the bell was the neutral stimulus and the food was the strong stimulus. The dog would naturally salivate when presented with the food, but over time the dog was conditioned to associate the sound of the bell with the appearance of the food. After a period of conditioning the dog would salivate on hearing the bell, even when no food was presented.

Jacobs and Nadel speculate, from the fact that early childhood trauma can have a lasting detrimental effect on one's life³⁴, even if that trauma isn't remembered, that evaluative learning may mirror the kind of learning seen in infancy. Due to infantile amnesia³⁵, few of our earliest memories are available to us as adults³⁶. This is "a period during which the organism obviously experiences and learns but which is not available to conscious report" (ibid, p.515). If Jacobs and Nadel are correct, it may be that we acquire evaluative learning in much the same way as an infant acquires language skills.

Regardless of the exact mechanisms involved in evaluative learning, as cognitive bias is necessarily a learned evaluation it seems plausible that the implicit systems discussed above are the same systems involved in cognitive bias. Consider an example. Islamophobia is a prejudice towards all Muslims, which has grown following the incidents of September 2001, the subsequent war in the Middle East, and the recent bombings by the militant group, Daesh³⁷. The progression from the events of 9/11, and more recent bombings in Europe, to cognitive bias against Muslims, fits with Ledoux's hypothesis of emotional memory. There seems little doubt that these violent events are traumatic, resulting as they do in myriad emotions including feelings of fear, helplessness, and rage. As such, for many these events can be said to instantiate both an explicit 'memory of emotion' as well as an implicit 'emotional memory'. As discussed, conscious declarative memory is not a necessary requirement for the triggering of an emotional memory. Just as sitting into a car can unconsciously trigger a fear of driving for someone who's been in a crash, seeing someone who looks like those who bomb

³⁴ I will discuss the detrimental effect of early childhood trauma on health in more detail in Chapter 5.

³⁵ This phenomenon refers to the inability of adults to remember events before 2-4 years of age.

³⁶ This may be because the memories are somehow inaccessible or because they don't exist. For more on explanatory theories of infantile amnesia see Howe, M. and Courage, M. (1993).

³⁷ For a report on Islamophobia in the UK see Littler & Feldman (2015).

European cities can unconsciously trigger the same feelings of fear, helplessness and rage. Hence, it seems plausible that implicit systems may be involved in the formation of Islamophobia.

But even if it's the case that the systems underpinning cognitive bias are the same as the systems underpinning affective evaluative learning, this does not substantiate a claim that emotion is a causal factor in cognitive bias. In the next section I will argue for this claim and draw on empirical evidence that demonstrates a causal chain from emotion to prejudice.

§4.2.2: Emotion is a Cause of Cognitive Bias

I contend that emotion is a causal factor in cognitive bias. For example hatred and fear are among the causes of negative cognitive bias, and love and kinship are among the causes of positive cognitive bias. Integrated Threat Theory (Stephen & Stephen 2000) claims that threat causes prejudice. The claim is based on quantitative research, carried out by the authors, into four types of threat which they found to contribute to bias on the part of an ingroup towards an outgroup. These are; realistic threats, symbolic threats, intergroup anxiety and negative stereotypes. Realistic threats are threats to the existence or wellbeing of the ingroup; the authors cite warfare, threats to the ingroup's economic or political power, and threats to the ingroup, or members of the ingroup, in terms of physical or material wellbeing (Stephen & Stephen 2000, p.25). Symbolic threats refer to perceived group differences in terms of morals, values, standards, beliefs and attitudes. As such, the authors hold that symbolic threats are threats to the world-view

of the ingroup (ibid, p.25). Intergroup anxiety refers to concerns about negative outcomes from intergroup interaction, which may result for individual members of the ingroup; examples include embarrassment, rejection, and ridicule (ibid, p.27). And finally, stereotypes are fixed and simplified ideas about a group that serve as a basis for the ingroup's expectations about the behaviour of the outgroup (ibid, p.27).

Research was carried out in three separate states in the USA, with circa 100 participants in each stage of research. The authors found all four perceived threats were accurate predictors of prejudice in all three stages of research (ibid, p.29). Thus the research demonstrated that whether or not one holds an outgroup to pose a threat (in terms of realistic threat, symbolic threat, intergroup anxiety or negative stereotype) is an accurate predictor of whether or not one will hold a prejudice towards that group.

The Steele & Steele research has since been backed up by research carried out by Steele, Parker & Lickel (2015) into threat as a cause of Islamophobia in the USA. This research was carried out among 97 undergraduate students who identified themselves as US citizens who were also non-Muslim. Participants were presented with a 30 second video of a Muslim Cleric either advocating or condemning acts of terrorism. They were led to believe that the videos were actual news clips. The researchers "predicted and found that the high provocation condition [in which terrorism was advocated] resulted in increased bias against and anger toward Muslims" (Steele, Parker & Lickel 2015, p.196). The researchers argue that this research "provides the clearest experimental evidence to date that viewing a vivid threat of terrorism from a Muslim leader does at least temporarily affect people's beliefs and attitudes toward Muslims in general" (ibid, p.198).

The research confirms what may be an intuitive suspicion, that feeling threatened is a causal factor in the development of prejudice or cognitive bias. When members of an ingroup feel that the outgroup poses a threat to their physical, financial or political security, they are more likely to become cognitively biased against that group. When they feel that the outgroup poses a threat to their world-view because they hold different values, beliefs or attitudes, they are more likely to become cognitively biased against that group. When they feel that they risk rejection or ridicule from the outgroup, they are more likely to become cognitively biased. And when they hold negative stereotypes about the outgroup, they are more likely to become cognitively biased against them.

When one feels threatened one can experience myriad emotions including fear, helplessness, despair, outrage, and hatred (Gross et. al. 2013). Unlike merely witnessing a threat, feeling threatened is an emotional state. As bias can result from feeling threatened, it seems plausible that emotion is a causal factor in the development of cognitive bias.

§4.2.3: Challenge from ‘Correlation not Causation’

A challenge might be raised that my argument may mistake correlation for causation. The evidence does not preclude the possibility that emotion in these instances is incidental. It may be that a threat can cause biased cognitive beliefs without any necessary involvement of emotion. Take the example of the threat presented in the

video from Steele et. al. In that video the person posing the threat is Islamic. Given the limits of the information available, a reasonable person cannot assume that all Muslims pose a threat. Neither can that person assume that no Muslims pose a threat. Either assumption is unreasonable given the evidence. Thus the person might reasonably conclude that at least some Muslims pose a threat. Given that the person has no a priori means of discriminating between those who do, and do not, pose a threat, that person might conclude that the rational course of action would be to form the belief that all Muslims pose a *potential* threat. On the basis of this chain of reasoning the person might form a cognitive bias against all Muslims; and *ex hypothesi* against any group deemed to pose a threat. In this scenario emotion is not a necessary link in the causal chain. Even in cases where the cognitively biased person experiences strong emotions, those emotions may be coincidental. Thus while threat might correspond with emotion, this does not mean that emotion is causal in the development of cognitive bias.

§4.2.4: Response to the Challenge

While the challenge might appear *prima face* plausible, it is not; not least because the chain of reasoning presented is flawed. It is a mistake in reasoning to conclude that “all F’s are G”, from the premise that “some F’s are G”. Cognitive bias can be cashed out in terms of the belief that “all F’s are G” – where ‘F’ represents the out group (in this instance Muslims) and ‘G’ represents a property (in this instance, the property of being a terrorist). The chain of reasoning presented in the challenge starts with the premiss that one can reasonably assume that some members of the outgroup are terrorists – i.e. that (P1) “some F’s are G”. This chain reasons that “if some F’s are G”, then (C1)

“every F is a *potential* G”. From (C1) the conclusion is drawn that (C2) therefore “all F’s are G”. This chain of reasoning falls foul of the fallacy of hasty generalisation.

Cognitive bias can also be said to be lacking in reason in terms of its selectivity. This for two reasons: cognitive bias is selective in terms of which groups it singles out, and it is selective in terms of the properties of that group on which it focuses. To see this more clearly let’s use an imaginary example of an American defender of Islamophobia who contends that Islamophobia is rational. Let’s assume that the defender’s reasoning is something like the following: It is rational to be biased against someone who might kill you; Muslims might kill you, therefore it is rational to be biased against Muslims. One of the problems with this line of reasoning is that Muslims are singled out as the only instantiation of the qualifier ‘someone who might kill you’. Now consider that, as of October 2015, there were 994 mass shootings in the US in a period of just 1,004 days³⁸, none of which were attributed to Muslim extremism. And in the period between 2004 and 2013, over 300,000 deaths in the US were attributable to firearms while circa 300 deaths were attributable to terrorism³⁹. It is a fact of the matter that in America you are a thousand times more likely to be killed by a gun-owner than by a terrorist. The Islamophobia defender reasons that it is rational to be biased against someone who might kill you. Given the evidence, and based on this reasoning, cognitive bias against the 39% of Americans who are gun-owners⁴⁰ would be rational. Given its rationality, cognitive bias against gun-owners ought to be widespread in America. But it is not, and Americans vociferously continue to rally against gun control despite the growing number of atrocities that occur almost daily. It is not rational to single out one group as

³⁸ See <http://www.theguardian.com/us-news/ng-interactive/2015/oct/02/mass-shootings-america-gun-violence>

³⁹ Sorce: US Centre for Disease Control and Prevention.

⁴⁰ Source: Gallup poll 2010.

posing a threat, while at the same time wilfully ignoring a group that poses a threat which is a thousand times greater. Due to its being selective in this way, Islamophobia is irrational.

Cognitive bias is also irrationally selective inasmuch as it focuses attention solely on one property of its target - in this instance, the property of 'posing a threat' or 'being a terrorist'. While it may be true that some Muslims pose a threat, it is also true that some Muslims are pacifists, that some Muslims are medics, and that some Muslims are in the US military. Pacifists don't kill, medics save lives, and the function of the US military is to defend its citizens in a time of war. It is irrational to hold that all Muslims pose a threat to US lives when some Muslims are actively saving and defending those lives. Due to its being selective in this way, Islamophobia is irrational.

Cognitive biases like Islamophobia cannot be due solely to reasoning because they run counter to reason in at least two important ways; their purported reasoning is fallacious and they are irrationally selective. This lack of rationality cannot be explained if cognitive bias is causally affected by reason alone. It is necessarily the case, therefore, that something other than reasoning is a causal factor in cognitive bias. Emotion infamously can defy logic and lacks rationality at times. Consider the panicked decision of the Missouri man to drive a truck full of guns and petrol over an out of control fire. Or the panic-selling of stocks or real estate in a time of economic uncertainty, such as occurred in the last major economic crisis in 2008. At that time people sold their assets at considerably less than market value in the phenomenon colloquially referred to as a 'fire-sale'. History tells us that markets and real estate recover once an economic crisis has passed, and history tells us that panic-selling will only worsen the crisis when it

occurs. Divesting oneself of one's assets in panic, therefore, is irrational. But fear and panic are powerful motivators that can defy logic and lead one to make irrational decisions.

Cognitive bias is irrational. Emotion can lead to irrationality. On this basis, the irrationality of cognitive bias can be fully explained by emotion's part in the causal chain in its formation. Thus, emotion has a causal effect on cognitive bias.

There remains one other cognitive practice on which emotion can be said to have a causal effect, self-deception.

§4.3: Emotion's Effect on Self-Deception

Self-deception is philosophically problematic because it seems to require that one hold contradictory beliefs. The problem stems from the treatment of self-deception as being isomorphic with interpersonal deception. Interpersonal deception involves an intentional act in which one believe that P , and convinces another to believe that not- P (or vice versa - one believes that not- P and convinces another that P). In self-deception, the deceiver and the deceived are one and the same. If self-deception is isomorphic with interpersonal deception, then self-deception involves an intentional act in which one believes that P , and convinces oneself to believe that not- P . This treatment of self-deception requires that one hold contradictory beliefs (P and not- P) which is conceptually problematic.

A deflationary view of self-deception (Mele 1997, 2000) holds that instances of self-deception are instances of motivated biased beliefs and are not in fact isomorphic with interpersonal deception. I do not propose to make any commitment with regard to the debate about the nature of self-deception. Instead I propose to concentrate solely on the phenomenon of ‘denial’ - a phenomenon which is commonly characterised as self-deception and which, I will argue (§4.3.1), fits most closely with the deflationary view. I do not defend against a potential charge that denial is not a form of self-deception. Even if denial is not self-deception, properly understood, it is nevertheless cognitive in nature, and my only aim here is to demonstrate that emotion can causally affect cognition. I argue (§4.3.2) that denial is motivated, at least in part, by fear of the emotional consequences of accepting an unpalatable truth. To the extent that denial is motivated by emotion, emotion is a causal factor in denial. I consider the challenge (§4.3.3) that emotion is epiphenomenal in denial. On this view, denial can be fully explained by cognition. I respond (§4.3.3) that the intransigence of denial is not consistent with the notion that denial is caused solely by cognition. The intransigence of denial can be fully explained if emotion plays a causal role. Thus emotion is a causal factor in the form of self-deception commonly referred to as denial.

§4.3.1: Denial and The Problem of Self-Deception

Some truths are unpalatable. Examples might include, the diagnosis of a terminal illness, the idea that one’s spouse is having an affair, the depth of one’s financial difficulties, or the idea that one’s child is a drug addict. Denial is often associated with these sorts of unpalatable truths. When one chooses to believe that one’s spouse is not

having an affair, despite evidence to the contrary, one can be said to be in a state of denial. When one insists that one's financial situation isn't that bad, even when the bailiffs are at the door, one can be said to be in a state of denial. When one continues to believe that one will survive despite the diagnosis of a terminal illness with an overwhelmingly negative prognosis, one can be said to be in a state of denial.

In my view someone in denial 1) holds a biased belief and 2) withholds belief from that biased belief's negation. To understand what I mean by this, it is first worth elaborating that it is possible to have various attitudes towards belief, two of which are of particular importance to my project. Namely, it is possible to withhold belief, and it is possible to have an attitude of desire towards belief.

It is possible to withhold belief; it is possible to withhold belief in a claim, as well as to withhold belief in a claim's negation. Indeed, withholding belief is the ideal attitude to adopt when testing scientific hypotheses. Ideally one ought to remain agnostic with respect to a hypothesis before testing it. Not to do so runs the risk of affecting the way in which one interprets evidence for and against the hypothesis, which in turn runs the risk of biasing the conclusions one draws on the basis of that evidence. In other words, the ability to withhold belief allows one to avoid confirmation bias in scientific theorising. Thomas Gilovich (1991) provides an example of what can happen when one assumes something is true before testing it:

[T]he history of scientific attempts to relate brain size or body shape to intelligence, personality, and (often by implication) 'social worth' is riddled with examples of investigators vigorously challenging and reinterpreting unanticipated results while glossing over similar flaws and ambiguities in more comfortable findings. The French craniologist Paul Broca could not accept that the German brains he examined were on average 100 grams heavier than his sample of French brains. As a consequence, he adjusted the weights of the two brain samples to take into account extraneous factors

such as overall body size that are related to brain weight. However, Broca never made a similar adjustment for his much-discussed difference in the brain sizes of men and women.

Gilovich 1991, p.46

Broca drew the conclusion that men are more intelligent than women on the basis that men's brains are heavier, but he did not take into account the difference in overall body size between men and women. His conclusion that intelligence is determined by gender is a false belief. And it is plausible that his methodological mistake was influenced by a pre-existing belief, widespread at the time, that women were less intelligent than men. Thus it is plausible that his pre-existing belief influenced his erroneous conclusion. This cautionary tale shows that the ability to withhold belief is not just possible, it is essential to good science. Withholding belief is also the attitude that every jury is admonished to adopt before the closing arguments in a trial. During a trial the weight of evidence can pile up on one side or the other, only to shift suddenly with the introduction of new testimony. If one did not withhold belief throughout one could not interpret the evidence fairly and an unjust verdict could be reached. The fact that unfair verdicts *are* reached does not mean that withholding belief is impossible. It merely means that we are not always very good at it.

It is also possible to have an attitude of desire towards belief; it is possible to want something to be true. And it seems that one's wanting something to be true can influence whether or not one actually believes it. Take the example of biased beliefs. Despite evidence to the contrary (994 mass shootings in 1,004 days, over 300,000 shooting deaths in a nine year period) members of the NRA continue to believe that restricting the sale and use of firearms is unwarranted. That this is what they want to believe is evidenced by the way that they treat the evidence of gun violence. The evidence is either downplayed or interpreted to suggest that the situation would be made

worse by gun control. For instance Ben Carson, a candidate for the Republican nomination for President, argued in an interview with CNN⁴¹, that the Holocaust could have been “greatly diminished” were it not for gun control in Germany at the time. The belief that gun control is unwarranted could be characterised as a motivated belief. In the aftermath of a recent mass shooting, Carson stated⁴² “I never saw a body with bullet holes that was more devastating than taking the right to arm ourselves away”. Carson’s belief that gun control is unwarranted seems to be motivated by a desire to uphold the constitution. Believing something which one is motivated to believe is otherwise known as a biased belief.

It is also possible to be biased in one’s beliefs about oneself. Empirical evidence suggests that what one wants to believe about oneself can have an influence on what one actually believes; one is capable of believing what one wants to believe about oneself. For instance, Patricia Cross reports that: “More than 90% of faculty members rate themselves as above average teachers, and two-thirds rate themselves among the top quarter” (Cross 1977, p.1). And Gilovich (1991) tells us that a survey of a million high-school students showed that almost two thirds of them claimed to have above average leadership ability, while only 2% claimed to be below average. In terms of social ability, 60% of the students believed they were in the top 10% of people who get on well with others. Additionally, research carried out by Weinstein & Lachendro (1982) found that students in their research believed that other people were roughly three times more likely than they themselves were to suffer heart attacks, contract lung cancer, be fired from a job, or be divorced within five years. It is not implausible, on the

⁴¹ <http://edition.cnn.com/videos/politics/2015/10/08/ben-carson-gun-control-nazi-germany-intvw-wolf.cnn/video/playlists/ben-carson/>

⁴² <http://www.nytimes.com/politics/first-draft/2015/10/06/ben-carson-says-he-would-have-been-more-aggressive-against-oregon-gunman/>

basis of this evidence, that one's desire to believe something may influence one's tendency to believe it. This should not be taken to imply that we *always* believe what we want to believe. As Gilovich explains; "Our desire to believe comforting things about ourselves and about the world does not mean that we believe willy-nilly what we want to believe...Rather our motivations have their effects more subtly through the ways in which we cognitively process evidence relevant to a given belief" (1991, p.80). By attending to evidence that confirms what one wants to believe, and downplaying, or explaining away, evidence to the contrary, one can maintain a degree of ignorance with regard to whether or not one's belief is actually true.

In my view, denial involves holding a biased belief and withholding belief from its negation. Take the example of someone with a terminal illness. When faced with the diagnosis of a terminal illness, the person diagnosed does not want the diagnosis to be true. She wants to believe that she will not die from this disease. When the doctor tells her that the mortality rate for this kind of illness is 95%, she thinks to herself that she could be among the 5% of people who survive. Why not? After all, someone has to be in the 5%. She knows that medical research advances all the time and that cures can be found every day. She scours the internet looking for stories by, and about, people who've suffered from the same illness. She pays particular attention to accounts about survivors, reading them in detail. When she comes across stories about those who died, she skims over them looking for any evidence that they were different from her – perhaps they ate a different kind of diet from hers, or maybe they drank when she doesn't, or didn't take enough exercise when she has stayed fit for years. Once she finds evidence of difference between herself and the person who died from her disease, she can dismiss their situation as irrelevant to her own. The more she reads, the more she

believes she will survive her illness. This is a classic example of denial, because the truth is that she is almost certain not to survive. And her denial can be explained without appeal to deception. She wants to believe that she will survive, and so she focuses on evidence in favour of that belief and downplays evidence that would contradict it. Thus, she has a biased belief that she will survive and she withholds belief from anything that will negate that biased belief - she simply refuses to believe it.

The challenge might be raised here that her downplaying evidence that contradicts her belief that she will survive indicates that she necessarily believes, if only at a subconscious level, that her biased belief is false. If she believes deep down that she will die then she can be characterised as holding the belief that she will die, and convincing herself that she will not die. In that case, she is engaged in a straightforward act of deception, which is no different from the deception we engage in when we try to deceive others.

I disagree. Her downplaying contrary evidence does not imply that she necessarily believes she is going to die. Her downplaying evidence implies that her belief that she will survive is a biased belief; i.e. it indicates that she wants to believe it. Bias is not isomorphic with deception. She is biased in favour of the belief that she'll survive, and she filters the evidence in accordance with her desired belief. Even if her bias indicates the existence of the possibility that her belief is false, she can nevertheless withhold belief from that possibility, in much the same way as a scientist can withhold belief in the hypothesis she's testing, or a jury can withhold belief in the guilt or innocence of a defendant. Denial, on my view, is not isomorphic with interpersonal deception.

§4.3.2: Emotion as a cause of Denial

Denial, as mentioned, is commonly associated with unpalatable truths. And unpalatable truths are unpalatable for a reason. It can be psychologically or materially disadvantageous for an individual to believe an unpalatable truth, not least because accepting the truth involves making oneself vulnerable to the potentially negative impact of the truth. For example, a parent who finally accepts that their child is a drug addict can no longer sleep in blissful ignorance. Having accepted the unpalatable truth, it's not uncommon for that parent to wonder where and how they failed their child. It's not uncommon that they experience feelings of shame, guilt and fear. These emotions can potentially be overwhelming and few of us relish being so overwhelmed. The benefit of denial is that it avoids the negative impact of the truth.

Take another example, that of a spouse who finally accepts that their partner is having an affair. In this instance the unpalatable truth can result in divorce. Divorce, as anyone like me who's been through it can attest to, can be excruciatingly painful. Feelings of heartbreak, rejection, fear, anger, and despair are just some of its overwhelming emotional consequences. Divorce also has material consequences. When one goes from dual income to single income, one can potentially no longer afford the home one shared with one's partner. When one adds the stress of having to sell up and move to the overwhelming emotions already at play, the results can be devastating. And this is all before taking any children of the marriage into account. When there are children involved, one also has to worry about the negative impact on their psychological and emotional wellbeing. On this account it is little wonder that denial is preferable.

The denial of unpalatable truths is sometimes necessary to the psychological or material wellbeing of the individual when acceptance of the truth can have a negative impact. The negative impact of unpalatable truths on our emotional state is not inconsiderable and can in fact be overwhelming. And just as it is possible to be risk averse, it is also possible to have an aversion to painful emotional states. People have been known to stay in dysfunctional relationships because of their aversion towards loneliness. Aversion towards shame can keep a person from stealing when there's a chance they might be caught out. Aversion towards guilt can keep a person from leaving home when their ailing parents want them to stay. It is plausible, therefore, that denial is caused in part by an aversion to the painful impact of the truth; aversion towards heartbreak, aversion towards fear, and aversion towards despair. Such aversion need not be conscious; one need not be conscious of one's aversion to loneliness, or guilt or heartbreak etc. in order for that aversion to have a causal affect. Just as risk aversion can unconsciously affect one's decision not to gamble, aversion to painful emotions can have an unconscious effect on denial.

It is worth noting that one should not confuse aversion with the notion of 'a desire to avoid'. Firstly, desire is not aversive. Secondly, one can have a desire to avoid something, such as the desire to avoid ice-cream when on a diet, without necessarily being averse to that thing. Aversion might roughly be described as a feeling of intense dislike or repugnance towards something. When one has an aversion to painful emotions, the desire to avoid such emotions may come about as a result, but the desire to avoid is not sufficient to describe one's aversion. Aversion is an affective state. And if denial is caused in part by aversion then emotion is a causal factor in denial.

§4.3.3: An Epiphenomenal Challenge

The challenge might be raised that denial can be explained by cognition alone. On this view, appeal to emotion as a causal factor constitutes an overdetermination of denial. For instance, Jerome Schaffer (1983) argues, emotion is superfluous to behaviour and to cognition. On his view emotion is much like the whistle of a steam train that contributes nothing to its locomotion⁴³. He gives the example of careening around the corner in a car, only to find the road blocked by a log. As well as believing bodily harm to be likely and desiring not to be harmed, he feels fear – his heart races, his throat constricts. But, he says, his belief and desire alone are sufficient for him to slam on the brakes and bring the car to a halt; his fear, he argues, is superfluous and has no causal role in his braking. “My slamming on the brakes and stopping is a result not of the turning pale, accelerated heart beat, or sensation of my stomach tightening but simply of my seeing the log, judging that harm is likely and desiring not to be harmed” (Schaffer 1983, p.163).

Schaffer also argues that, in addition to having no effect on action, emotion has no effect on cognition. He gives an example of two soldiers in a war, one feels fear and the other doesn't but both continue to fight. “Certainly,” he says, “it is possible that someone in battle might have exactly the same beliefs and desires as those around him and still, unlike the others, feel no fear” (1983, p.163). He concludes that if one can have exactly the beliefs and desires of the fearful soldier and yet feel no fear, then fear makes no necessary contribution to one's beliefs and desires.

⁴³ This is the analogy that Thomas Huxley (1874) drew when he argued that mental events are epiphenomenal.

Emotion, it might be argued, may be equally superfluous in denial. Take, for instance, the denial that one's spouse is having an affair. If one's spouse is having an affair then acceptance of that fact might lead to divorce. One might believe divorce to be a bad thing for oneself, for one's children and for one's financial security. One might, therefore, desire that one's marriage not end in divorce. One's belief that divorce is a bad thing and one's desire that one's marriage not end in divorce are sufficient to explain one's denial of the affair. In this instance, one's denial is a rational response and any emotional consequences of the truth are superfluous to that denial.

This potential challenge to my account might also argue that denial of death can be explained purely by appeal to rationality. For instance, Thomas Nagel (1970) writes that "life is all one has and the loss of it is the greatest loss one can sustain" (1970, p.73). He argues that life is an intrinsic good⁴⁴. And, "like most goods, this one can be multiplied by time; more is better than less" (ibid, p.74). It is rational to want more life rather than less. Thus denial of death is rational. Denial in the face of death can be explained purely by appeal to reason. If one can explain denial without appeal to emotion, then emotion is superfluous to denial. Emotion is not a causal factor in denial.

⁴⁴ Nagel's argument is made in a challenge to Epicurus(341-270 B.C.E.) and Lucretius (circa 99-55 B.C.E.). Epicurus argues that death isn't a bad thing. In his view, pain is the only intrinsic bad or evil. When one is dead one has no awareness and feels no pain. He argues that if pain is the only intrinsic bad, and if one feels no pain when one is dead, then death is not a bad thing. Lucretius provides a similar argument in *On The Nature of Things*. He claims that death is nothing to fear because a person ceases to exist when they die and a person who doesn't exist cannot be unhappy. Lucretius' goes on to argue that in the respect of non-existence, being dead is no different from not having been born. One doesn't consider the fact that one wasn't born earlier as anything to be feared. As the prenatal and posthumous states are symmetrical, it is illogical that one would fear dying.

§4.3.4: Response to the challenge

I find the challenge implausible for three reasons. First, if the truth is undesirable then it is usually undesirable for more than merely material or practical reasons. Second, reason alone cannot explain the fact that evidence is not treated equally in cases of denial. And third, the intransigence of denial cannot be explained by reason alone.

Nagel points out that “doubt may be raised whether *anything* can be bad for a man without being positively unpleasant to him: specifically, it may be doubted that there are any evils which consist merely in the deprivation or absence of goods, and which do not depend on someone’s *minding* that deprivation” (Nagel 1970, p.75-76; original emphasis). Thus, when the challenge suggests that a spouse’s denial can be fully explained by a belief that divorce is a bad thing, one has to question the basis on which divorce in this instance is deemed to be bad. It is implausible that divorce is bad purely on material or practical grounds. If the only reasons a person might be in denial about their spouse’s affair were material or practical then the very rich would never experience this sort of denial; the loss of a second income wouldn’t result in material hardship and they could hire professionals to deal with any practical concerns, such as child care etc. But this kind of denial is not limited to people of limited means. Thus, the undesirability of divorce must extend beyond its material or practical consequences. If that undesirability extends to emotional consequences then emotion is not superfluous in denial.

Also, were reason the only causal factor in denial then one would expect that even the most unpalatable of truths would be accepted if the balance of evidence was in their favour. But that doesn't seem to happen. Instead it seems that there is a difference in the threshold, above which a person will accept a premise, between evidence against an unpalatable truth and evidence in its favour. The person who is in denial of her terminal illness will have a lower threshold for evidence that she will survive and a higher threshold for evidence that she will die; she'll believe evidence for the former more easily than evidence for the latter. As such, not all evidence is treated equally. This inequality in the way evidence is treated cannot be explained if reason is the only causal factor in denial, because reason dictates that relevantly equal evidence should be treated equally. The fact that it is not treated equally suggests that denial lacks rationality in much the same way as the cognitive bias discussed in §4.2 can be said to lack rationality; in cognitive bias against an outgroup one is more likely to process information that confirms one's bias and less likely to process information disconfirming it.

Finally denial, as with other forms of self-deception, is intransigent by definition. When one is in denial, one continues to believe something despite the existence of substantial evidence to the contrary. Such intransigence cannot be explained by appeal to reason alone, because reason dictates that if one is provided with sufficient evidence that one's beliefs are false then one could not continue to hold that false belief. In cases of denial the evidence can be overwhelmingly in favour of one's belief's being false and yet one can continue to hold one's false belief. The fact that, in denial, one can continue to believe something despite substantial evidence to the contrary suggests that cognition is not the only causal factor in denial.

They say that ignorance is bliss, and given the negative consequences of accepting an unpalatable truth, ‘they’ are probably right. When we choose to remain ignorant of the truth we protect ourselves from the negative consequences of the truth. Significant among those consequences is the negative impact that an unpalatable truth can have on emotion. When we are in denial we can avoid the adverse emotional impact of heartbreak, fear and despair that comes with accepting the truth. When we are in denial we can remain blissful. We have a lower threshold for evidence that allows us to remain in bliss, and a higher threshold for evidence that will break our hearts. It seems implausible on this basis that the difference in emotional outcomes is superfluous to one’s being in denial. And certainly the intransigence of denial suggests that it is not. Emotion is not superfluous to denial.

Denial shares certain parallels both with decision making and with cognitive bias. Just as decision making can be affected by an aversion to risk, denial can be affected by an aversion to painful emotions. Just as cognitive bias is selective in terms of the information it interprets, denial is selective in terms of the weight it gives to evidence. And denial, like panicked decisions, and cognitive bias, lacks rationality. Hence, just as certain aspects of decision making and cognitive bias cannot be accounted for by reason alone, neither can similar aspects of denial. These aspects of denial can, however, be fully accounted for if emotion is a causal factor in denial. Emotion has a causal effect on denial.

It may be thought that my arguments so far demonstrate only that emotion has a causal effect on cognition at the macro-level of the emotional faculty. If emotion truly has a

downward causal effect that effect ought to be demonstrable at the level of the individual emotion. In the next section I argue that individual emotions can have a causal effect on cognition.

§4.4: Causal Effect of an Individual Token of Emotion on Cognition

Emotions can be reasons for action. We perform acts of kindness for those we love; we retaliate out of anger against those who offend us; we lash out at those whom we fear. These can be said to be actions that are caused by emotion inasmuch as the emotion involved constituted the primary reason for that action. If a token of emotion can cause an action, by virtue of being the primary reason for that action, then emotion can be said to have a downward causal effect on cognition.

Consider the everyday example of someone (subject A) who non-accidentally honks her horn at another driver (subject B) who refuses to give way in traffic. If she were to be asked: “Why did you honk your horn?” A’s potential response might be: “Because I was angry that B wouldn’t give way”. In this instance A’s anger can be accepted as the primary reason for her honking her horn. If A’s anger is the primary reason for her action, it can be characterised as a rationalising reason for her action; i.e. a reason which makes her action intelligible. Donald Davidson argues that rationalising reasons are “a species of causal explanation” (1963, p.691). He holds that whenever someone does something for a reason they can be characterised as “(a) having some sort of pro attitude toward actions of a certain kind, and (b) believing (or knowing, perceiving, noticing, remembering) that his action is of that kind” (ibid, p.685). On this Davidsonian view, it

is plausible that A's honking her horn was caused by her anger in the following way: A's honking was a retaliatory action, an action that signalled her displeasure with B's refusal to give way. It is plausible that A's anger caused her to have a pro attitude towards an act of retaliation. Coupled with her belief that honking her horn was an action of this kind (an act retaliation), A's honking her horn can plausibly be characterised as A's acting for a reason. Davidson writes that: "Central to the relation between a reason and an action it explains is the idea that the agent performed the action *because* he had the reason" (1963, p.691). A honked her horn because she was angry with B. As such, therefore, A's anger is a primary reason for her non-accidentally honking her horn. And as reasons are a species of causal explanation, A's anger can be characterised as having caused her action. If A's anger is the primary reason for her action then A's anger can be said to have causally affected her reasoning; i.e. A's anger causally affected her cognition.

A challenge may be raised against my characterisation of A's anger as the cause of her honking her horn. A challenger might argue that the cause of A's action was B's refusal to give way and not, as I have claimed, A's anger at B's refusal to give way. On this view B first refused to give way, and that event caused A to honk her horn. According to this challenge it was the preceding event, and not A's emotion, that caused A's action⁴⁵. If B's refusal to give way was sufficient to cause A to honk her horn, then A's anger was epiphenomenal, and hence had no causal role in her action.

But the challenge is unconvincing. While it is certainly the case that B's refusal to give way was a causal factor in A's honking her horn, it was merely one factor in a causal

⁴⁵ This is akin to the objection considered by Davidson in his argument that reasons can be causes (Davidson 1963, p.695).

chain. I say this because reliance on the preceding event, as solely explanatory of A's action, results in an underdetermination of that action. To see this more clearly, consider another person (Subject C) who is also cut off by B's refusal to give way in traffic. Unlike A, C's response to B's act is to shake her head wryly and wonder at the stresses of modern life which might lead to B's behaving so ungraciously. Unlike A, C does not honk her horn. While it might be accepted that C's is a less commonplace reaction to being cut off in traffic than A's, her reaction is nevertheless fully comprehensible. By introducing C it becomes evident that the event of B's refusal to give way is not sufficient to explain A's honking her horn.

If the same event can lead to A's honking, and C's not-honking, then we naturally want to know the reason for that difference. It is plausible that the reason for the difference in action was because A was angry and C was not. If the difference in action can be explained by appeal to A's anger, then the fact of A's anger is necessary to a full explanation of A's action. Therefore, A's anger is plausibly a causal factor in A's action of honking her horn.

Acting for a reason involves reasoning, and as reasoning is a species of cognition. As A's anger causally affects her reasoning, then A's anger can be said to causally affect her cognition. On this basis, an individual emotion can have a causal effect on cognition.

Chapter Conclusion:

I have argued that emotion has an effect on decision making, on cognitive bias, and on the form of self-deception commonly referred to as denial.

I argued that the notion that decisions are affected by emotion is an intuitive one and I presented empirical evidence to back up that intuition. I considered whether a utilitarian approach could fully explain decision making and thus render my argument unsound. I responded that even this utilitarian approach factors emotion into the calculation of utility and thus fails to undermine my argument. Emotion has a causal effect on decision making.

I argued that emotion is a causal factor in cognitive bias and presented empirical evidence that bias against an outgroup is determined by the various kinds of threat that outgroup is deemed to pose. I considered the challenge that bias could be explained as a mistake in reasoning, and that my argument mistakes a correlation between emotion and bias for emotion as a cause of bias. I responded that bias lacks rationality and that this lack of rationality cannot be explained if bias is affected by reason alone. The same rationality can be explained if emotion is a causal factor. Emotion has a causal effect on cognitive bias.

I argued that emotion is a causal factor in the form of self-deception commonly referred to as denial. I argued that the denial of unpalatable truths is beneficial as a buffer against the negative emotional consequences of the truth. I argued that denial is motivated by aversion to painful emotion and therefore emotion is a causal factor in denial. I considered the challenge that denial can be fully explained by reason and therefore

emotion is superfluous to denial. I responded that reason alone cannot explain the unequal way in which evidence is treated in cases of denial, and neither can it explain denial's intransigence. As both of these factors can be explained by emotion then emotion is a causal factor in denial. Emotion has a causal effect on denial.

Finally, in anticipation of a potential challenge that my arguments demonstrate only that the emotional faculty has an effect on cognition, I argued that an individual emotion such as anger can have a causal effect on cognition. I argued that anger can be a rationalising reason for an act of retaliation. As rationalising reasons can be causes, anger can be a cause for action.

In Chapter 1, I argued that emotion is partly cognitive. In this chapter I argued that emotion has a causal effect on cognition. Downward causation is the term used to describe instances in which a system has causal effect on its parts. As emotion is partly cognitive, and as emotion has causal effect on cognition, then emotion demonstrates downward causation.

In the next chapter I will argue that emotion also has causal effect on another of its mereological parts, namely feelings.

Chapter 5: The Effect of Emotion on Feelings

In this chapter I will argue that emotion can have a downward causal effect on feelings, both at a macro-level of the emotional faculty and at the level of individual emotions. At the macro-level, I will argue (§5.1) that emotion can have a causal effect on the character of one's life in terms of its happiness or unhappiness. At the level of the individual emotion I will argue (§5.2) that a token of an emotional type can causally affect one's feelings about, or towards, oneself.

§5.1: Emotion's Effect on Happiness

In this section I argue that emotion has a causal effect on the happiness⁴⁶ or unhappiness of one's life. In this, when I talk about someone as having, or aspiring to have, a happy life, the happiness I refer to is not the happiness associated with particular events, as in someone who feels happy that the sun is shining. Rather, I mean 'happiness' to refer to the character of one's life or what Sizer (2010) calls 'global happiness'. This is happiness associated "with significant spans of time, entire lives, and hoped-for futures" (Sizer 2010, p.134). I argue (§5.1.1) that unresolved emotional issues are a barrier to a happy life, and a causal factor in an unhappy one. I consider the potential challenge (§5.1.2) from moral philosophy that self-respect is the main arbiter of happiness. On

⁴⁶ I am concerned exclusively with happiness in the psychological sense of that term. I make no claims with regard to the Aristotelian sense of happiness as of leading a virtuous, successful or enviable life. For more on the distinctions between the different meanings of 'happiness' see Haybron (2000).

this view it is one's level of self-respect, and not emotion, which causally affects the character of one's life as being happy or unhappy. I respond (§5.1.3) that self-respect is causally affected by unresolved emotional issues. Thus, even if the challenge is correct, emotion is nevertheless part of the causal chain affecting the character of one's life in terms of its happiness or unhappiness.

§5.1.1: Emotion's Effect on the Character of One's Life

I have never met a person who doesn't 'beat themselves up' for one thing or another. For instance, I've never met a person who doesn't give themselves a hard time for not living up to some expectation of perfection, or success, that they've been conditioned to believe is important; or who doesn't mentally criticise themselves (sometimes quite harshly) for not being good enough, or clever enough, or for behaving in ways that might make them look bad in the eyes of others. In other words, I have never met a person who is without the types of unresolved emotional issues that lead to this kind of internal unrest. This is not to say that such a person doesn't exist, but if they do exist then they seem not to be in the majority.

What I mean by an 'emotional issue' is a past emotional hurt; for instance rejection or humiliation. When I call an emotional issue 'unresolved', I mean that the emotional pain caused by the past hurt continues to persist; which is to say that the same emotional pain will be re-experienced whenever circumstances arise that are reminiscent of those in which the hurt originated. I call an emotional issue 'resolved' when the same circumstances no longer result in emotional pain.

It is useful to understand how unresolved emotional issues might arise. Attachment Theory⁴⁷ suggests that we develop internal working models on the basis of early emotional experience with primary caregivers. These internalised models represent oneself and one's caregiver, as well as the dynamics of the interaction between the two. For instance, it is thought that "if an individual has experienced a rejecting relationship with a primary caregiver, the working model of the rejecting parent is likely to be complemented by a working model of self as unlovable" (Bretherton 1990, p.239-240). Thus, according to Attachment Theory it is possible for a child to see herself as unlovable in the eyes of a primary caregiver and hence to come to believe herself to be unlovable. John Bowlby (1969) suggests that rejecting parents were likely themselves rejected, so the same internalised model may be handed down through the generations.

Although the model doesn't deal specifically with events outside of the home, it seems reasonable that early experiences in the schoolyard and in the playground will also have an impact on a child's internalised models. Rejection and humiliation of children by children is hardly an uncommon occurrence, and emotionally overwhelming experiences like these can have lasting effects. As the child grows up, their internalised model can become the standard for other attachment relationships in their life. For instance, a rejected child can grow up to expect rejection in all of their relationships. One possible effect of this is that they may become anxious or 'clingy' in their adult attachments. If this happens, the person may then be prone to worries about being liked or popular enough. They may also develop behavioural patterns consistent with the

⁴⁷ Attachment theory was first developed by John Bowlby (1907-1990). The theory explains how early relationships (primarily with caregivers) affect one's interpersonal relationships over the long term and in particular one's ability to develop trust. It is speculated that there are four basic attachment styles – secure, anxious-ambivalent, anxious-avoidant, and disorganised. See Bowlby (1969).

archetypal ‘people-pleaser’. Alternatively, the rejected child may become aversive and resist forming close bonds for fear of further rejection. This person may develop behavioural patterns consistent with the archetypal ‘commitment-phobe’. The tendency to cling to relationships, and the tendency to avoid relationships, may seem contradictory responses to rejection, but in fact they represent two sides of the same internal model, i.e. the expectation of rejection.

Schank and Abelson (1977) describe these internalised models as ‘scripts’ and suggest that ‘script-relevant’ events result in new instantiations of the same script. So, on their view, the ‘rejection script’ might be re-instantiated numerous times in a person’s lifetime albeit with a different person playing the role of the rejecter each time. In this way the same emotional themes can play out over and over again in that individual’s life. Richard Lazarus maintains that “many or even most emotional encounters are repetitions of relational troubles and triumphs of the past, which are central to the person rather than peripheral and which involve basic adaptational themes, such as being loved or rejected, being powerful or powerless, or overcoming or being traumatised by adversity, loyalty or treachery, loss or gain, failure or success, and the like, even if the connection is not at all obvious” (Lazarus 1991, p.110).

It seems that the scripts associated with unresolved emotional issues reappear repeatedly until such time as the emotional issue is resolved. For example, Stephen Diamond (2008) writes that “one of the most common phenomena psychotherapists deal with is a chronic pattern of dysfunctional relationships. The person’s partners share consistent similarities, such as physical and/or emotional abuse, instability, narcissism, etc. And each relationship eventually ends badly because of these repetitive dynamics”. Sigmund

Freud (1920) referred to this phenomenon of repeating patterns, caused by unresolved emotional issues, as ‘repetition compulsion’. Repetition compulsion might roughly be characterised as the tendency to repeat, in one’s current experience, repressed emotional material from one’s past. Freud likened repetition compulsion to the migratory patterns of birds and fish in which the same territory is traversed in an oscillating pattern.

Now consider the ordinary person you might pass on the street. I am talking here about someone with a job, a home, friends, a family, someone who enjoys a good night out, or taking a holiday, or going to the movies. Chances are that this person will have some unresolved emotional issues resulting from a negative internalised model or ‘script’ adopted from an early age. For instance they might have an internal script that says that they’re not strong enough, or not clever enough, or not good enough, or not popular enough, or not successful enough, or not interesting enough, or not generous enough, or not thin enough, or not enough in control, or that they are unlovable. Indeed, it seems as if the number of ways in which a person can believe that they’re not enough may potentially be as large as the number of people you’ll pass on the street.

These beliefs about oneself as being unlovable, or not enough in some way, can causally affect the character of one’s life in terms of its happiness. If one’s internal script is that one is unlovable then that script will be triggered whenever circumstances arise that are reminiscent of the circumstances in which that script was first learned. For instance, if one was rejected in the schoolyard, or the playground, then the rejection script can be triggered by social occasions or in friendships. If one was rejected by a primary caregiver then the rejection script can be triggered by intimate relationships.

The triggering of an internal model like the rejection script can result in fears about abandonment and the re-experiencing of feelings of rejection.

Nico Frijda (1988) formulated what he calls ‘The Laws of Emotion’⁴⁸, amongst which is ‘The Law of Conservation of Emotional Momentum’:

Emotional events retain their power to elicit emotions indefinitely, unless counteracted by repetitive exposures that permit extinction or habituation, to the extent that these are possible.

Frijda, 1988, p. 354.

Unresolved emotional issues can cause emotions to arise, as if fresh, years after the emotional events that elicited them. And, unlike physical pain, emotional pain is re-felt when it is remembered. Physical pain is typically remembered episodically but not phenomenologically; we typically remember only *that* we experienced physical pain, the pain itself is not re-felt when remembered. But emotional pain is remembered phenomenologically as well as episodically. Thus the triggering of an internal script can be a painful experience every time that triggering occurs. And unfortunately, it is not unusual for the rejection script to become a self-fulfilling prophesy. Fearing rejection, the person holds on to the relationship too tightly and is rejected for being too ‘clingy’.

⁴⁸ The Laws of Emotion from Frijda (1988) are: The Law of Situational Meaning (“Emotions arise in response to the meaning structures of given situations” p.349); The Law of Concern (“Emotions arise in response to events that are important to the individual’s goals, motives or concerns” p.351); The Law of Apparent Reality (“Emotions are elicited by events appraised as real, and their intensity corresponds to the degree to which this is the case” p.352); The Laws of Change, Habituation and Comparative Feeling (“Emotions are elicited not so much by the presence of favorable or unfavorable conditions but by actual or expected changes in favorable or unfavorable conditions” p.353); The Law of Hedonic Asymmetry (“Pleasure is always contingent upon change and disappears with continuous satisfaction. Pain may persist under persisting adverse conditions” p.353); The Law of Closure (“Emotions tend to be closed to judgments of relativity of impact and to the requirements of goals other than their own” p.354); The Law of Care for Consequences (“Every emotional impulse elicits a secondary impulse that tends to modify it in view of its possible consequences” p.355); The Laws of the Lightest Load and the Greatest Gain (“Whenever a situation can be viewed in alternative ways, a tendency exists to view it in a way that minimizes negative emotional load” [and/or] “maximizes emotional gain” p.356).

Or, fearing rejection, the person avoids committing themselves to the relationship and is rejected for being too 'cold'. In this way it is possible to go from friendship to friendship, or from relationship to relationship, and yet still replay the same emotional script, with the same emotional outcome. In this way, the unresolved emotional issue becomes a barrier to living a happy life and a causal factor in one's unhappiness.

There is another way in which I believe unresolved emotional issues impact on the character of one's life, and that is in the way that one feels towards other people. Freud (1920) believed that repetition compulsion underlies the psychological phenomenon known as 'Projection'. This phenomenon refers to the practice of attributing troubling emotional or psychological aspects of oneself to others. Carl Jung (1875-1961) referred to the projected parts of the self as 'shadow aspects' because they are outside the 'light' of the conscious mind, i.e. they are emotional issues about which we may remain consciously oblivious, even while repeatedly projecting them onto others.

The term 'shadow' is not intended to denote negative value; the difficult aspects of self that are 'cast' into the shadow aren't always ones which might be termed 'bad'. For instance, a child who grows up in a household in which emotions are treated with derision or suspicion, might come to believe that they will be rejected or humiliated if they show emotion. Indeed, if emotions are treated with derision by the household then they are correct in their belief. As a simple matter of self-preservation, therefore, it becomes necessary for the child to suppress their emotions. In Jungian terms, it becomes necessary that they 'cast' their emotions 'into the shadow'. When a part of oneself is cast into the shadow like this, reminders of that part can engender panic and result in emotional pain; after all, the part is still there it has merely been repressed. It is

not difficult to imagine that a person who has repressed her emotions, as a matter of self-preservation, might be afraid that those repressed emotions could suddenly emerge and overwhelm her, leading eventually to her rejection or humiliation.

The behaviours of others can be strong reminders of the repressed parts of ourselves. When another behaves in a way that reminds us of our repressed parts, when they behave in a way that we have prohibited ourselves from behaving, this can trigger feelings of discomfort and even panic. So for instance, the person who has repressed her emotions may feel very uncomfortable when someone else talks about, or shows, their feelings. The more uncomfortable she feels, the more likely it is that she will deride the other as being 'emotional'. This derision is a reflection of the distress caused by the suppression of her own emotions. But being unaware of this in herself, the repressor can assume that she just doesn't like 'emotional people'. She may indeed become hypersensitive to 'emotional people' and she may develop feelings of instant dislike for anyone who potentially has this characteristic. In doing this, the repressor has effectively 'projected' a part of themselves onto another. Repression and projection indicate that a person has issues of self-acceptance. The lower one's level of self-acceptance, the more likely one is to suffer internal unrest, and the less likely one is to have a happy life

Consider another example. For some the body can be a source of shame, most especially in our modern society where enormous emphasis is placed on being thin (sometimes to the point of morbidity). In our society being overweight is equated with being lazy, ugly, and generally worthy of derision. It is little wonder, therefore, that someone might develop the belief that they will be rejected or humiliated if they do not

watch their weight. Indeed, as overweight people are so often treated with derision by the media, and by Western society in general, then they are correct in their belief. As a simple matter of self-preservation, therefore, it may become necessary for a person to suppress the part of them that would wish to nourish themselves. As with the earlier example, reminders of that part can engender panic and result in emotional pain. Again, it is not difficult to imagine that a person who has repressed this part of herself, as a matter of self-preservation, might be afraid that the repressed part could suddenly emerge. If that were to happen, if she were to throw caution to the wind and just eat, then she would risk putting on weight, and ultimately being rejected or humiliated.

Again, as before, the behaviours of others can be strong reminders of the repressed parts of ourselves. For the person who has repressed the part of them that wishes to nourish themselves, seeing someone who is overweight can be a strong reminder of their own repression. This reminder can lead to panic and distress. As a result the repressor can experience strong feelings of dislike for anyone who is overweight. A cruel and unusual example of how extreme this kind of projection can be cropped up from a group calling themselves ‘Overweight Haters Ltd’. The group handed out cards (see Figure 5.1) on the London Underground to individuals they considered to be overweight⁴⁹:

⁴⁹ See: <http://www.bbc.com/news/uk-england-london-34969424>

Overweight Haters Ltd

It's really not glandular, it's your gluttony...

Our organisation hates and resents fat people. We object to the enormous amount of food resource you consume while half the world starves. We disapprove of your wasting NHS money to treat your selfish greed. And we do not understand why you fail to grasp that by eating less you will be better off, slimmer, happy and find a partner who is not a perverted chubby-lover, or even find a partner at all.

We also object that the beautiful (sic) pig is used as an insult. You are not a pig. You are a fat, ugly human.

Figure 5.1: Text of the card handed out by Overweight Haters Ltd

The actions of this group are clearly extreme and their extreme nature leads me to believe that they are driven by their own unresolved fears and feelings of shame about the body. The attempt to publicly humiliate others seems clear evidence that this is an emotional issue. Obviously this doesn't excuse their behaviour. Not everyone who has unresolved feelings of fear and shame about the body acts this way, so it is possible to have the same emotions and not take the same actions. My point here is that the kinds of emotional issues that might lead to these kinds of actions can have an impact on one's acceptance of others, as well as one's self-acceptance, both of which can causally affect the character of one's life in terms of its happiness or unhappiness.

Emotion can causally affect the character of one's life in two ways. First, we learn at a very young age to see ourselves through the eyes of others. On the basis of our interactions with others we learn internal models or scripts which we then repeat in our relationships as adults. If these scripts are negative, if we believe that we are somehow unlovable or not good enough, then we can be said to have unresolved emotional issues. These scripts can have a detrimental effect on relationships as well as on one's peace of

mind, and the same dynamics can be repeated many times over during the course of a lifetime. Second, for reasons of self-preservation, we may learn to repress parts of ourselves that we have come to believe will result in our rejection or humiliation. The continued repression of those parts can result in panic and emotional pain when we are reminded of them. If we are reminded of those parts by another person we can develop an instant dislike for them. The more parts of ourselves that we repress, the more people we end up disliking. Repression and projection have a negative impact on self-acceptance and peace of mind, and thus can be a barrier to a happy life.

Conversely, it is also possible to resolve emotional issues and to reclaim the parts of oneself that one has repressed. Indeed, reclaiming one's shadow aspects and learning to accept oneself is a goal in forms of psychotherapy like Psychosynthesis. Once a person accepts themselves, such that he or she no longer finds any part of themselves to be unacceptable, the characteristics of others no longer have any bearing and internal unrest can be alleviated. As such, therefore, as much as unresolved emotional issues can be a barrier to happiness, resolving those issues can be a means of achieving it. On my view, therefore, emotion can have a causal effect on the character of one's life in terms of its happiness or unhappiness.

§5.1.2: A Challenge from Moral Philosophy

Paul Bloomfield writes that “being immoral keeps a person from being happy” (2014, p.4). He argues that living morally “is the only way of living that leads to happiness and the Good Life” (ibid, p.4). This is because “whenever immorality is disrespectful to its

victims, it is to the same degree self-disrespecting to its perpetrators” and “people cannot be happy and live the Good Life without self-respect” (ibid, p.4). To be moral, on Bloomfield’s view, is roughly to appreciate that one ought to do things out of regard for others, and not only out of regard for oneself. He maintains that morality is necessary for self-respect, and self-respect is necessary for happiness, thus morality is necessary for happiness⁵⁰. It might be argued that, on this view, it is self-respect and not emotion that is causal in the character of one’s life as being happy or unhappy.

Take, for instance, the various examples used in the previous section. The view espoused by someone like Bloomfield might explain the unhappiness in the lives I’ve alluded to as follows:

The possible unhappiness of a person who fits the archetypal description of being a ‘people-pleaser’ could be argued to be due to a lack of self-respect. Bloomfield points out that “one is not morally permitted to carry out a self-disrespecting act in order to please others” (2014, p.23). A people-pleaser necessarily lacks self-respect by virtue of their servility and lack of regard for themselves in always trying to please others. This lack of self-respect can explain why a people-pleaser cannot live a happy life because one cannot live a happy life without self-respect. Thus the life of the people-pleaser will necessarily be unhappy.

In the same vein, the person who holds on too tightly to a relationship restricts the freedom and the peace of mind of the person whom she is with. She does this for her own benefit, i.e. so as not to be left alone. But restricting another’s freedom and

⁵⁰ He also makes the stronger claim that “living morally and virtuously is necessary and sufficient for people to live as happily as possible” (Bloomfield 2014, p.6).

disturbing their peace of mind is disrespectful of that person. In doing what she does, therefore, she fails to have proper regard for the other person. This will have a negative impact on her self-respect because whenever one is disrespectful to others, one is disrespectful to oneself to the same degree. As a result of her holding on too tightly, she loses self-respect. And she continues to do so every time she enters a relationship in which the pattern is repeated. This lack of self-respect can explain why she cannot live a happy life because one cannot be happy without self-respect. Therefore her life is necessarily unhappy.

Finally, the same can be argued in the case of the Overweight Haters Ltd. The actions of this group are clearly immoral, inflicting as they do unnecessary harm on complete strangers. By inflicting harm on others the group's actions are disrespectful to those others, and to the same degree they are disrespectful to themselves. Thus the actions undertaken will have a negative impact on the self-respect of the individual members of the group. As a result of their actions, the individual members will lose self-respect. One cannot be happy without self-respect. Therefore, members of the group will necessarily live unhappy lives.

On this moral view, the unhappy examples I presented in the previous section can be explained as being due to the negative impact on self-respect of behaving disrespectfully. If that's the case then it is one's self-respect, rather than one's emotion, that is causal in the character of one's life in terms of its happiness or unhappiness.

§5.1.3: Response to the Challenge.

I do not wish to discount the importance that self-respect plays in the character of a life. In fact, I agree with Bloomfield that self-respect is necessary for happiness. However, one does not lose self-respect in a vacuum. I mean by this that there are underlying reasons why a person becomes a people-pleaser, or clingy, or cold, or someone who projects onto others, and those underlying reasons include unresolved emotional issues such as those I've described.

Additionally, issues of self-respect cannot explain why the incidence of prescribing antidepressants increased by approximately 20% per annum in the period between 2000 and 2010 across 27 European countries (Lewer et al., 2015). Nor can it explain the fact that the proportion of people in the UK consulting a counsellor or psychotherapist increased from 20% in 2010 to 28% in 2014⁵¹. These figures are clear indicators that many people are living unhappy lives, and that their unhappiness is affect-related. If this were not the case then it would make little sense that they turn to affect-regulating drugs or seek the emotional support of a counsellor or psychotherapist.

Even if self-respect is a significant factor in living a happy life, unresolved emotional issues can be a causal factor in one's level of self-respect. Thus, unresolved emotional issues can causally affect one's happiness. Emotion has a causal effect on the character of one's life in terms of its happiness or unhappiness.

⁵¹ Report from the British Association of Counselling & Psychotherapy (BACP)
<http://www.bacp.co.uk/media/?newsId=3506>.

But demonstrating that emotion can have an effect on the character of one's life is evidence only that one's emotional *faculties* causally effect feelings. For my thesis to be fully plausible I must demonstrate some causal effect on feelings at the level of the individual emotion. I do this in the next section.

§5.2: Effect of an Individual Token of Emotion on Feelings

In this section I argue that an individual token of emotion can causally affect one's feelings towards oneself.

We learn from a young age that some emotion types are more socially acceptable than others. It is not uncommon, for example, for a person to feel embarrassed by, or even apologise for, any public display of sadness. It is rather less common for a person to do the same when they smile, or laugh, or generally feel happy in the company of others. To be embarrassed by one's sadness, but not by one's happiness, is evidence that the former is relatively less socially acceptable than the latter. Other emotions which may be thought of as being socially proscribed to some extent include anger, bitterness, despair, envy, fear, hatred, jealousy, panic, regret, and resentment. While emotions that are socially acceptable might include affection, compassion, courage, exuberance, gratitude, hope, love, passion, and resilience.

Feeling a token of an emotional type that is socially proscribed can causally affect one's feelings towards oneself. Take the example of fear. Fear seems to be a fact of life. We can feel fear in response to deteriorating global conflicts, to economic crises, to the

conditions of our lives, and to everyday events and occurrences. Now consider an imaginary person called Bob who feels fear as he tries to pass his neighbour's barking dog. Bob has been told since he was a small boy that he should "man up" in scary situations, and that being afraid means that he's a coward. Thus Bob has been conditioned to believe that fear is an emotion which is not only socially unacceptable, but which also reflects badly on his own character (i.e. his feeling fear implies his cowardice). Because of this conditioning, Bob dislikes the fact that he feels afraid, and what is more, he becomes the object of his own feelings of dislike. Bob dislikes himself for feeling fear. Thus, Bob's feeling of fear has a causal effect on his feelings towards himself.

The emotions that one feels seem to say something about one's character, about the kind of person one is. For instance, I dislike the notion that I'm capable of bitterness. I hold it to be a singularly unattractive emotion. But nevertheless I am human, and so there are times when I experience feeling bitter. When I feel bitter I am faced with the fact of the matter about the type of person that I am; I am the type of person who is capable of feeling bitter. As I dislike bitterness, so in that moment I dislike myself for feeling bitter. I become the object of my own dislike as a causal effect of my feeling bitter. Thus my feeling bitter causally affects how I feel about myself. Because we believe that the emotions we feel say something about the type of person we are, feeling emotions that we believe speak badly of our character can have a negative impact on how we feel about ourselves; just as feeling emotions that we believe speak well of our character can have a positive impact on how we feel about ourselves. If that's the case then an individual token of emotion can causally affect feelings.

An objection might be raised here. In the examples I've described it seems that how one feels about oneself is more plausibly affected by one's beliefs. One's belief that emotion speaks to character, coupled with one's belief that a particular token of an emotion type can reflect badly (or well) on one's character, can causally affect how one feels about oneself. Put this way it seems that it is one's beliefs, and not one's emotion, that plays the causal role in one's self-feelings.

To see this challenge more clearly consider a non-emotional example: If I believe (a) 'that drinking orangeade speaks to my character', and I believe (b) 'that drinking orangeade reflects badly on my character', then I will feel badly about myself when I drink orangeade. But it is my beliefs, and not the fact of my drinking orangeade, that causally affects how I feel about myself. That this is the case can be seen by changing the beliefs involved. If I were to change my belief (b) such that instead I now believe (c) 'that drinking orangeade makes people like me', then I will probably feel good about myself when I drink orangeade. Changing my belief from (b) to (c) changes how I feel about myself, and so it is my beliefs and not my behaviour that plays the casual role.

Now imagine a world (w^*) in which fear is believed to be a laudable rather than a lamentable emotion. In (w^*) someone who feels fear is believed to be brave rather than cowardly. Plausibly, in (w^*) a person would feel good about themselves when they feel fear. But the difference between (w^*) and our world is a difference in beliefs not emotions; fear feels the same in (w^*) as it does in our world, and it is felt in response to the same things, such as barking dogs. If the difference in belief results in one's feeling good about oneself on (w^*), then it seems that it is one's beliefs, and not one's

emotions, that have a causal effect on how one feels about oneself. If that's true then my claim that emotion causally affects feelings is undermined.

In my view, emotional conditioning is a complex phenomenon. Specifically, the social conditioning that results in aversion to socially proscribed emotions, or to the expression of those emotions, includes deep and abiding beliefs, judgments, physiological responses and higher-order perceptions. However the topic, while worthy of argument, is tangential. The problem with the challenge is not that it underestimates emotional conditioning, but rather that, in this instance, it confuses the cognitive element of a self-directed emotion with its cause.

I have already argued (Ch.1) that emotion supervenes *inter alia* on cognition, and it is this supervenience that muddies the water, so to speak, when it comes to one's disliking oneself as a result of having a particular emotion. When one dislikes oneself, one feels the emotion of dislike. Dislike, just like any other emotion, supervenes in part on cognitive factors. But supervenience is not a causal relation. If A supervenes on B, then the relationship is such that there cannot be a change in B without some change in A. This seems correctly to describe the relationship between, for instance, social conditioning about what fear says about one's character, and the type of one's self-directed emotion. Consider the twin worlds example used in the objection. There is a difference between (w*) and our world in terms of the conditioning about what fear says about a person. In (w*) fear is laudable, in our world it is lamentable. In (w*) a person can feel good about themselves when they feel afraid, and in our world a person can feel bad about themselves when they experience the same emotion (they can dislike themselves). On this view, the difference in self-directed emotion can be seen to

supervene on the difference in conditioning – by changing the conditioning the self-directed emotion changes. Indeed it seems unlikely that such a change in conditioning wouldn't change the self-directed emotion in the way described. If one were conditioned to hold that feeling a certain emotion reflected well on one's character then it seems unlikely that one would dislike oneself as a result of feeling that emotion.

But the cognitive element of one's self-directed emotion, while important, ought not to be confused with the cause of that self-directed emotion. In the examples I used (Bob's fear and my bitterness) our self-directed feelings of dislike supervene on our respective conditioning about such emotions; the reason the self-directed emotion in question is dislike rather than pride, or affection (or some other positive affect), is because the emotion is determined by our conditioning about fear and bitterness. But the conditioning upon which the self-directed emotion supervenes is not the same as the instigating cause for those self-directed feelings to arise.

If Bob had not felt fear, he would not have felt dislike towards himself for feeling fear. If I had not felt bitterness, I would not have felt dislike towards myself for feeling bitter. It is Bob's feeling of fear, and my feeling of bitterness, that are causally antecedent to how we feel towards ourselves. If that's true then an individual token of emotion can causally affect how one feels towards oneself; a token of emotion can causally affect feelings. Thus emotion can have a downward causal effect on feelings.

Chapter Conclusion:

In this chapter I have argued that emotion can be a causal factor in the character of a life in terms of its happiness or unhappiness, and that an individual token of an emotion type can causally affect one's feelings towards oneself. Thus emotion can have a causal effect on feelings.

I have already argued that emotion has a causal effect on cognition. This chapter constitutes my argument that emotion can have a causal effect on feelings. In the next chapter I will argue that emotion has a causal effect on the remaining constituent part of emotion, perception.

Chapter 6: Emotion's Effect on Perception

They say that love makes you see the world through 'rose tinted glasses', and that revenge is 'a dish best served cold'. They also say that disappointment is a 'bitter pill', compared with the 'sweet taste' of success. And in the same sensory vein, we talk about rage as a 'red mist'; about being 'green' with envy, and about sadness as 'feeling blue'. Metaphors like these abound. And their abundance serves to illustrate how commonplace a notion it is that our emotions affect how we perceive the world around us. In this chapter I argue that this commonplace notion is correct, emotion can have a causal effect on perception. I argue (§6.1) that emotion has a causal effect, at the level of the emotional faculty, on the selectivity of perceptual processing. I also argue (§6.2) that a token of an emotion type can causally effect higher-order perception.

§6.1: Emotion's Effect on Perceptual Selectivity

The human capacity to process perceptual information is finite and thus limited in comparison with the volume of information available. For instance, from the amount of visual information available to the retina at any given time, only a proportion will be processed into conscious awareness, while the rest will effectively remain unperceived⁵². When there is more information available than is processed, it would be beneficial that material relevant to our survival or wellbeing should make it through the information bottleneck to conscious perception ahead of more neutral material. For instance, the person whose visual attention is automatically drawn to movement in the grass is more likely to avoid the poisonous snake and thus survive; the person whose

⁵² See Desimone & Duncan (1995).

hearing picks up on the stealthy footsteps behind her is more likely to have time to outrun an attacker and thus remain uninjured. It would make sense, from an adaptive perspective therefore, if a stimulus that elicits an emotion like fear had preference for perceptual processing over more neutral stimuli. Given our finite capacity for perceptual processing, and given the adaptive benefit of a preference for emotion-eliciting stimuli, it seems plausible that emotion has a prioritising effect on perceptual processing. In this section, I argue (§6.1.1) that emotion causally affects perceptual selectivity and I present empirical evidence to back up my claim. If emotion affects perceptual selectivity then emotion can be said to have a causal effect on perception. I consider the potential challenge (§6.1.2) that perceptual selectivity is a cognitive process rather than a perceptual one. If that's true then I am mistaken when I appeal to perceptual selectivity as an example of emotion's effect on perception. I respond (§6.1.3) that cognition can be a cause of perceptual selectivity but that does not mean that the process itself is not perceptual. I argue that perceptual selectivity is a perceptual process on the basis of parsimony, and because this fits better with the empirical evidence. Perceptual selectivity is a perceptual process. Emotion has a causal effect on perceptual selectivity. Therefore emotion has a causal effect on perception.

§6.1.1: Emotion's Effect on Perceptual Selectivity

The volume of information processed by perception at any given time can be vast. Consider driving down a busy street with the radio playing and a passenger in the car. As you do this, perceptual processing will include proprioceptive information about posture and the movement of your feet and hands; tactile information from the pressure of the pedals and the grip of the steering wheel; auditory information from the sound of

the engine, the music from the radio, and conversation from your passenger; and visual information from both inside the vehicle (mirrors, gearstick, gauges, panel lights, yourself, your passenger) and outside the vehicle (sign posts, lane markings, traffic lights, parked cars, buses, traffic, shop windows, pedestrians). In this most ordinary of everyday activities the volume of information that is being processed simultaneously through perception is not inconsiderable. Even so, the volume of information that actually makes it through to conscious awareness is only a proportion of the information that's available. For instance, fine-grained sensory information, such as the colour of a pedestrian's hat, or the facial features of the bus driver, or words on the poster in the bus shelter, can often fail to register. Similarly, most of the available sensory information about the road ahead of you will be unattended when you shift your focus to the rear-view mirror. Not all available sensory information makes it through to conscious perception, and the term given to the process by which we filter out some of the available perceptual information is called 'perceptual selectivity'.

Biased Competition Theory (Desimone & Duncan 1995) suggests that sensory information is not all treated as equal in perceptual selectivity. It suggests that perceptual processing prioritises certain stimuli over others and that, as such, perception can be said to be biased. The theory holds that perception does this for two reasons. First, because processing of perceptual information becomes less detailed the more information is being processed. For instance, we can attend to more than one object in the visual field at any given time, but when visual attention is divided the information processed becomes less fine grained. "Information about more than one object may, to some extent, be processed in parallel, but the information available about any given object will decline as more and more objects are added" (Desimone & Duncan 1995,

p.197). So, for instance, I can attend to my phone while I'm driving, but I cannot read the text of a message on it and attend to the road ahead at the same time; indeed laws and stipulations against using mobile phones in the car reflect this perceptual limitation. Second, at any given time some perceptual stimuli will have more importance or relevance, with regard to one's occurrent endeavours, than other stimuli. For instance, my visual field is cluttered at present, as it typically is, but the words on this page are more important to my current writing project than the view from the window beyond. As a result, much of the available visual information from the view beyond the window will not make it through the filtering process to my conscious perception. It is simply unnecessary that it do so, and it would be a waste of my finite perceptual processing capacity for unnecessary information to be processed.

Perceptual selectivity occurs in audition as well as in vision. For instance, I can attend to a conversation being held by a group behind me when I'm in a busy restaurant, even while the people sitting closer to me are also speaking. In an experiment by Moray (1959), two different messages were delivered simultaneously, one to each ear of the participating subjects. The subjects were instructed to attend only to one of these messages. It was ensured that they did this by their repeating the message aloud as it was delivered (a process known as 'shadowing'). Moray found that, even in cases where the unattended message consisted of a short list of simple words, repeated several times, no trace of that message was retained. In similar tests (Cherry 1953) subjects were unable even to report what language the unattended message had been spoken in. An interesting exception to this, Moray found, was when the person's name was spoken as part of the unattended message; "a person's own name can penetrate the block" (Moray 1959, p.60). Unnecessary or unimportant auditory stimuli can be filtered out before they

are processed, and more important stimuli, such as the individual's own name, are more likely to make it through the filter to conscious auditory perception.

As information declines when attention is divided, and as we operate within a constantly cluttered perceptual environment, with a finite capacity to process it, the available perceptual information is necessarily prioritised. Biased Competition Theory holds that as the perceptual system prioritises some objects over others, then the perceptual system must be selectively biased in favour of certain types of information.

Research shows that emotion-eliciting stimuli are typically given priority over non-emotional stimuli. For instance, Öhman et al. (2001) found that fear-relevant images (snakes and spiders) are found more quickly in an array of images than fear-irrelevant ones. In their view, this is because our perceptual systems are biased towards stimuli that are relevant to survival. A perceptual system that is biased in this way would have adaptive value. "Mammals evolved in environments where resources and dangers were unpredictably distributed in space and time. The reproductive potential of individuals, therefore, was predicated on the ability to efficiently locate critically important events in the surroundings" (Öhman et al. 2001, p.466). The authors also suggest that visual selectivity would have to be automatic in order to be adaptive. The slower the selectivity for survival-relevant stimuli, the less likely the survival. In their view, perceptual selectivity of survival-relevant stimuli would have to be automatic or pre-reflective if it is to have adaptive benefit.

It makes sense that survival-relevant stimuli would automatically make it through the sensory information bottleneck to conscious perception. This raises the question as to

what might signal to the perceptual process that one type of stimulus is more relevant to survival than another. Consider the mundane driving scenario I used in the introduction to this section. Now consider what happens when you add something into the mix that's likely to provoke anxiety. For instance, torrential rain. In this scenario several anxiety-eliciting events can occur at once. For instance, your windscreen might keep misting up and your view would be obscured by this, as well as by the rain, and by the wipers that can't move fast enough to clear it; brake lights from the cars in front of you would flash on and off as the traffic slows; pedestrians might dash across the street without looking; and oncoming cars might swerve over the central line to avoid those pedestrians. In such a situation these anxiety-eliciting objects and events will take precedence for perceptual processing over more neutral proprioceptive, tactile, visual and auditory stimuli. This seems reasonable. If our capacity to process perceptual information is finite, then selectively processing sensory information relevant to avoiding a crash, or running over a pedestrian, will be more beneficial than processing the lyrics of the song on the radio.

When objects elicit anxiety there is an increase in the biochemical correlates of anxiety; cortisone and adrenaline are released into the bloodstream⁵³. It seems possible that this biochemical surge is a factor in the prioritisation of emotion-eliciting events over neutral events in selective perception. Empirical evidence suggests that this is the case. Adam Anderson (2005) found that one of the limitations of perceptual processing, known as the 'attentional-blink', is reduced in the presence of emotion-eliciting stimuli. In research studies, subjects sit before a screen on which words are flashed rapidly one after another (at times T1, T2, T3...). Some of those words are neutral, for example

⁵³ See previous chapter for a more detailed description of the biological process involved in the stress mechanism of 'fight or flight'.

‘chrysanthemum’; some of the words are emotion-eliciting, for example ‘rape’. When a subject is presented with two neutral words in tandem, there is a transient impairment to perceptual attention. So, for instance, for neutral words there is an impairment in perception of the word presented at T2, during which time the word presented at T1 is still being processed. This transient impairment is known as the ‘attentional-blink’. Attentional-blinks can last for up to 500ms. When the time intervals between words is shorter, there is a greater volume of information competing for processing into perceptual awareness. When this happens the attentional-blink is longer. It is thought that this impairment to attention “demonstrates that perceptual encoding depends on a capacity-limited short-term consolidation process” (Anderson 2005, p.259). In other words, our capacity to process and consolidate information in perceptual awareness is limited.

In a series of tests, Anderson found that the attentional-blink is significantly reduced when an emotion-eliciting word is introduced into the series of words being flashed on the screen; there’s a shorter attentional-blink when an emotion-eliciting word like ‘rape’ appears. This means that whatever process limits visual attention, that process is penetrated more easily by emotional stimuli. This is in keeping with Moray’s findings that hearing one’s name spoken can penetrate a block on auditory perception. Significantly, the reduction in attentional-blink is more pronounced when the time interval between words is shortest; i.e. the faster the words are flashed the more quickly an emotional word will make it through to visual awareness. This is the opposite effect from that observed when neutral words are flashed more quickly. The author believes that the reduction in the length of the attentional-blink for emotional stimuli “would

suggest that affective events require fewer attentional resources during encoding to gain entry into awareness” (Anderson 2005, p.260).

Anderson also found that the more emotionally arousing the stimulus, the shorter the attentional-blink. Thus, the level of emotional arousal associated with the word flashed on the screen had an affect on the attenuation of the attentional-blink. So, for instance, a word like ‘rape’ would be processed more quickly than a word like ‘home’. This fits with the notion that the biochemical correlates of emotion play a causal role in the prioritisation of objects and events in the perceptual field. There is a direct correlation between emotional arousal and the speed of perceptual processing. On Anderson’s view, this means that emotional arousal is best characterised as an enhancement to perception. On this view, it is not just that perception of emotional stimuli happens faster, rather we should consider this as evidence that emotion itself speeds up perceptual processing.

Further evidence that emotion speeds up perceptual processing comes from pathological cases in which damage has occurred to emotion centres in the brain. Anderson & Phelps (2001) found that damage to the amygdala, an area of the brain intimately associated with emotion, reduces the attenuating affect of emotional stimuli on perceptual attention. When the amygdala is undamaged emotional stimuli are processed more quickly than neutral stimuli; when the amygdala is damaged emotional stimuli and neutral stimuli are processed at the same speed. The authors found that “a patient with bilateral amygdala damage has no enhanced perception for...aversive stimulus events” (2001, p.305). As amygdala damage affects emotional arousal, this fits with the hypothesis that emotion speeds up perceptual processing.

An analogy might be useful to explain how this might happen. Imagine a sorting-tray from which packets of information are picked up by grappling hooks and delivered to slots in the wall. Let's call the time it takes, between pick-up by the grappling hook and delivery to the slot in the wall, the 'blink-time'. Imagine that packets of information are constantly arriving on the sorting-tray. The speed of arrival of the packets is faster than the speed of processing by the grappling-hooks, and so the packets begin to accumulate. As the packets accumulate, it's more difficult for the grappling hooks to grab hold of them with any precision, which can slow down the process and thus the 'blink-time' increases.

Now imagine that the packets of information come in two types – 'urgent' and 'non-urgent'. Urgent packets are distinguished from non-urgent packets by virtue of the fact that the former emit a chemical signature while the latter do not. The grappling hooks are pre-programmed such that whenever an urgent packet arrives on the sorting tray, the chemical signature it emits automatically causes the nearest grappling hook to drop whatever it's carrying, and go back to pick up the urgent packet instead. It then delivers the urgent packet to the slot in the wall.

In this analogy, there are several variables that affect the speed of delivery; the type of packages on the sorting tray (urgent or non-urgent), the volume of packets on the sorting tray, and the proportion of grappling hooks employed in urgent and non-urgent processing. Neither the number, nor the size of the slots in the wall are variable and each slot can receive only one package at a time, irrespective of their urgency. In this automated system, urgent packets always have priority and as more and more urgent

packets arrive, more and more grappling hooks drop their non-urgent load and start processing urgent packets instead. Thus disproportionately more urgent packets make it through the slot in comparison with non-urgent packets.

In my analogy, the non-urgent packets represent non-emotional stimuli; urgent packets represent emotion-eliciting stimuli. The latter are distinguishable because emotions have biochemical correlates (such as cortisol and adrenaline etc.), which are represented in my analogy as chemical signals. The more intense the emotion elicited, the more biochemicals released, the stronger the chemical signal. The grappling hook represents perceptual processing. And finally, the slot in the wall represents conscious awareness; only the packets that make it through the slot make it into conscious awareness.

Because the chemical signal attached to urgent packets will cause the grappling hooks to drop whatever they're carrying in order to pick them up, the time it takes from arrival to delivery is reduced for urgent packets in comparison with non-urgent packets. But sometimes a malfunction can occur. Take for instance the scenario in which an urgent packet does not emit a chemical signal. In this case the system doesn't register it as urgent and therefore doesn't automatically drop what it's carrying and pick up the urgent package. The urgent package becomes just another in the bottleneck of packages. This is analogous to the situation in which there is damage to the amygdala, the part of the brain responsible for regulating the release of biochemicals in the stress response. Without the presence of a chemical signal, the processing system is not interrupted. In this instance the processing time for the urgent packet isn't reduced in comparison with the processing time for non-urgent packets.

Perceptual processing is finite and therefore perceptual stimuli must be prioritised in some way. With a constantly crowded visual and auditory field, it makes sense that emotion-eliciting stimuli would have priority over non-emotional stimuli when both are in competition for perceptual attention. Prioritising emotional stimuli improves one's chances for survival, and empirical evidence suggests that emotionally relevant stimuli are indeed prioritised in perceptual processing. The more emotionally arousing the stimulus, the more quickly it's processed into conscious perception. Think about the example I gave earlier of driving in torrential rain. Events like the windscreen starting to fog-up, or brake lights coming on in the cars ahead are likely to cause anxiety. But this will likely be considerably less than the anxiety provoked if a pedestrian were suddenly to dash in front of your car without looking. When that happens the pedestrian will automatically, and instantly, have your full attention. This automaticity in prioritising events that elicit the strongest emotional response suggests that it is emotion itself (or at least the biochemical correlates of emotion) that has the prioritising effect on perception. If that's the case then emotion has a causal effect on the selectivity of the perceptual process. As emotion affects perceptual selectivity, emotion has a causal effect on perception.

§6.1.2: A Challenge from Selectivity as a Cognitive Process

A potential challenge may be raised against the characterisation of perceptual selectivity as a perceptual process. It may be that the selectivity of perception is mediated by cognition. It may be that selectivity is not automatic, as I've suggested, but rather selectivity is controlled by cognition; it may be that we decide which types of

perceptual stimuli to process first. If perceptual selectivity is a cognitive process then the prioritisation of emotion-eliciting events is not done by perception. If that's the case then my conclusion that emotion has a causal effect on perception is mistaken.

Nicholas Pastore (1949) holds such a view. He maintains that perceptual selectivity is the result of cognitive mechanisms and denies that perception itself is selective. He argues that it is the interpretive system accompanying perception which does the filtering. Perceptual selectivity, he argues, does not involve perception alone, it also involves the attention or interests of the individual. On Pastore's view, the very fact that perceptual selectivity filters out information that may be deemed 'irrelevant' to our occurrent endeavours suggests that the filtering process is cognitive. After all, determining what is, and what isn't, relevant is something that can only be done by cognition. On Pastore's view it seems incoherent to claim that the perceptual system does this determining. On this basis, Pastore argues, perceptual selectivity is cognitive rather than perceptual.

It might be argued that Pastore's view is in keeping with the notion of information encapsulation in perception. The inputs of perception (visual and auditory stimuli etc.) are thought to be informationally encapsulated from belief and expectation. Jerry Fodor (1983) first proposed this notion of 'cognitive encapsulation'. He points to sensory illusions as evidence for his view. Take for example the Müller-Lyer lines (Figure 6.2.1). Two lines of exactly equal length can appear to be different in length when the arrows on either end are reversed in direction. Even when one is aware that the image is a visual illusion, the illusion seems to persist. Fodor argues that the persistence of the

illusion would not be possible if sensory perception were not informationally encapsulated from beliefs and expectations.

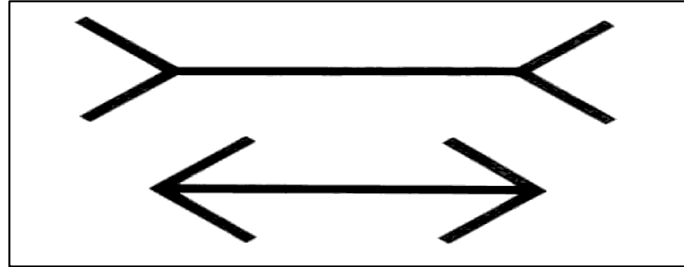


Figure 6.2.1: Müller-Lyer Lines

On Pastore's view, prioritisation in perception seems to require some form of categorisation; i.e. inputs would have to be categorised as relevant or irrelevant etc. in order to be prioritised. If, as Fodor holds, perceptual inputs are informationally encapsulated from beliefs and expectations, then it seems unlikely that categorisation could occur in advance of cognition. This is because categorisation seems to require that the perceptual input be operated on by belief; for example, the belief that events with certain properties belong to the same category. Thus, if perceptual inputs are informationally encapsulated, it seems more likely that perceptual selectivity is cognitive, as Pastore argues. Perceptual illusions seem to provide reason to believe that perceptual inputs are informationally encapsulated. Therefore, there is reason to believe that perceptual selectivity is cognitive rather than perceptual. If that's the case then emotion's effect on perceptual selectivity is due to an effect on cognition and not on perception. Hence, emotion's effect on perceptual selectivity does not constitute an argument that emotion causally affects perception.

§6.1.3: Response to the Challenge

As an initial response, it is worth noting that the informational encapsulation of perceptual inputs is not inconsistent with the notion that perceptual selectivity is a perceptual process. It is possible that what is perceived can be informationally encapsulated, even if the selection of what is perceived is prioritised by perception. This is in keeping with our ordinary experience of perception of emotion-eliciting stimuli. Consider that the coiled object in the grass might turn out to be a rope and not a snake. When this fear-eliciting object is first selectively perceived, however, that distinction is not made. It is only subsequently, post the adrenaline rush, that the distinction between rope and snake is typically made. Thus perceptual processing of the coiled object can be prioritised even while still informationally encapsulated. Selectivity by perception and informational encapsulation are not mutually exclusive. I have suggested that the biochemical correlates of emotion affect the prioritisation of perceptual information. If that's true then cognition is not required for prioritisation. On this basis, the emotion-eliciting stimulus can still be selectively processed without interference from belief or expectation.

In my view, Pastore is mistaken when he maintains that perceptual selectivity is cognitive rather than perceptual. I believe cognition can have the effect of directing perceptual selectivity, but this does not mean that perceptual selectivity is entirely a cognitive process. A selective system in which higher-priority information is identified automatically is more efficient than a selective system in which priority must be ascribed. If perceptual selectivity is cognitive, then incoming information is not prioritised automatically. Rather, the prioritisation of the information comes about through cognitive processing. This would require a heavier processing load than if

selectivity were part of the perceptual process itself. The heavier processing load necessarily makes this a less efficient system. If selectivity confers survival benefit, then an organism has a higher chance of survival with a more efficient system rather than a less efficient one. The parsimony of an automatic system suggests that selectivity is more likely to be perceptual rather than cognitive.

My response from parsimony is also backed up by the fact that an automatic system fits better with the empirical evidence. Adam Anderson's (2005) research showed that the bottleneck of perception is penetrated faster by emotional stimuli when the presentation of stimuli is speeded up. Thus the shortening of the attentional-blink is more pronounced when the time interval between stimuli is reduced. He claims that this "suggests enhanced encoding of emotional events is best characterised as a relative enhancement of preattentive bottom-up processing rather than a postattentive top-down modulation of resources toward these events" (Anderson 2005, p.270). Perception is a bottom-up process, while cognition is typically top-down. If the empirical evidence is more consistent with a bottom-up process then it is more likely that perceptual selectivity is perceptual rather than cognitive.

Additionally, and not insignificantly, amygdala damage does not affect a person's comprehension of the significance of an emotional stimulus. So, for instance, a patient with bilateral amygdala damage will fully comprehend the emotional significance of the emotional words flashed up on the screen. They would understand that a word like 'chrysanthemum' is a fairly neutral word, and that a word like 'rape' has strong emotional significance. If perceptual selectivity were a cognitive process, one would expect that the subject's understanding of the emotional significance of a word like

‘rape’ would have some influence on perceptual selectivity. One would expect the speed of processing the word ‘rape’ would be faster than the speed of processing the word ‘chrysanthemum’. In other words, if perceptions are filtered by cognition, one would expect cognitive understanding to have an effect on what is selected for filtering. But this is not the case. Understanding what the word ‘rape’ means does not reduce the attentional-blink.

Amygdala damage impairs the production of the biochemical correlates of emotion. Think about the example of a pedestrian dashing in front of your car. When this happens your stress response kicks in. In the stress response under normal (non-pathological) conditions, the amygdala signals to the hypothalamus to release hormones that eventually lead to the release of cortisol into the bloodstream. The cortisol then affects heart rate and respiration etc. When the amygdala is damaged, this signalling is impaired and so cortisol isn’t released as it should be. When the amygdala is damaged the attentional-blink is not shortened as it would normally be, and the fact that it is not shortened might be explained by the lack of cortisol in the bloodstream.

None of this need be interpreted to mean that cognition cannot also have an effect on perceptual selectivity. Such a claim would be unjustified, as well as unnecessary. The notion that cognition can affect selectivity is consistent with the notion that perceptual selectivity is a perceptual process. By virtue of parsimony, and on the basis of empirical evidence, it is more likely that perceptual selectivity is a perceptual process. Emotion has a causal effect on perceptual selectivity.

The effect of emotion on perceptual selectivity shows that emotion has a causal effect on perception at the macro-level of the emotional faculty. But in order for my thesis to be complete it is necessary to show that an individual token of an emotion type can also causally affect perception. I do this in the next section.

§6.2: An Individual Token of an Emotion Type can Causally Affect Perception

In this section I argue that an individual token of an emotion type can have a causal effect on higher-order perception.

Theories of higher order perception hold that learning and experience contribute to the representational content of perception. Tim Crane explains that this view “entails that a scientist and a child may look at a cathode ray tube and, in a sense, the first will see it but the second won’t. The claim is not, of course, that the child’s experience is ‘empty’; but that, unlike the scientist, it does not see the tube *as* a cathode ray tube” (Crane 1992, p.136). On this view it can be said that the scientist’s ‘higher-order’ perception of the tube is *as* a cathode ray tube. On my view an individual token of an emotion type can have a causal effect on higher-order perception – an emotion can cause one to (higher-order) perceive *X as Y*, in much the same way as the scientist perceives the tube *as* a cathode ray tube.

I argued, in Chapter 3, that the intentional objects of emotion are perceptual objects. On the basis of that argument, I claimed that the intentionality of emotion is partly determined by perception. From there I concluded that emotion is partly perceptual. In

the course of my argument I used the example of feeling hurt about being snubbed by a friend who fails to acknowledge me. I argued that my feeling hurt is determined in part by my friend's failure to acknowledge me. I said that we fall foul of an act-object ambiguity when we conflate the object of my hurt (my friend's failure to acknowledge me) with my act of evaluation of that object (i.e. as a snub). I highlighted the mistake in this potential ambiguity by pointing out that my evaluation of 'my friend's failure to acknowledge me' as 'a snub' can be mistaken (she may simply not have seen me). Thus separating the object of an emotion from one's evaluation of that object is important if we are accurately to understand the constituent parts of emotion. In the dialectic to follow, I take this specific example a step further in order to demonstrate how my feeling hurt in this instance can causally affect my higher-order perception of my friend. On my view, my feeling hurt by my friend's failure to acknowledge me can cause me to (higher-order) perceive her *as* hurtful; i.e. as a person who has the property of being capable of deliberately inflicting emotional pain or distress on another.

An early objection may be raised here. A challenger may argue that it may be that my feeling hurt has a causal effect on my beliefs rather than on my higher-order perceptions. For instance, it may be that my feeling hurt causes me to form the belief that my friend has acted in a hurtful way, and I may conclude from this belief that she is in fact hurtful. But if that's the case then my categorisation of this belief as a higher-order perception is a mistake.

I am not convinced by the objection because my perception of my friend as hurtful may, in fact, run counter to my beliefs. My background knowledge may be such that I believe that she is tactful and kind. Indeed, my seeing her in that moment as hurtful may result

in some internal dissonance, where my previous beliefs conflict with my current perceptual experience of seeing her as hurtful. My seeing her as hurtful in this instance seems to have perceptual rather than cognitive grounds; i.e. my perception of her failure to acknowledge me.

But my response to the objection raises a separate potential challenge. It may be argued that my perception of my friend's failure to acknowledge me is sufficient for my (higher-order) perception of her *as* hurtful. After all, a person who ignores a friend in public seems to be a person who is capable of deliberately inflicting emotional pain. If a person's actions are hurtful then it seems plausible that that person can be (higher-order) perceived *as* hurtful, whether or not anyone is actually hurt by their actions. And even if it turns out that the action was not deliberately hurtful (if in fact I was mistaken to feel hurt), there would still be no reason to believe that my emotion played a causal role in my higher-order perception, because perception too can be mistaken. If my (higher-order) perception of my friend *as* hurtful can be explained by her action, even when that higher-order perception is mistaken, then my feeling hurt need play no causal role in that higher-order perception. If this challenge is correct then my claim that emotion can causally effect higher-order perception is seriously undermined.

As reasonable as the objection sounds, it doesn't seem entirely plausible to me that my feeling hurt is epiphenomenal in my (higher-order) perception of my friend *as* hurtful. Consider that my feeling hurt is a token of rejection (metaphorically, one feels stung by rejection, and the sting of rejection is painful, it hurts). When we feel rejected, one way of reducing the pain of that hurt is by rejecting the rejecter. In order to reject the rejecter we must see the rejecter in a negative light, so to speak.

Consider that when we feel rejected we look for reasons for that rejection. After all, as rational agents we do things for reasons, and so we have an expectation that others, similarly, do things for reasons. If someone rejects me there seems to be two possible reasons available – either I’m rejected because of something to do with me (some flaw of mine, previously unknown to me, which explains), or I’m rejected because of something to do with the rejecter (some flaw in her, previously unknown to me, which explains her rejection). In other words, either I’m to blame or she is. Psychologically, it’s less painful if the latter is true and the former is false. If the flaw is mine, if I’m to blame for her rejection, the pain of that rejection won’t be reduced. If, on the other hand, I can reject the rejecter then the hurt I feel can be ameliorated (the “I never liked her in the first place” defence). In order to reject the rejecter I must see her as flawed; as someone, for instance, who is capable of deliberately inflicting emotional pain or distress on another. When I (higher-order) perceive the rejecter *as* hurtful, I can in turn reject her, and the pain of my own rejection is reduced.

When we feel pain of any kind, physical or emotional, we intuitively seek to reduce it. The sting of rejection can be particularly painful. One means of reducing that pain is to reject the rejecter. One way of rejecting the rejecter is to see them as flawed. On my view my feeling hurt can cause me to (higher-order) perceive my friend *as* hurtful in order to reduce my feelings of hurt. As such, therefore, my feeling hurt plays a causal role in my (higher-order) perception of my friend *as* hurtful. If that’s true, and it plausibly is, then an individual token of an emotion type can causally affect perception.

Chapter Conclusion:

I have argued that emotion causally affects perception

At the level of the emotional faculty, emotion plays a causal role in perceptual selectivity. Emotion-relevant information has biochemical correlates which may act to prioritise the information for perceptual processing. If that's the case then the biochemical correlates of emotion directly affect perceptual selectivity. As emotion causally affects perceptual selectivity, and as perceptual selectivity is a perceptual process, then emotion causally affects perception.

At the level of the individual emotion, emotion can have a causal effect on higher-order perception. When one feels hurt by rejection, one seeks to reduce the pain of that emotion. One can reduce the pain of rejection by rejecting the rejecter. One means of rejecting the rejecter is to see them in a negative light, to see them as flawed. So by changing one's higher-order perception of the rejecter, one can reduce the pain of one's rejection. Thus a token of rejection can causally result in one's higher-order perception of the rejecter. A token of an emotion type can causally affect perception.

In this chapter I have argued that emotion causally affects perception. In the previous chapters I argued that emotion also has a causal effect (Ch.4) on cognition, and (Ch.5) on how one feels. Thus, I have argued that emotion causally affects its cognitive, feeling

and perceptual mereological parts. This means that emotion demonstrates downward causation.

I now go on to the wrap-up to Part II, where I will show that the arguments and the evidence I have presented in this thesis lead to the conclusion that emotion is an ontologically emergent *sui generis* faculty.

Thesis Conclusion:

In the introduction to this thesis I explained that there are two individually necessary, and jointly sufficient, conditions which emotion must meet if it is to be considered ontologically emergent. These are:

1. Emotion must have mereological parts to which it cannot be reduced.
2. Emotion must demonstrate downward causation.

I argued, in Part I, that emotion has cognitive, feeling, and perceptual mereological parts to which it cannot be reduced. The evaluations of emotion are complex, and necessarily require cognition. These evaluations are determined, in part, by subjective factors. The type of emotion an individual experiences, as well as the intensity of their emotional response, will be determined by cognition. Thus emotion is partly cognitive. But emotion is valenced and cognition is not, so cognition cannot account for at least one property of emotion. Hence emotion is partly cognitive, but it cannot be reduced to its cognitive parts.

The phenomenal properties of emotion that cannot be explained by cognition are determined by bodily feelings. When emotion is elicited, a cascade of biochemical events unfolds within the body, changing it at a cellular level. These changes partly determine what it's like to have an emotion. Emotion, therefore, is partly constituted by feelings. But emotion is open to reason and feelings are not, so emotion has at least one property not held by feelings. Hence emotion is partly constituted by feelings, but it cannot be reduced to its feeling parts.

Finally, the intentionality of emotion is partly determined by perception. We experience emotion in response to objects and events in the world, and the intentional objects of emotion are perceptual objects. Thus emotion is partly perceptual. But emotions have second-orders and perceptions do not, so perception cannot account for at least one property of emotion. Hence emotion is partly perceptual, but it cannot be reduced to its perceptual parts.

On the basis of these arguments, it can be said that emotion meets the first necessary condition for ontological emergence:

1. Emotion has cognitive, feeling, and perceptual parts to which it cannot be reduced.

In the conclusion to Part I, I said that my claim that emotion has cognitive and perceptual parts can be understood as a claim that emotional abilities draw on both cognitive and perceptual abilities. Cognitive and perceptual abilities are otherwise characterised ‘faculties’. As emotion draws on cognitive and perceptual faculties, I proposed that emotion be characterised as a faculty. On my view, in addition to our cognitive and perceptual facilities, human beings also possess the faculty of emotion, which blends together thoughts, feelings and perceptions.

In Part II I argued that emotion has a causal effect on its mereological parts. At the level of the emotional faculty, emotion has an effect on decision making, on cognitive bias, and on self-deception. At the level of the individual emotion, a token of an emotion type

can be a reason for action. Thus, emotion has a causal effect on cognition. Emotion also causally affects feelings. At the level of the emotional faculty, emotion has a causal effect on the character of one's life in terms of its happiness or unhappiness. And an individual token of an emotion type can causally affect how one feels about, or towards, oneself. Thus emotion has a causal effect on feelings. And finally, emotion has a causal effect on perception. At the level of the faculty emotion causally affects perceptual selectivity. And an individual token of an emotion type can have a causal effect on higher-order perception. Thus emotion has a causal effect on perception. Putting these effects together, emotion can be said to have a causal effect on its cognitive, feeling and perceptual constituent parts. When a complex system has a causal effect on its mereological parts, this effect is otherwise known as downward causation. Thus emotion meets the second necessary condition for ontological emergence:

2. Emotion demonstrates downward causation.

The faculty of emotion meets the individually necessary, and jointly sufficient, conditions for ontological emergence. It has mereological parts to which it cannot be reduced, and it demonstrates downward causation. As an ontologically emergent faculty, emotion is different in kind from the cognitive and perceptual faculties on which it supervenes. Thus the ontologically emergent faculty of emotion can be said to be *sui generis*. In short: **Emotion is an ontologically emergent *sui generis* faculty.**

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