Wittgenstein's Investigations and Damasio's Explanations: A Comparative Study of Emotion

MSc Thesis (*Afstudeerscriptie*)

written by

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Abstract

This thesis compares philosopher Ludwig Wittgenstein's conceptual analysis of emotion with neuroscientist Antonio Damasio's empirical hypotheses regarding emotion. Specifically, the project proceeds in five main steps: First, Wittgenstein's and Damasio's respective objectives and methodologies are presented, in order to provide the contexts within which to examine the results of their work. Also covered are the objectives and methodology of Maxwell Bennett (a neuroscientist) and Peter Hacker (a philosopher). Bennett and Hacker have jointly propounded a particular view on the relation between conceptual analysis and neuroscience, and they have critiqued Damasio's hypotheses from a philosophical standpoint. Second, Wittgenstein's investigations of emotion and other psychological concepts are explicated in depth. Topics treated include his analysis of images, impressions, and sensations; his distinction between phenomena and phenomena of emotion; characteristics that he analyzes emotions to have; his account of ascription of emotion; and his response to the question "What is emotion?" The material draws directly from Wittgenstein's many remarks in the philosophy of psychology, and special care is taken to interpret his remarks as conceptual statements about what makes sense (rather than as factual statements about what is true or false). Third, Damasio's research with respect to emotion is outlined, based on the three books he has written on that topic. Definitions of pertinent terms are given, including his definitions that explain what emotions and feelings are. His somatic-marker hypothesis is described, as is some of the empirical research that he has used to develop and test his hypotheses. Fourth, results from Wittgenstein's and Damasio's investigations of emotion are compared and contrasted. Individual subjects under consideration are mental images, the ascription of emotions and feelings, Wittgenstein's and Damasio's answers regarding what emotion is, and the role that our ordinary notion of emotion plays in Damasio's empirical studies of emotion. Within these areas, suggestions are made concerning how each author's work may bear upon the other's. Fifth, Bennett and Hacker's general account of how conceptual analysis of everyday language can affect neuroscience is briefly considered in the case of Damasio; and in conclusion, it is proposed that neuroscience can (and should) have an impact on everyday language as well.

Acknowledgements

Contents

Any explanation has its foundation in training. (Educators ought to remember this.)

Zettel 419

1 Objectives and Methodology

1.1 Overview of the Thesis

What does it mean to *understand emotion*? If Ludwig Wittgenstein's analysis is accepted, then what it means to understand emotion is revealed in the ways language users employ the concept of understanding in connection with the concept of emotion. Moreover, the criteria for understanding may be expected to differ depending on the context in which the understanding is taking place. The context will therefore also determine what type of learning or investigations will yield understanding. For example, an average language user may understand emotion when he correctly uses emotion words, and this understanding is gained simply through his interaction with others who use the same language, both when he learns language as a child and in adult life. A philosopher may understand emotion when he describes the average language user's use of emotion words, and this understanding comes about by studying that use. A scientist may understand emotion when he defines emotion in a way that is supported by the results of empirical experiments, and this understanding is obtained by conducting experiments and forming hypotheses.

With these ideas as the backdrop, this thesis looks at two distinct viewpoints regarding what understanding emotion involves. On the philosophical side, there is the view found in the later philosophy of Wittgenstein, and in particular, in his analysis of emotion and other psychological concepts. For Wittgenstein as a philosopher, understanding emotion has to do with developing a perspicuous representation of the concept of emotion and the ties between emotion and other concepts.[1] On the scientific side, there is work by Antonio Damasio. Damasio is a prominent neuroscientist who has presented many of his findings and hypotheses regarding emotion in a series of books intended for general audiences. In Damasio's case, understanding emotion requires saying what emotion is and explaining its neural basis. In other words, Damasio seeks a definition of emotion that is consistent with the outcomes of neuroscientific research.

Corresponding to these different perspectives are different methods of studying emotion and different types of insights regarding emotion. The thesis reviews these methods and compares results that Wittgenstein and Damasio have each obtained by following their respective methods. Such a comparison also provides an additional way to examine emotion. For it introduces the question of how results of the various studies of emotion relate to one another. In this way, the thesis serves too as a point of entry into the more fundamental topic of the relationship between philosophy and science, or more specifically, between philosophical conceptual analysis (of

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[1]For language users in everyday life, understanding emotion involves (according to Wittgenstein) using emotion terms correctly, but not necessarily *describing* that use.

emotion) and empirical, neuroscientific research (regarding emotion). The exact structure of the thesis is described below.

Wittgenstein's goals and methods are presented in §1.2, and §1.3 gives Damasio's goals and methods. These sections help put Wittgenstein's and Damasio's results in the appropriate contexts. Next, §1.4 briefly presents one suggestion, made by Maxwell Bennett and Peter Hacker, as to how conceptual analysis can inform neuroscience.

A central part of the thesis is §2, which explicates key components of Wittgenstein's philosophy of psychology and his analysis of emotion. This section handles a variety of topics, including images and impressions, characteristics of emotions, phenomena of emotion, and the ascription of emotion. A notable feature of §2 is that it systematically interprets Wittgenstein's remarks as conceptual (i.e., grammatical) statements about what makes sense, not as factual statements about what is true or false.

Damasio has written in detail about emotion in *Descartes' Error*, *The Feeling of What Happens*, and *Looking for Spinoza*. Relevant contents of those three books are therefore summarized in §3. Attention is paid to Damasio's somatic-marker hypothesis, his definitions of what emotions (and feelings) are, and some of the laboratory experiments that he has conducted to test his hypotheses about emotion.

In §4 and §5, results from earlier in the thesis are brought together. For instance, comparisons are made between Wittgenstein and Damasio with respect to mental images, ascription of emotion, and responses to the question "What is emotion?" Also, initial conclusions are drawn concerning the relationship between Wittgenstein's work and Damasio's work and between philosophical and scientific studies of emotion in general.

Having outlined what the thesis covers, it is relevant at the outset to mention two important limits as well. First, discussions of Wittgenstein's philosophy in §1.2 and §2 have been restricted to the elements that seem most essential to the purposes of this thesis. Furthermore, even within Wittgenstein's analysis of emotion itself, it has been necessary to omit discussions of certain characteristics (such as that emotions color thoughts). Second, results from Bennett and Hacker's *Philosophical Foundations of Neuroscience* are only tangentially considered in this thesis. Bennett and Hacker's critiques of Damasio's hypotheses and their proposals regarding the relation between conceptual analysis and neuroscience are pertinent issues to address. But again, the scope of the thesis project did not allow that to be done.

It is also informative to describe the motivating factors behind the choice of material discussed in this thesis and the way in which that material is presented. Martin Stokhof, the thesis supervisor, suggested exploring the relation between philosophical conceptual analysis of emotion and empirical emotion research, and in particular, Bennett and Hacker's conceptual critiques of Damasio's work. I began working on that topic by read-

ing Damasio's books and relevant chapters of *Philosophical Foundations of Neuroscience*. In addition, I read a number of chapters in Malcolm Budd's, Paul Johnston's, and Joachim Schulte's books (cf., the Bibliography of this thesis) in order to acquaint myself with Wittgenstein's philosophy of psychology and get an indication of which of Wittgenstein's remarks philosophers consider relevant to the subject.[2] But when I started to read Wittgenstein's work itself in depth, I became enthralled by its complexity and its subtlety. I realized at that time that I wanted the thesis to concentrate on Wittgenstein's philosophy and offer a more comparative assessment of Wittgenstein and Damasio. I also knew that the best preparation for doing future research in philosophy would be to conduct the work for my Master's thesis as independently as possible. I therefore developed both the overall structure and the specific content of the thesis on my own. Further, instead of writing an exposition of other authors' ideas about Wittgenstein, I studied and interpreted Wittgenstein's remarks myself. For completeness, areas where I have found my discussions to be similar to (or have a specific relation to) other literature are mentioned either in the text or in footnotes. Also, Martin Stokhof gave me valuable and interesting feedback on each of the sections of this thesis after they were written, and I have lightly edited some passages for clarity based on his comments. But to preserve the independence of the thesis, only §1.2 (the first section I wrote on Wittgenstein) has been revised philosophically based on his comments.

A final introductory comment is in a practical vein: Due to the frequency with which some sources are cited in this thesis, abbreviations of book titles have been used in place of author and date of publication for the works by Bennett and Hacker, Damasio, and Wittgenstein.[3] In addition, citations to these references appear without "p." or "remark" listed.[4] So, for example, a citation to *Descartes' Error*, p. 50, is written as "DE 50," and a citation to *Zettel*, remark 10, is written "Z 10."

1.2 Wittgenstein's Objectives and Methodology

The task of philosophy, according to Wittgenstein, is to provide accurate descriptions of our everyday use of language and arrange these descriptions in a way that allows us to clearly see similarities, differences, and connections between uses of words (PI 109, 124, 127, 132). Wittgenstein calls such an arrangement a "perspicuous representation" [*übersichtliche Darstellung*]

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[2]The books by Budd, by Johnston, and by Schulte were not just a source of information, however. The deft and philosophically rigorous way in which the authors deal with Wittgenstein's remarks gives students a standard toward which to aspire.

[3]A list of these abbreviations appears at the end of the thesis.

[4]Citations of *Last Writings on the Philosophy of Psychology*; *On Certainty*; *Philosophical Investigations*, Part I; *Remarks on the Philosophy of Psychology*, Vol. 1; *Remarks on the Philosophy of Psychology*, Vol. 2; and *Zettel* refer to remark numbers. Citations of all other sources refer to page numbers.

(PI 122). The outcome of this work will be the elimination of philosophical problems, for these problems arise because we do not correctly or completely understand the use of certain words (PI 90, 122-123).[5] Philosophical investigation is therefore grammatical investigation (PI 90), where "grammar" is construed broadly to encompass the rules that describe all the ways in which we use language (PI 496-497); and the aim of philosophy is thus to obtain accurate, properly-organized descriptions of grammar, from which we can in turn gain a clear, overall ("synoptic") view of our language use. Wittgenstein also refers to philosophical investigations as "conceptual investigations," a phrasing that emphasizes the non-factual or non-empirical nature of the philosophical enterprise (Z 458). This alternate terminology in addition captures the idea that for every word (e.g., "emotion," "[to] think"), there is an associated concept (e.g., the concept of emotion, the concept of thinking), and this concept is related to the grammar of the word.[6]

Wittgenstein remarks that more than one ordered description (i.e., perspicuous representation) of grammar is possible, and the philosophical problems that we seek to eliminate will be what guide the course of the investigation (PI 132). For example, in developing a perspicuous representation we can focus strictly on describing the ways in which language is *actually* used. But in some cases, it can be useful to reflect on ways in which language *could* be used as well.[7] We can also concentrate more narrowly on certain fragments of grammar (e.g., the grammar of psychological words), rather than on grammar as a whole. Moreover, when studying a given fragment of grammar, it will likewise be possible to develop more than one perspicuous representation of that fragment, and which perspicuous representation is actually produced will depend on the particular philosophical problem that is to be eliminated. For these reasons, Wittgenstein's "method" is better viewed as a collection of similar techniques, since each philosophical investi-

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[5]This is not to suggest that we misunderstand *how* to use language. (Any competent speaker will have the understanding needed to use words correctly.) Rather, Wittgenstein is suggesting that there are fundamental aspects of the use that we misunderstand or fail to see, precisely because the use itself is so second-nature to us (PI 129). That is to say, misunderstanding occurs in our reflection on language use, not in the use itself.

[6]Because of these characteristics and relationships, the terms "grammatical," "conceptual," and "logical" are used more or less interchangeably throughout this thesis; and when the perspective on philosophy is Wittgensteinian, "philosophical" is another variant of these adjectives. Also, no assumption is made regarding the primacy of grammar versus concepts. Specifically, this thesis presupposes neither that (1) we have certain concepts and then "set up" grammar to embody those concepts nor that (2) we have grammar or language, which then determines or establishes what our concepts are/can be.

[7]In the opening pages of the *Philosophical Investigations*, for instance, Wittgenstein imagines a "primitive language" used by builders and investigates what the features of this language can tell us about our own language. Another (related) technique is to imagine the world as different from the way it actually is and then investigate how we would use our language in that imaginary situation (e.g., PI 312), thereby helping us to understand the full scope of our concepts.

gation is an activity that involves its own method, which is uniquely shaped by the specific problems under consideration (PI 133).

Wittgenstein's position regarding philosophy can be understood more fully if we compare it with what Wittgenstein says philosophy *is not* (PI 109). Wittgenstein explicitly states, for instance, that the grammatical elucidations philosophy offers are to be in no way explanatory or hypothetical; they are to be only descriptive. Also, philosophical problems are not empirical problems, and hence philosophical problems are not solved by appeal to any new (e.g., linguistic or psychological) experience(s); rather, they are solved by perspicuous organization of what we already know (and have "always" known) about language, independent of any particular experience(s).[8] As Wittgenstein notes, these features all differentiate philosophy from science. Wittgenstein furthermore insists that his own philosophical study of psychological concepts is concerned not so much with exactness as with obtaining a "synoptic view" [*Übersichtlichkeit*] of the concepts (i.e., of the grammar) under investigation (Z 464).

There are a number of points regarding Wittgenstein's characterization of philosophy that should be discussed. First, the proposal that philosophy should only (and need only) describe, and not explain, derives from considerations such as the following. Wittgenstein says that, for philosophical purposes, "*essence* is expressed in grammar" (PI 371).[9] In particular, the essence of a word "x" (and of the concept that corresponds to "x") is *not* found by asking "What is x?" A philosopher who asks a question of this form mistakenly presupposes, according to Wittgenstein, that beneath the grammar of "x" there is some hidden essence of x (PI 91-92). Such a hidden essence would be revealed in a definition of (i.e., in an explanation of) what x is. But Wittgenstein argues that if we look at how "x" is actually used, we will see that there is no exact definition that covers all uses of the word "x" (PI 24, 66-67).[10] Thus, philosophy does not need to provide any *explanations*. For there is no hidden essence to explain (e.g., via a definition), and what is "open to view" (such as how words are used, that is, grammar itself) does not stand in need of explanation–it can be *described* (PI 126). We can therefore conclude that the objective of philosophy is

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[8]It seems that Wittgenstein supposes we have this knowledge of language in virtue of our linguistic competence. So once we are competent speakers (i.e., once we are able to use language correctly), we possess all grammatical knowledge that is relevant for eliminating philosophical problems. It should be specifically noted that this competence is not, on Wittgenstein's view, an "individual" matter. Rather, competence derives from the existence of a linguistic community, of which an individual can be a part.

[9]This thought is related to Wittgenstein's idea that the meaning of a word is in general its use within a language (PI 43), so a word's grammar also reveals the word's meaning.

[10]Wittgenstein does allow that, if we choose, we can impose a certain exact definition upon a word. Doing so will correspondingly change the grammar of the word (e.g., by limiting the word's possible uses), and such a definition is anyway not necessary for the word to have a perfectly clear role in our grammar (PI 68-69).

to provide descriptions and not explanations of any sort. Moreover, when these descriptions are accurate and purposefully-organized, they alone will eliminate the philosophical problems manifested in questions such as "What is a question?" (PI 24), "What is a proposition?" (PI 92-93), and "What is a number?" (AWL 164). Since once we obtain a proper view of grammar, we will realize that we do not even need to ask these questions.

An example Wittgenstein gives that illustrates this line of thought is that of "knowledge" (BB 26-27). We might at first be inclined to think that "What is knowledge?" is a difficult philosophical question standing in need of an answer. But this question only arises, Wittgenstein claims, as a result of our misunderstanding of the grammar of the word "knowledge." In particular, we mistakenly suppose there is an exact definition of the word "knowledge" that applies to every use of the word. That is, we mistakenly suppose that knowledge *is* something (for example, a mental state), and what it is is revealed in a definition of the term. (If we try to articulate such a definition, we will indeed be struck by the difficulty of the endeavor: Each time we seem to have successfully explained what knowledge is, we will nevertheless be able to discover a context for which the proposed definition does not fit.) When we look carefully at our use of the word "knowledge," however, we see that there are in fact a number of different correct uses of the word, and while no definition fits them all, everything a philosopher needs to understand about knowledge is contained in a description of those uses. Thus, the importance that we attributed to the question "What is knowledge?" vanishes, and with it, the accompanying "philosophical problem" of having to explain what knowledge is.

A further comment on this point is still in order. As mentioned above, Wittgenstein rejects the idea that there is a hidden essence underlying the different uses of a word. But Wittgenstein acknowledges that there will be *similarities* between different uses of a word, and he says that these similarities (rather than a hidden essence) are what lead us to use the same word for all the cases. An example Wittgenstein gives involves the word "game" (PI 65-66). Wittgenstein argues that there is no exact definition of what a game is that applies to every use of the word "game." That is, our concept of a game does not include some essential feature that is common to everything we would call a "game." For instance: In some cases, what we call a "game" has winners and losers (e.g., baseball); but in other cases, what we call a "game" does not have winners and losers (e.g., a child throwing a ball against a wall and catching the ball as it bounces back). So having winners and losers cannot be essentially part of our concept of a game. Moreover, Wittgenstein suggests that *no* (non-disjunctive) property will sufficiently define what a game is. But there will be various similarities between all the things we call "games," such as that some games share the property of having winners and losers, some games share the property of not having winners and losers, some games (each of

which may or may not have winners and losers) share the property of being enjoyable, etc. Wittgenstein labels these similarities "family resemblances" [*Familienähnlichkeiten*] and says games form a family (PI 67). Describing these similarities will amount to describing similarities between different uses of a word, which is, as outlined above, a fundamental task of philosophy. Following Wittgenstein's scheme, we can suppose that emotions also form a family, and a fundamental part of investigating the concept of emotion will be to delineate the various characteristics that certain emotions share (e.g., the shared similarities between joy and happiness, or between anger and fear).

Moving on, a second point to be made regarding Wittgenstein's characterization of philosophy is this: A consequence of limiting philosophy to the *description* of *grammar* is that, as Wittgenstein says, "If one tried to advance *theses* in philosophy, it would never be possible to debate them, because everyone would agree to them" (PI 128). In other words, if we accurately describe something that we all have in common (i.e., grammar),[11] so that we all agree on *what* is to be described, and we make no additional attempt to *explain* anything (e.g., we do not form hypotheses regarding language use or regarding some hidden essence of a concept), then there is nothing that can be disputed. In contrast to philosophy, scientific disciplines formulate hypotheses. These hypotheses are by nature explanatory, and hence they can generate predictions as to what will happen in certain circumstances. So whereas a philosophical thesis cannot be refuted, a scientific hypothesis can be refuted if the predictions of the hypothesis are found to conflict with empirical results.

Third, because scientific questions are fundamentally empirical, they can be answered, at least in principle, by obtaining new, relevant data.[12] But philosophical problems are, as Wittgenstein has pointed out, dissipated by attaining a proper view of our grammar. No particular empirical experience is required, and because all of the relevant information already exists and is accessible to us (since we are competent speakers), nothing *new* will be needed. A related point is that scientific answers, being explanatory, are meant to provide us with new information regarding the phenomena in question. But philosophical "answers" only describe how we use words. The insight that philosophy provides therefore just consists in seeing in a new

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[11]In principle, we will, according to Wittgenstein, acquire through the process of language learning the same grammar (i.e., the same rules for language use) as other speakers within our linguistic community. Although sub-groups within the community may use some language differently than its ordinary use (e.g., scientists in a particular field who have defined certain terms for a special use), that is not the case being considered here.

[12]Of course some scientific *work*, such as that in theoretical physics, is not what would be called "fundamentally empirical." But even this type of theoretical work ultimately generates empirically testable hypotheses. (Some might argue that work in string theory is an exception to this, however.) So the scientific *question* of whether a certain physical theory is correct will nevertheless be answered based on experimental data.

(more perspicuous) way what we *already* know.

Lastly, Wittgenstein's remarks suggest that he sees obtaining a synoptic view of grammar (as is made possible via construction of perspicuous representations of grammar) as being only philosophically driven. For he does not indicate that perspicuous representations and synoptic views are to be used for anything other than the elimination of philosophical problems. Also, it seems that the level of detail of his own grammatical (i.e., conceptual) analysis was chosen based on solely philosophical goals. So we might question whether Wittgenstein's study of grammar, or any Wittgensteinian analysis of grammar, can be used outside of philosophy. Specifically, how would such analyses apply (if at all) to questions posed, and answers given, within the sciences? This issue is addressed by Bennett and Hacker, who argue that a Wittgensteinian analysis of psychological concepts is relevant to neuroscience because neuroscientists are *philosophically* (that is, *conceptually*) confused about the concepts that appear in their theories (see §1.4 below). The relation between science and Wittgenstein's philosophical work is also a central topic of this thesis, and it is explored in §4 and §5 below.

Keeping in mind Wittgenstein's account of what philosophy should do and why it should do it, the issue of how, precisely, philosophy is to accomplish its goal of producing perspicuous representations of grammar can now be explored. The method Wittgenstein advocates has been foreshadowed above. Namely, providing an accurate, purposefully-organized description of how a word like "knowledge" is used (which will also function as a description of our concept of knowledge) will require examining the different ways in which the word "knowledge" is actually used and the ways in which it could be used. In the latter case, we would draw on thought experiments, relying on our linguistic competence to help us judge correct and incorrect uses of the word in the imagined situations.[13] But more specifically, Wittgenstein recommends considering what he calls "language games" involving the word (or the concept). A language game is an activity we perform using language; it is a practice in which language is used (where "language" includes, but is not limited to, verbal and written expressions). Examples of language games are making assertions, asking questions, giving orders (e.g., saying "Close the door!," pointing to the door and motioning that it should be closed, etc.), obeying orders, thanking (e.g., saying "Thank you," sending a note that reads "Thank you," etc.), forming and testing a hypothesis, presenting the results of an experiment in tables and diagrams, and solving an arithmetic problem (PI 7, 23). Wittgenstein notes that some language games that currently exist may "become obsolete and get forgotten," and new language games may come into existence (PI 23). For instance, perhaps at a point in the future, we will no longer *give orders*, but only *make requests*, so that in the future "Close the door!" will either make no sense or

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[13]The relevance of imagined situations underscores the conceptual nature of the project.

will only be interpreted as we would currently interpret the request "Please close the door." Cases in which language games get forgotten or come into existence coincide with a change in our language and our concepts.

By comparing various language games, we will notice similarities and differences between how words are used in each of the language games (PI 130), and the description of language games will function as the description of concepts, since the uses of a word embody the concept associated with that word. We might compare, for example, language games involving knowledge. Testing for knowledge of a given topic via an essay question and testing for knowledge of a given topic via a set of related multiple-choice questions are both language games.[14] In the former case, a student is said to have knowledge of the topic if and only if he can *provide* a correct answer. In the latter case, a student is said to have knowledge of the topic if and only if he can simply *recognize* the correct answer(s) as correct (or even just recognize that the wrong answers are wrong). Also, the criteria for ascribing knowledge in an everyday context differ from those used to ascribe knowledge in a scientific context. For instance: When a shortstop throws the ball to second base in time for the baseman to tag the runner "out," we say that the shortstop understands the concepts of wind resistance, gravity, etc., since this knowledge is necessary for him to produce the desired result (i.e., the ball moving with a certain speed in a certain direction). But in order for a physics student to demonstrate his knowledge of these concepts, we expect him to be able to draw vector diagrams of the situation and perform various mathematical calculations.[15] Seeing the types of distinctions illustrated in these examples helps us understand the complex concept of knowledge.

We might also compare different uses of words within the same language game. If we are talking about a child who is throwing a ball against a wall and catching the ball as it bounces back, it makes no sense to say "She won the game" or "She lost the game." But we can legitimately say "She enjoyed playing the game." If we are talking about a baseball game, it does make sense to say "Team A won the game." We can also say "All the players enjoyed playing the game." Comparing these features of the use of the word "game" within the language game of assertion helps us to better understand our concept of a game (such as by revealing that some games have winners and losers, while others do not). In addition, our concept of any particular game (such as baseball) is brought into clearer focus because we will see which assertions make sense, and which do not, for that particular game.

An important feature of language games is that Wittgenstein sees them

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[14]In principle, answering just one multiple-choice question correctly is probably sufficient for ascribing some knowledge. But in practice, answering a set of related questions correctly is usually necessary because of the possibility of correctly *guessing* an answer.

[15]This example assumes that the concepts (e.g., of force) are the same in both the everyday context and the scientific context. This assumption could, however, be called into question.

as "foundational" for the study of our grammar (and our concepts). Especially with regard to psychological concepts, we might be tempted to think that introspection, rather than language games, will provide us with an understanding of the concepts. Wittgenstein maintains, however, that essence is found in grammar; and furthermore, introspection can only yield a statement regarding what is true for an individual at some time (LPP 236; RPPI 212). In relation to this latter conclusion, Budd (1989) gives the following argument that even if the essence of a psychological concept could be expressed by a definition, introspection could never yield that definition (pp. 8-9):[16] To use introspection to help produce a definition of what a certain concept is, the individual would need to know that what is happening to him psychologically at a given time is essential in order for the psychological term to apply. That is, he would need to know that what is happening to him is not something that happens just to *him* and fails to happen to other people when the term applies to them. But this means that he must already know (prior to introspection) what the essence of the concept is; otherwise he will never be able to definitively recognize any inner happening as essential to the concept. Therefore, introspection cannot be used to determine a definition of a psychological concept. With introspection thus eliminated as an alternative, we can see that considering language games is a crucial part of our attempt to understand our grammar (and our concepts).

There is also another sense in which at least some language games are "foundational."[17] Wittgenstein holds that "the primitive language-game we originally learned needs no justification, and false attempts at justification, which force themselves on us, need to be rejected" (RPPII 453). Wittgenstein also claims "Instinct comes first, reasoning second. Not until there is a language-game are there reasons" (RPPII 689). So in other words, language games are primary in a philosophical sense (i.e., they cannot be reduced to other concepts). Furthermore, when we appeal to language games in order to describe our language use (and our concepts), we do not need to justify that *these* games are the "correct" ones. That is, we do not have to prove that the concepts we have are somehow "correct," or "more correct" than others, and we do not need to (and cannot) justify why we engage in *these* language games.[18]

In summary, Wittgenstein proposes that philosophy is grammatical (and

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[16]Wittgenstein makes a similar point (LPP 3, 237).

[17]There seems to be a question whether the following claims apply to *all* language games, or just to some set of *basic* language games. Schulte (1993) suggests, for instance, that some language games (such as those involving the word "pain," since these language games derive directly from pre-linguistic pain behaviors) are more basic than others (p. 18). If Schulte is right, then perhaps (as Schulte seems to believe) the following remarks by Wittgenstein apply only to those basic language games.

[18]This is not to deny that various *explanations* of and *reasons* for our language use can be given (e.g., historical, sociological, biological). But Wittgenstein regards such questions of explanation as categorially distinct from questions of justification (e.g., OC 474-475).

conceptual) investigation that aims at providing a perspicuous representation of our grammar (and our concepts). This accurate, purposefully-organized set of descriptions is constructed by looking at the everyday use of words in language games (and hence by looking at concepts), and in particular, by describing the similarities/family resemblances, differences, and connections we see. From a perspicuous representation of our grammar (and our concepts), we will achieve a synoptic view of language (and our set of concepts). Having this type of view will eliminate philosophical problems, which arise because of our confusion as to how words (and concepts) are used. Philosophical investigation differs from scientific investigation in a number of ways, but it remains a question whether there is nevertheless a place in science for the kind of grammatical and conceptual elucidation that philosophy offers. Conversely, we might also ask whether scientific results can, or should, influence the results of philosophy.

1.3 Damasio's Objectives and Methodology

Antonio Damasio is a neurologist and neuroscientist who treats patients afflicted with neurological disorders and studies the neural bases of these disorders. An important part of his research is his attempt to explain what emotions and feelings are and what neural structures are associated with them. He has also developed the somatic-marker hypothesis, which postulates a link between (impaired) emotion/feeling and (impaired) decision-making. Damasio's proposals are based on clinical observations, and he has conducted various laboratory experiments aimed at testing his hypotheses.

Damasio's investigations are grounded in the "scientific method." This method is a sequence of procedures designed to yield scientific knowledge. The steps in the scientific method are as follows (Castagno 2004, pp. 509-510):

(1) observe a phenomenon

(2) develop hypotheses[19] (that is, develop reasonable explanations for the observed phenomenon)

(3) test the hypotheses via experimentation

(4) draw a conclusion from the results

In practice, step (4) may involve revising the initial hypotheses based on the experimental results, and steps (3)-(4) will then be repeated until consistency between the hypotheses and experimental results are obtained. Furthermore, these four steps represent the idealized form of a scientific inves-

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[19]A hypothesis (or set of hypotheses) that has been adequately confirmed by experiment and has sufficient predictive and explanatory power will be labeled a "theory" (cf., Neufeldt 1991, pp. 666, 1387). What counts as "adequate" confirmation may vary, depending on the hypothesis in question. Also, terminology is often loosely applied; unverified hypotheses and hypotheses that are not yet adequately verified are sometimes called "theories" instead. (Damasio refers to his own scientific suggestions as "hypotheses.")

tigation; in actuality, the process is often more complicated.

There are slightly different ways of formulating the scientific method. For instance, the method is alternately defined as "an orderly method used in scientific research, generally consisting of identifying a problem, gathering all the pertinent data, formulating a hypothesis, performing experiments, interpreting the results, and drawing a conclusion" (Steinmetz 1986, p. 578). The steps of the method may also be tailored to fit the nature of the discipline in question. For example, Damasio states that the goal of neuropsychology is "to explain how certain cognitive operations and their components relate to neural systems and their components" (DE 53). Then with respect to neuropsychology, Damasio outlines the following general procedure that he uses in his investigations (quoted from DE 53; see also FWH 12):

> (1′) [find] systematic correlations between damage at given brain sites and disturbances of behavior and cognition
> (2′) [validate] the findings by establishing what are known as double dissociations, in which damage at site A causes disturbance X but not disturbance Y, while damage at site B causes disturbance Y but not disturbance X
> (3′) [formulate] both general and particular hypotheses according to which a normal neural system made up of different components (e.g., cortical regions and subcortical nuclei) performs a normal cognitive/behavioral operation with different fine-grain components
> (4′) [test] the hypotheses in new cases of brain damage in which a lesion at a given site is used as a *probe* to whether damage has caused the hypothesized effect

The relevant point to note for present purposes is that the scientific method and its off-shoots crucially involve explanatory hypotheses and empirical tests of these hypotheses.[20] This implies that scientific investigation (such as Damasio's work) is of a fundamentally different kind than that of Wittgensteinian philosophical analysis. For as detailed above (see §1.2), the latter proceeds instead by describing how we use language.

1.4   Bennett and Hacker's Objectives and Methodology

The goals of the book *Philosophical Foundations of Neuroscience* (Bennett and Hacker 2003), and the related paper *The Conceptual Framework for the Investigation of the Emotions* (Hacker 2004), are two-fold. Bennett (a neuroscientist) and Hacker (a philosopher) first seek to provide philosophical

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[20]Neither the term "empirical tests" here nor the term "experimentation" in step (3) above is meant to imply that *experiments*, strictly speaking, must be performed. Sequences of observations, for instance, might serve as empirical tests as well.

analyses of concepts that are of interest to researchers in cognitive neuroscience, such as thought and emotion. They then endeavor to utilize these analyses in order to locate "conceptual confusion" in neuroscience; that is, to locate instances in which neuroscientists have used the concepts incorrectly, where the realms of correct use have been made apparent via the philosophical analyses. These objectives, and the assumption that they can be attained, stem from Bennett and Hacker's beliefs regarding the nature of philosophy, the nature of contemporary cognitive neuroscience, and the relationship between philosophy and cognitive neuroscience.[21]

Bennett and Hacker's stance regarding philosophy derives from ideas expressed in the later work of Wittgenstein (see §1.2 above). For example, Bennett and Hacker suppose that philosophy is essentially conceptual analysis, the aim of which is to provide a clear account of the "conceptual structures" according to which we view the world and our experiences in the world. In particular, it is not the task of philosophy to construct any kind of theories; rather, philosophers should provide *descriptions* of our concepts and of the links between these concepts (PFN 378, 380, 399-402). Furthermore, Bennett and Hacker assume (following Wittgenstein) that the meaning of an expression is constituted by the expression's rule-governed use within a certain linguistic community. The desired descriptions are therefore to be obtained by reflection on speakers' ordinary, everyday use of the concepts (e.g., use of the terms "thought," "emotion," etc.) in question (PFN 382, 384, 402).[22] Along these lines, Bennett and Hacker emphasize that, in contrast to scientific hypotheses and theories, the conceptual clarifications that philosophy offers are neither empirical nor explanatory. For unlike scientific hypotheses and theories, they are not verifiable (or refutable) predictions and claims regarding what is true or false in the world. Instead, the conceptual delineation describes concepts based on our use of them and thereby provides a way of revealing not what is true or false, but whether a certain claim *makes sense* (i.e., is meaningful/has meaning) or is nonsensical (i.e., lacks meaning) (PFN 401).

So science is, according to Bennett and Hacker, concerned (only) with truth and falsity, whereas philosophy is concerned (only) with sense and nonsense. This seems to leave the two domains completely separated. Bennett and Hacker claim, however, that when cognitive neuroscientists form a hypothesis or theory about the neural conditions associated with emotion or thought or the like, their statements must presuppose these psychological

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[21]Bennett and Hacker's objectives, and the views that motivate them, are discussed in detail in the Introduction and Chapter 14 of Bennett and Hacker (2003). The remainder of this section provides a synopsis of that material.

[22]It should be pointed out that Bennett and Hacker explicitly assume that the "conceptual structures" that speakers possess in virtue of their ability to use language are not theories (e.g., they are not theories we develop based on interaction with other speakers and/or with the world) (PFN 380).

concepts (PFN 401-402). The same is true when neuroscientists frame questions to be experimentally addressed and when they interpret the results of their research. In other words, the neural explanations scientists give are intended to be related to certain psychological concepts, and hence the explanations must presuppose some notion of what these concepts are about. Bennett and Hacker claim moreover that the concepts involved in these situations are precisely those concepts that we all use in ordinary, everyday life. It is *not* in general the case that neuroscientists are using their own, technical concepts, whose names coincide with those of ordinary concepts but whose meanings are different (e.g., it is not the case that when neuroscientists use words such as "emotion" or "thought," they intend for these terms to have different meanings than they have in ordinary parlance) (PFN 384).[23] But these considerations imply that scientific statements that mention psychological concepts are thus subject to scrutiny of the kind philosophy can provide. Namely, philosophical conceptual analysis can help reveal whether a scientist has used a concept in a manner that makes sense or in a manner that does not make sense. Bennett and Hacker further suggest that it will be possible to distinguish two types of incorrect (i.e., nonsensical) use: one in which the word is intended to have its ordinary meaning but is used in a way that conflicts with the rules for its ordinary use; the other in which the scientist intends to re-define the term (i.e., to give it a new use), but then in actuality uses the term in a way that is only consistent with its *ordinary* meaning (PFN 6).

If a concept has been used incorrectly in either of these ways, then philosophical reflection will, Bennett and Hacker maintain, be able to show that the corresponding scientific statement is nonsensical (that is, the statement lacks meaning). Bennett and Hacker point out that this nonsensicality could have one of several negative consequences, depending on the nature of the statement. If the statement is hypothetical in form, then lack of meaning will preclude the possibility of empirical verification (or refutation) of the statement. For if the statement makes no meaningful claim, then there is nothing that empirical results could be said to verify (or refute) (PFN 382). If the statement has the form of a question to be answered by future experimental work, then Bennett and Hacker suggest that the subsequent research is likely to be "misdirected," since the research will be aimed at getting an answer to a misconceived question (PFN 2, 5). If the statement is a question or comment involving an "open problem" (i.e., a question or comment involving some issue that does not seem to have been satisfactorily explained by any previous work),[24] then nonsensicality essentially voids the usefulness

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[23]Bennett and Hacker argue as well that there is no *need* for scientists to replace ordinary concepts with specially-created, technical ones (PFN 4, 6, 386-388).

[24]This case would include the following possibilities: A scientist may pose a misconceived question or make a misconceived comment *regarding* some open problem, or it may be that the statement of the "problem" *itself* is misconceived.

and significance of the remark (PFN 408). Finally, if the statement is a description or interpretation of experimental results, then lack of meaning will prevent a "realistic assessment of [the results'] significance" (PFN 402) and may even propagate the conceptual confusion among other scientists who assume that the statement must be meaningful (PFN 391).

Any of these outcomes would obviously undermine the scientist's purpose in making the statement. Thus, Bennett and Hacker feel there is an important way in which philosophical work bears on cognitive neuroscience. For conceptual confusion leads scientists to unwittingly formulate nonsensical statements, which are in turn detrimental to the scientific enterprise. It is for this reason that Bennett and Hacker strive to give philosophical analyses of concepts used in cognitive neuroscience and to use the results of their analyses in order to locate conceptual confusion in that discipline (PFN 7). Bennett and Hacker's hope is that by drawing attention to the confusion, and by in addition providing a clear view of each relevant concept and its relation to other concepts, neuroscientists will be able to (1) eliminate their conceptual confusion, (2) correct the mistakes that have arisen from it, and (3) proceed with their work armed with a proper understanding of the concepts whose neural foundations they wish to study (PFN 7, 408).

2 Wittgenstein's Philosophical Investigations of Psychological Concepts

2.1 Description of Wittgenstein's Overall Project

Wittgenstein's investigation of psychological concepts reflects the general philosophical method that he advocates (cf., §1.2). Rather than attempting to explain *what* emotion *is*, for example, he explores *what it makes sense to say* about emotion. He focuses on the ways in which psychological words are used in everyday language and seeks to describe this use. Wittgenstein stresses that his interest is in *everyday* concepts, and he claims that psychological concepts are of this type. He is aware that some words have only a scientific meaning, while in other cases, everyday words are "borrowed" by scientists and given precise definitions intended for specialized use.[25] But Wittgenstein maintains that the psychological concepts he studies are not scientific concepts (RPPII 21, 62). In conjunction with this, Wittgenstein acknowledges certain difficulties that are inherent in his inquiry (RPPI 554, 556; RPPII 20, 194, 331; Z 111-115, 119, 121).[26] For instance, our close familiarity with everyday words and concepts produces in us a "false sense of simplicity" regarding their use. That is, because we use everyday words easily and automatically, we initially expect the descriptions of their use to be correspondingly simple. Our intuition tells us that a word like "thinking," which we use frequently without any conscious reflection on it, is only employed in a limited number of ways, each of which is very similar to the others. These instincts are misguided, however, and thus we must be careful not to be mislead during a philosophical investigation. Another obstacle that stands in the way of successful philosophical investigation of everyday concepts, including psychological ones, is this: Although we are completely competent in *using* everyday words and can judge whether a particular use is correct or incorrect, we lack proficiency in *describing* the ways in which everyday words are used. Wittgenstein likens this to being able to get from any place to another in a city while nonetheless being unable to draw a map of that city, and he suggests that this situation occurs for two reasons. First, we are not, in general, taught everyday words by means of description of their uses. So our exposure to descriptions is limited when we first learn

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[25]Wittgenstein mentions that scientists will also often define everyday expressions by reference to phenomena that can be measured exactly and suppose that in doing this, they have *found* the meaning of the expression (e.g., as if this meaning had been hidden). But actually, the scientists have changed the meaning of the expression. Wittgenstein claims that this type of situation is common, and in such cases, the meaning of an expression will usually "oscillate" between the scientific meaning and the everyday meaning without anyone even realizing that the expression is being used differently in the different contexts (Z 438).

[26]Budd (1989) also discusses this issue, and the points he makes include those in the remainder of this paragraph (pp. 4-6).

to use the words. Second, what is relevant in most cases is being able to use words correctly, not being able to describe this use. Hence, outside of doing conceptual analysis, we do not bother to try to improve our ability to describe the ways we use language.

As mentioned in §1.2, Wittgenstein wants to gain a synoptic view of psychological concepts, and this involves considering a variety of such concepts and the connections between them. In this spirit, Wittgenstein puts forth several broad classification systems for psychological concepts (e.g., RPPI 836; Z 472). For example, Wittgenstein suggests that psychological verbs have the distinguishing feature that correct use of their third person present is verified by observation of behavior, whereas the first person present usage is not. Following this division, psychological statements in third person present can be viewed as containing information, while utterances in first person present may lack this content and be more like expressions (e.g., like "ouch!"). Wittgenstein also considers whether psychological verbs should be collectively termed "verbs (or concepts) of experience." Of these, "concepts of undergoing" would be a sub-group, where undergoings have duration, intensity, and a course, and are not characters of thought.[27] Wittgenstein says that emotions "color" thoughts, and all emotions are experiences but not undergoings. Similarly, different sensations are alike in that all sensations have duration and degree. Sense-perceptions too (i.e., seeing, hearing, tasting, smelling, and touching) have connections, and these connections are the basis for calling all these things "sense-perceptions" (Z 474-475).

It should be noted that a sentence such as "Sensations have duration" can be interpreted either as a factual statement about the referent of "sensations" or as a philosophical statement about concepts.[28] In the former case, the claim is that certain phenomena or objects (namely, sensations) have a certain property (namely, duration). In the latter case, it is being said that the psychological word "sensation" can only be correctly used (i.e., only makes sense) in contexts in which it is also correct to talk of "duration." "Sensations have duration" is, in this sense, a description of language use (or, alternatively, an instruction regarding how to use a certain fragment of language).

Within the context of this thesis, "factual" can be read as "empirical," and whereas (Wittgensteinian) philosophers make conceptual statements, scientists make factual ones.[29] Generally speaking, however, mathematical claims (which are not typically considered to be *empirical* claims) could

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[27]These characteristics are further explained in §2.2.

[28]The remarks that follow regarding the possibility to giving two different interpretations of a sentence are directed only at certain sentences, not necessarily *all* sentences. Also, it is not important here whether a sentence that can be interpreted philosophically or factually or both ways might also have some other interpretation.

[29]As remarked in §1.2, the words "conceptual," "grammatical," "logical," and "philosophical" are also more or less synonymous in this context.

be interpreted in both the conceptual sense and the factual sense outlined above. This is because the distinction between factual and philosophical statements is not intended to include a distinction between, say, types of epistemic justification (e.g., it is not assumed that the truth of a factual statement is known *a posteriori*). Rather, the difference is just this: A factual statement is about what [something] is; a conceptual statement describes how language is used (that is, it describes our grammar and our concepts), and by virtue of this, it tells us which sentences make sense. (A sentence "makes sense" if and only if the words/concepts in the sentence are correctly used together. More generally, something makes sense if and only if it is part of, or can be part of, a language game. In addition, because Wittgenstein identifies meaning with use, a sentence makes sense if and only if it has meaning.[30]) Also, a conceptual statement can be "true" or "false," but its truth is based solely on whether it gives an accurate description of grammar, rather than depending on how the world is (i.e., on "what is") in the way that the truth of a factual statement does.[31]

Now, the conceptual interpretation is explicit in a comment Wittgenstein makes regarding visual impressions: "One can't look at the impression, that is why it is not an object. (Grammatically)" (RPPI 1085). Grammatically (that is, conceptually), the sentence "An impression is not an object" indicates that the concept of an impression differs from that of an object. Specifically, we do not *look at* impressions, but we do *look at* objects.[32] Wittgenstein also notices that one of the *logical* criteria for sense-experiences is that they give us knowledge of, or acquaint us with, the external world. Moreover, this is a conceptual criterion only (RPPI 702; Z 477). That is, our talk about sense-experiences has certain connections with our talk about the external world, and these connections are lacking in language games involving (e.g.) imagination and the external world.[33] But this does not imply that there is a particular empirical connection between the external world and sense-experiences, and the sentence "What is common to sense-experiences is that they give us knowledge of the external world" should thus not be interpreted in the factual sense.

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[30]Of course, knowing that a sentence makes sense is not the same as knowing *what* meaning the sentence has.

[31]The sentence "Sensations have duration" itself makes sense. Furthermore, interpreted philosophically, the sentence is "true," and it tells us that "The pain lasted for three days," for instance, makes sense.

[32]In other words, "object" is used in language games with "look at" in ways that "impression" is not. Or in terms of concepts: "Looking at," like "sensation" and "duration," is associated with a concept, and based on the concepts of impressions and looking at, the sentence "I am looking at the impression" is nonsense. (Connections between "looking at" and "object," which are lacking between "looking at" and "impression," are discussed in §2.2.)

[33]For example, it is part of a language game to say "I see a tree in the courtyard, so there is probably a tree in the courtyard," but not "I am imagining a tree in the courtyard, so there is probably a tree in the courtyard."

Factual and grammatical interpretations can both be seen in other, non-psychological, domains as well (e.g., RPPI 1086; Z 427, 458-459). One example Wittgenstein gives is the sentence "The chair goes on existing whether I am looking at it or not." Interpreted factually, the sentence is true only if the chair in front of me continues to be in front of me when I close my eyes. Grammatically, the sentence is a statement about the concept of a chair and the concept of existence. In particular, we only use the word "chair" (i.e., it only makes sense to use it) in cases where our ceasing to be visually aware of a thing does not alter, for instance, how we reply to certain questions. So if I look at the chair and then close my eyes, and someone asks me, "Is there a chair in your room?," I will still say "Yes." Or if, while my eyes are closed, someone in another room yells, "I need a place to sit," I might still respond "You can sit in the chair that's in this room."

Wittgenstein also discusses sentences such as "The room has length" and "There are physical objects" (BB 30; OC 35-37). With respect to the former, for instance, Wittgenstein suggests that the question "Has this room a length?" makes no sense.[34] Moreover, the typical answer "Of course it has" is really just an attempt to brush aside the nonsensical question; it is a (poor) substitute for the response "Don't ask nonsense." Wittgenstein sees an alternative, meaningful way to respond to the question, however. Namely, "The room has length" can be interpreted as a grammatical statement that says that sentences like "The room is twelve feet long" make sense.[35] In the case of "There are physical objects," Wittgenstein remarks that a sentence such as "A is a physical object" is (only) an instruction regarding the use of "A" and "physical object" that is given to someone who does not understand what either "A" or "physical object" means. The sentence is just about language use and concepts, and specifically, the concept of a physical object. In other words, Wittgenstein believes that "A is a physical object" has only a conceptual interpretation. The conclusion he seems to draw is that "physical object" is not a term that appears with "there is" in our language games (i.e., the concept of a physical object is not a concept that "fits" with the concept of existence). Hence, "There are physical objects" is nonsense. Furthermore, it is nonsensical in the same way that the sentence "There is color" is nonsensical. And while Wittgenstein acknowledges that some

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[34]It must thus be assumed that Wittgenstein thinks "Has this room a length?" does not have a role in any of our language games. The *reason* it does not appear in a language game is unclear, however. For there is nothing "incompatible" about the concept of a room and the concept of length. This contrasts with another example from BB 30 in which Wittgenstein argues that "Do you know that this is what you wish?" is nonsense specifically because "know" is not used in cases where the possibility of doubt is excluded (that is, in cases where the concept of doubt does not apply, such as with respect to one doubting what one wishes).

[35]Again, to claim that "The room is twelve feet long" makes sense is to claim that the concept of a room has a relation to the concept of a measure of length. In contrast, to claim that the room is twelve feet long is to make a factual statement.

groups of philosophers interpret "There are physical objects" as expressing a meaningful empirical (i.e., factual) proposition, he maintains that it really is nevertheless a failed attempt to say something that is properly expressed in a different way.[36]

Along these lines, it is important to remember that introspection is not helpful in the study of psychological concepts; instead, considering language games is key. The link between concepts and language games (or, more generally, practices) is emphasized when Wittgenstein says, "The concept of pain is characterized by its particular function in our life. Pain has *this* position in our life; has *these* connections; (That is to say: we only call "pain" what has *this* position, *these* connections)" (Z 532-533). And this ties in with Wittgenstein's reminder "Do not say "one cannot," but say instead: "it doesn't exist in this game" . . . instead of "I can't exhibit my sensation" — [say] "in the use of the word "sensation," there is no such thing as exhibiting what one has got" . . ." (Z 134).[37] These are crucial points to keep in mind, because this perspective underlies Wittgenstein's remarks regarding psychological concepts. For Wittgenstein, philosophy (i.e., conceptual analysis) is about *use* (i.e., grammar), that is, about what language games are played, or could be played, with various words. It is not about *what is*, a subject that is addressed instead by Damasio in his scientific (i.e., factual, empirical) study of emotion.[38,39]

To be in keeping with Wittgenstein's goals and his attitude regarding philosophy, Wittgenstein's remarks that are the basis for §2 have been interpreted in the philosophical sense. Likewise, statements in §2 involving psychological words should be interpreted as conceptual comments. They should only be interpreted as empirical comments if they are specifically noted as such.

Throughout his work, Wittgenstein expands on many of the ideas laid

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[36]Wittgenstein does not in OC 37 mention exactly *what* he thinks "There are physical objects" is intended, but fails, to express. One might conjecture, however, that from his own point of view, the relevant idea is that there are language games involving instructions such as "A is a physical object," commands such as "Bring me A," and remarks such as "A is on the bookshelf."

[37]The word "exhibit," too, has certain roles within language games, and these uses delineate the concept of exhibiting. Furthermore, Wittgenstein's reminder applies to his own remark "One can't look at the impression." That is, as a grammatical comment, it is best phrased "There is no such thing as looking at the impression" or "It does not make sense to say "One looks at the impression.""

[38]That said, there are still a number of issues remaining, such as: Is Damasio's investigation into *what emotion is* successful? *Can* that investigation be successful? Or can emotion itself (i.e., as distinguished from, say, neural underpinnings of emotion) only be properly investigated conceptually? In other words, should neither philosophers *nor* scientists ask "What is emotion?"? These topics are covered in §2.4.4 and §4.1.

[39]Wittgenstein indicates that an inquiry into *what is* is also not part of metaphysics, which appears to ask factual questions but really is (or should be) concerned with conceptual questions (BB 26-27; PI 116; RPPI 949).

out in his classifications of psychological concepts. Furthermore, an integral part of his project is to identify and investigate areas where there is conceptual confusion surrounding psychological concepts, such as with respect to the ascription of psychological predicates and the privacy of emotions. As Wittgenstein says, "In order to know your way about an environment, you do not merely need to be acquainted with the right path from one district to another; you need also to know where you'd get to if you took this wrong turning. This shows how similar our considerations are to traveling in a landscape with a view to constructing a map" (RPPI 303). Wittgenstein's investigation is correspondingly quite extensive. Briefly presented in §2.2-§2.4 is Wittgenstein's thinking concerning some subjects that are pertinent when comparing Wittgenstein's philosophical work to Damasio's scientific work.

2.2   Images, Impressions, and Sensations

Wittgenstein differentiates between (mental) images [*Vorstellungen*] and impressions [*Eindrücke*], such as visual or auditory impressions, and sensations [*Empfindungen*]. Damasio, however, does not make this distinction in his hypotheses regarding emotion and its dependence on images (cf., §3).[40] It is therefore relevant to describe here Wittgenstein's conceptual analysis, so that we may later investigate, in §4.2, the relation between the philosophical results and Damasio's scientific work.

Wittgenstein points out numerous conceptual characteristics of images, impressions, and sensations (RPPI 836; RPPII 63, 90, 112; Z 472). These may be summarized as follows: Images fall into the category of "undergoings," which means that they have duration (alternately called "genuine duration"), intensity, and a course, and they are not characters of thought. Also, images are not pictures, images are subject to the will, and they do not inform us about the outer world. Impressions are a sub-class of undergoings, with the extra features that there are blend-impressions (for example, a visual impression of blue-green), and impressions are spatially and temporally related to each other. Impressions are not pictures either, but in contrast to images, they do inform us about the outer world. Sensations

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[40]In this thesis, it will not be considered whether Wittgenstein takes the concept associated with the word "Eindruck" to be one and the same as that associated with the word "Empfindung." Rather, Wittgenstein's remarks regarding impressions will be discussed when "Eindruck" appears in the German text, and his remarks regarding sensations will be discussed when "Empfindung" appears. Schulte (1993) suggests, however, that Wittgenstein simply replaces the term "impression," which is used in a classification system in RPPI, with the word "sensation," which is used in a classification system in RPPII (p. 31). Budd (1989) also seems to take the terms "impression" and "sensation" to be interchangeable (see pp. 102ff). But whether the concept of an impression is or is not different from that of a sensation is not important for the purposes of this thesis; what matters are Wittgenstein's arguments that the concepts (or concept) of an impression and of a sensation are (is) different from the concept of an image.

have genuine duration and degree. In addition, there are qualitative mixtures of sensations, and sensations give us information about the external world.

These descriptions are somewhat cryptic, however, and so it is worthwhile to expand upon them slightly. Possessing genuine duration, for instance, corresponds to the (grammatical) possibility of a person indicating when he begins to have (e.g.) an impression and when he ceases to have it. Moreover, because of this, it makes sense to say that a person has two impressions at the same time or at different times (Z 472). Having genuine duration is part of what separates the concepts of images, impressions, and sensations from other concepts, like those of knowledge, understanding, and intention (RPPII 51; Z 45, 82).[41] For one does not say "My understanding of how to solve the puzzle lasted from 10:32 a.m. to 9:50 p.m. on Monday." Nor does one say "There was a period of exactly six minutes during which I had the intention to learn how to differentiate, simultaneously with the intention to learn how to integrate."[42] But someone might say "The pain in my hand started (i.e., I began to feel the pain in my hand) at 10:32 a.m. on Monday, and it lasted until 9:50 p.m." It also makes sense to say "There was a six-minute period during which I had both a pain in my hand and in my foot."

It is important to take these as philosophical statements, that is, as statements about what language games are played with the words "understanding," "intention," and "pain." For instance, an individual may correctly say "I was in pain for ten and a half minutes this morning," because the concept of having pain is one that includes having precise starting and ending points in time. In other words: Grammatically, pain has genuine duration.

Images and impressions both have a course, which means that they can, in Wittgenstein's words, "run on uniformly or non-uniformly." Because images and impressions have duration, too, it seems likely that a feature of the concepts of an image and of an impression is that it is possible to indicate when an image or an impression changes. At one point, Wittgenstein even suggests that if there is genuine duration, then it makes sense to say "Pay attention and give me a signal when the impression or image you have alters" (RPPII 50; Z 81).[43] Yet he goes on to deny that we *pay attention to*

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[41]Wittgenstein refers to the having of impressions and sensations as "states of consciousness" and to knowing, understanding, intending, etc. as "dispositions" (RPPII 45). For detailed remarks regarding understanding, see PI 143ff, 321ff.

[42]For an alternate point of view, the reader is referred to an argument by Budd (1989), in which he reasons that believing and intending do meet criteria for having genuine duration although knowledge and understanding do not (pp. 14-15). Budd's argument seems to rely on a different (more factual) interpretation of Wittgenstein's remarks than the one proposed in this thesis.

[43]Wittgenstein hints at this same idea when he says that "...an important difference between dispositions and states of consciousness consists in the fact that a disposition is not interrupted by a break in consciousness or a shift in attention" (RPPII 45). For based

our images (or follow them with attention). Hence, on this account, images do not have genuine duration; in addition, the use of "image" may or may not include the possibility of indicating when an image changes. But regardless of such conclusions, it is at least clear that Wittgenstein considers the concept of change or alteration to be a component of the concepts of both images and impressions.

Again, it is worth explicitly noting that these comments should be interpreted in a conceptual sense. That is, they serve as descriptions of how words such as "image," "impression," "pay attention to," and "change," along with related concepts, are used in language games. They are not empirical remarks about an observable or discoverable nature of images, nor are they remarks based on information we gather via introspection (e.g., information regarding changes in images, our attention toward images, etc.). Moreover, the comments should not be seen as presupposing some underlying "metaphysics" regarding identity of images or impressions (e.g., that one image persists through time and itself changes, rather than ceasing to exist as soon as a change takes place).

Wittgenstein claims that images and impressions are not "characters of thought," but it is difficult to determine what he means by this. He may be suggesting that the concept of thinking is different from the concept of having images and the concept of having impressions. This could be paraphrased as "Grammatically, thoughts are not images or impressions."[44] Alternatively, Wittgenstein might be saying that there are not characteristic thoughts associated with images or impressions. This would stand in contrast to emotions, since emotions do have characteristic thoughts (cf., RPPI 836; Z 488).[45] Emotions also color thoughts, that is, thoughts can be sad thoughts or happy thoughts, etc. (RPPII 153); and this may suggest that to color thoughts is to be a character of thought. In other words, an emotion colors a thought by giving a certain "character" (e.g., sad, happy) to the thought. This interpretation would fit with Wittgenstein's classification scheme in RPPI 836. In that system, he denies that emotions are undergoings, seemingly just because emotions (which he says color thoughts) are characters of thought. But moreover, if (as proposed above), a character of thought has characteristic thoughts, then it is also plausible that a thought that is colored by an emotion is one that is characteristic of the emotion, and *vice versa*.

Schulte (1993) also proposes that to be a character of thought is to color thoughts, and the reasoning he gives for doing so is that it explains why emotions are not classified as undergoings in RPPI 836 (p. 29). But he

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on other remarks (e.g., Z 45), this "important difference" is almost certainly a difference with respect to having genuine duration.

[44]Factually, "Thoughts are not images or impressions" would imply that, whatever thoughts are, they are not made up of, or constituted by, images or impressions.

[45]The concept of being "characteristic of" is discussed in detail in §2.4.1 below.

further indicates that having associated characteristic thoughts is different than coloring thoughts, and he does not offer any other description of what it means for emotions to color thoughts (or be characters of thought). His interpretation therefore diverges from the interpretation given above. Budd (1989) likewise seems to identify being a character of thought with coloring thoughts (Chapter I, footnote 38, p. 169). For Budd, however, a thought colored by happiness (for example) is one I think with happiness, which means that I experience happiness that is "directed towards some constituent of the content of the thought" (pp. 154-155). This too differs from the interpretation above, which suggests that a thought colored by happiness is one that is *characteristic* of happiness.

One of the misconceptions that Wittgenstein attempts to dispel is that images (and visual impressions as well) are "inner pictures." Wittgenstein recognizes that there are some connections and similarities between pictures and images and impressions (RPPII 109, 111, 115). For instance, he acknowledges that a picture can represent what one has an image of and also what one sees. Consequently, a single description might serve as a description of either a picture, an image, or an impression. In addition, pictures and images (but not impressions) are both related to activities in that we can *create* a picture and *form* an image. Furthermore, these activities are "creative" in the sense that intention has a role. Specifically, I create a picture or form an image of who or what I intend to, not who or what the picture or image resembles. But Wittgenstein insists that, overall, the concept of a picture differs from the concept of an image, and also from the concept of an impression (RPPII 110, 112).

Wittgenstein mentions that "see," "look," and "observe" are often used in conjunction with one another, and correspondingly, the concepts associated with these words display similarities (RPPII 135). Investigating these similarities can help show how images and impressions differ conceptually from pictures. For reflecting upon language games involving words such as "see," "look," and "examine" brings it to our attention that seeing, looking at, and (visually) examining all have conceptual connections with pictures that are lacking with images and impressions.[46] Part of the concept of examining, for example, is that an individual might fail to notice, or might be mistaken about, some aspect of what he examines (and this depends further on the possibility of *verifying* the results of the examination). So

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[46]In this discussion, "examine" is used rather than the related word "observe." "Observe" is often used as more or less a synonym for "see," "look at," or "notice." But it also has a distinct meaning in its own right (i.e., the sense in which a scientist observes). With respect to the latter use, however, it might be argued that conceptually only phenomena, processes, states, changes or lack thereof, etc. (not an object) can be observed. The meaning of "examine" shares attributes with the latter meaning of "observe" (e.g., to visually examine an object is to do more than simply see it or notice it) without being open to the objection cited.

I can examine a picture of a landscape, yet not notice that a small tree in the background has needles instead of leaves. That is, in terms of language games: Someone might ask me "Is there a small evergreen tree in the background of the picture?," and I might answer "No, all the trees in the picture have leaves." Furthermore, someone might then add "Look again. I think there is a small evergreen tree in the background," and when I examine the picture a second time, I might recognize that the tree has needles. Thus, I might reply "Yes, you're right, it is an evergreen tree. The results of my previous examination of the picture were wrong." In contrast, it does not make sense to say "I closely examined my image (or visual impression) of a landscape but mistook a small evergreen tree for a deciduous tree," since it is not clear on what basis I could be said to be *mistaken.*

Seeing is similar to (visually) examining in that I might fail to see part of the picture (for instance, the evergreen tree in the background), and in terms of seeing, environmental conditions are relevant.[47] I might say "I did not see the evergreen tree because the corner of the picture is in a shadow," or "I could not tell that it was an *evergreen* tree because I was too far away from the picture to clearly see the needles." These types of responses do not make sense for images or impressions, though, since we do not talk in this way about environmental conditions in connection with images and impressions.[48]

Looking at is closely tied to seeing (e.g., I see what I look at) and to (visually) examining (e.g., I look at what I examine). The arguments given above can be put forward for "looking at" too, and the conclusion again is that although we look at pictures, we do not look at images or impressions. Wittgenstein also suggests that what is seen (such as a picture) is in a different "space" than what is imagined (i.e., an image), since seeing is connected with looking but forming a visual image is not (Z 622, 628). This is an additional reason that images are not pictures.

The concept of degree is associated with the concept of sensation, and Wittgenstein describes degree via example, saying that it can range from "scarcely perceptible" to "unendurable" (Z 472). This means that statements like the following all appear in language games: "I hardly feel the pressure that my shoe is exerting on my foot," "The taste of spices in my food is mild," and "The warmth of my arm exposed to this strong sunlight is uncomfortable, and I'm afraid that the pain of the ensuing sunburn will be

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[47]Bennett and Hacker make this comment about environmental conditions and perceptions as well. At the same time, they present a discussion regarding making mistakes with respect to what one perceives. They also contrast mental images with physical images (see PFN 189-193).

[48]Wittgenstein observes another difference between "trying to see something" and "trying to form an image of something." Namely, a response to "I can't see it" might be "Look, just over there!," whereas a response to "I can't imagine it" might be "Shut your eyes!" (Z 625-626).

agonizing." Wittgenstein links the word "intensity" with impressions and images. It is not immediately clear whether intensity and degree are the same concept; or if they are different, how they are related. But Wittgenstein does indicate that images are not distinguished from sensations based on "vivacity" (RPPII 63). So a disparity in intensity or degree is not what separates images from sensations.[49]

One of the primary differences between images and impressions, according to Wittgenstein, is that images are subject to the will (or "voluntary"), whereas impressions are not.[50] This idea can be explicated along various lines. For example, Wittgenstein stresses that "Images are voluntary" is a conceptual statement. As Wittgenstein expresses it, "I mean: it makes *sense* to order someone to "Imagine that," or again: "Don't imagine that"" (RPPII 83).[51] That is, "Images are voluntary" is a statement about what types of language games can be played with the words "image" and "imagine." Wittgenstein is not implying that images (whatever they are) are always voluntarily produced or voluntarily had. This is important to realize since some images an individual has may not be ones that he chooses to have; or they may at one time be voluntarily produced and at another time involuntarily produced (RPPII 83, 86). A further explanation of what it means to be voluntary or subject to the will is provided in Wittgenstein's remark "Seeing is subject to the will *in a different way* from forming an image. Or: "seeing" and "forming an image" are related differently to "willing"" (RPPII 141).[52] In other words, there are different language games involved for "seeing" (which pertains to impressions) and "imagining" (which pertains to images), and one instance of this is with respect to the use of "willing." This

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[49]Schulte (1993) believes that Wittgenstein is speaking to David Hume in RPPII 63 (p. 32). Bennett and Hacker also bring up Hume in their discussion of vivacity (PFN 193-194). Wittgenstein's remark about vivacity contrasts with Hume's philosophy in two main ways. First, Hume suggests that impressions (including sensations, passions, and emotions) and ideas (the "faint images" of impressions) differ only in their "degree of force and vivacity," not in their nature (Hume 1978, Book I, Part I, Section I, pp. 1-3). Second, and more fundamentally, Wittgenstein's remark is grammatical whereas Hume's perspective is empirical (and in particular, is based on introspection with respect to impressions and ideas).

[50]A related difference is that images, because they are subject to the will, do not inform us about the external world. But impressions, which are not subject to the will, do give us information about the external world (Z 627). This too is a conceptual difference, and the conceptual connection between sense-experiences and the external world is briefly covered in §2.1. In that context, "sense-experiences" can be taken to include both impressions and sensations.

[51]Put in other terms, with reference to sensations: "With the sentence "Images are voluntary, sensations are not," one differentiates not between sensations and images, but rather between the language-games in which we deal with these concepts" (RPPII 129). In RPPII 90, Wittgenstein also directly denies that the difference with respect to being subject to the will is a factual difference.

[52]The "or" sentence here explicitly interprets the preceding sentence grammatically, that is, conceptually.

is highlighted in the case of *banishing*, a concept that Wittgenstein suggests is tied to willing (specifically, what is banished is what an individual *wills* to be banished): It is part of a language game involving "look" and "see" to order someone "Stop looking at a tree." If I follow this order, I might close my eyes, or I might turn my head and look at a house. Then I will cease to see (and cease to have a visual impression of) a tree. The order "Banish the image of a tree" occurs in a language game involving "banish." In response to this order, I might imagine a house or open my eyes, so that I cease to imagine (and cease to have an image of) a tree. But there is no order "Banish the visual impression of a tree." For we do not say that a tree (of which I have a visual impression) obeys my will when I turn my head and look away from it. Turning my head to look at something else, and thereby see something else, has a role in the game with "look" and "see" that it lacks in the game with "banish." Thus, this illustrates how the word "banish" is used in connection with images but not impressions (RPPII 91, 139; Z 633).

According to Wittgenstein's analysis, there are blend-impressions (such as blends of smells, colors, and sounds) and qualitative mixtures of sensations. This may mean that it makes sense to say, for instance, "When I look at the ocean, I see blue-green," or "When I look at the ocean, I have a visual impression of blue-green." Furthermore, one describes what is seen (i.e., what one has a visual impression of) as "the color of blue combined with the color of green." However, one also says, "When I imagine the ocean, I imagine blue-green" and describes what is imagined (i.e., what one has an image of) as "the color of blue combined with the color of green." Hence, if impressions and sensations differ from images with respect to blending and mixing, it must be in some other manner. So perhaps Wittgenstein assumes that the language game contains statements like "My impression of blue-green is the blend of an impression of blue with an impression of green" as well, since we certainly do not say "My image of blue-green is the blend of an image of blue with an image of green."

Wittgenstein's description of psychological concepts also indicates that impressions are spatially and temporally related to one another, while images do not have these relations to each other. One possible conceptual (as opposed to factual) interpretation of this is that only impressions (not images) have a spatial and temporal "connectedness," where what counts as connectedness is determined by our practices and language games. In other words, it is inherent in our concept of an impression that impressions are related to one another with respect to time and space, and these relations are tied to certain practices and language games.

As an example of the spatial and temporal connectedness of impressions, consider the language game of "telling time." This game consists of (for instance) looking at a watch and ascertaining the position of the hands. Suppose I look at my watch and have a visual impression of both hands

pointing to the "12." Then I watch the sweep hand move 360° and have a visual impression of the hands at the "12:01" position. Another minute later, I have a visual impression of the hands at the "12:02" position. Conceptually, the impressions are spatially-temporally connected, since they are had as part of the language game of telling time, a practice that determines that spatial-temporal relationships exist between the impressions.[53]

It is important to note that this connectedness is not established only by the *content* of the impressions. What is relevant is that the impressions are had in conjunction with the practice of telling time (e.g., I wear an accurate watch, I look at the face of that watch, etc.). So even if I have an image of a watch showing "12," followed by an image of a watch showing "12:01," these images lack a connection to the game of telling time. Hence, the images also fail to have the logical connectedness described above. Images may of course have some type of relation to one another; for instance, connectedness that is based on the practice of "imagining oneself to be telling time." But these images nevertheless lack spatial-temporal connectedness since the practice of imagining has fundamentally different conceptual connections to space and time than the practice of seeing. With this in mind, the interpretation given above might also be understood in terms of the "spaces" Wittgenstein mentions in Z 622 and 628. That is, impressions can be seen as being in a conceptual "impression-space" that allows for talk of spatial and temporal relations (e.g., due to the language games and practices that involve impressions). Thus, it makes sense to say impressions are spatially and temporally related. With respect to image-space (and thus images), on the other hand, it does not make sense to talk of spatial and temporal relations (e.g., due to the characteristics of the language games involving images).

Wittgenstein's comments presented here regarding images, impressions, and sensations, as well as the proposed interpretations of those comments, are useful in a number of ways. The material can later be compared to Damasio's definitions of mental images. It also foreshadows elements of Wittgenstein's treatment of emotion (covered in §2.4 below). Finally, it gives a more comprehensive view of how conceptual analysis is carried out and what its results are. One thing it does not do, however, is attempt to supply neuroscientific or psychological explanations of the concepts with which it deals; and this reflects a limit on what conceptual analysis is designed to do.

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[53]Telling time is a fairly high-level language game. More basic language games involving impressions/sensations include seeing, seeing colors, tasting, and having pain. (These are to be taken here as practices, related to the concepts of seeing, tasting, etc., not as experiences or phenomena. Part of the game of seeing, for instance, is for an individual to say "That's too bright!" and look away when someone turns on a bright light in front of him. Part of the game of having pain is for an individual to say "I have a pain *here*," while grabbing his own foot.) With these basic language games, the connection to time and space is perhaps more evident, because the games are very clearly connected to concepts of spatial position and occurrence in time.

2.3   Phenomena and Phenomena *of* . . .

Before moving on to other aspects of Wittgenstein's study of psychological concepts, such as his remarks regarding the ascription of emotion, it is useful to first cover a more basic topic: a distinction between phenomena and phenomena *of* . . . (e.g., phenomena *of* thinking, phenomena *of* happiness). The purpose of this section is to make this distinction explicit. Doing so will establish a framework that can be utilized in §2.4.

A phenomenon is something that can be observed, where observation (1) involves using a sense (i.e., receiving impressions) and (2) does not create or produce what is observed (PI ix 160; RPPII 75).[54,55] People's behaviors are hence phenomena, and a primary activity of psychology is the observation of such phenomena. In a given experiment, for instance, psychologists may record the words that the subject uttered in response to the investigator's questions, the amount of time it took for the subject to complete a task, or the responses the subject had to various experimental stimuli (e.g., that the subject smiled and laughed when shown a picture of a clown). Then from these observations, psychologists form and test hypotheses regarding thought, sight, emotion, and so on, including their interactions and underlying mechanisms. Wittgenstein repeatedly denies, however, that "thinking," "seeing," "fearing," and other psychological words refer to phenomena, and in particular, to the phenomena that psychologists observe (RPPI 550; RPPII 31, 35, 77; Z 471). This therefore leaves the question of how to reconcile Wittgenstein's position and the standard assumption that scientists do study thought, emotion, etc. when they conduct psychological experiments. But it seems that an answer can be found by combining a distinction between two senses in which psychologists (and language users, more generally) may observe behavior with Wittgenstein's assertion that psychologists actually observe phenomena *of* thinking and phenomena *of* emotion (RPPII 133; Z 471).

A person can, on the one hand, observe behavior itself in a fairly strict sense, that is, observe movements, utterances, or the position of facial features. For convenience, term this "behavior$_1$." On the other hand, the behavior that is observed can in addition include the overall *context* within which the behavior$_1$ takes place. Call this behavior-within-a-context "behavior$_2$." In an analogous way, paint on a canvas may be described as "a red mark with such and such dimensions and a green mark with such and such dimensions," or as "a red flower bud with a green stem."[56] The first

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[54]These remarks should again be interpreted conceptually. So they are remarks about the concept of phenomena and the concept of observation, or equivalently, about the grammar of "phenomena" and "observe."

[55]Here, and in what follows, the referenced remarks by Wittgenstein that refer to "phenomena" have either "Phänomene" or "Erscheinungen" in the German text.

[56]Wittgenstein uses an example such as this in RPPI 287. Johnston (1993) interprets RPPI 287 in a way similar to that discussed above in the text, drawing a distinction

description is akin to a description of behavior$_1$, and the second description is like a description of behavior$_2$. Wittgenstein can be interpreted as referring to behavior$_2$ when he suggests that the behavior related to thinking, wishing, being in pain, being afraid, and so forth includes "the surrounding," "the occasion," "the external circumstances," or "the wider context" in which "behavior in a narrower sense" (e.g., behavior$_1$) takes place (RPPI 129, 312-314, 1066-1067).[57],[58] Furthermore, because behavior in a broader sense is what Wittgenstein connects to thinking, for example, it seems reasonable to equate these types of behaviors with phenomena *of* thinking. The following issues remain to be clarified, though: (a) exactly what does Wittgenstein mean by "context," (b) how does such context enable certain behaviors to be described as behaviors$_2$ rather than as behaviors$_1$, and (c) why it is thereby indeed appropriate to identify behaviors$_2$ (i.e., behaviors that, according to Wittgenstein, are inherently linked with thinking, etc.) with phenomena *of* ... (which, according to Wittgenstein, are the phenomena that psychologists observe).

To address (a) and (b), consider Wittgenstein's comments in RPPI 550, in which he maintains that it is misleading to call thinking, seeing, etc. "phenomena" and insists that "We all know what phenomenon the word "thinking" refers to" is better put "We can all play the language game with the word "think."" Here, a connection to language games is made explicit. Language games each have certain concepts associated with them. Or grammatically speaking, for each language game, there are specific ways in which words are used (and not used) in that language game. As an example, take the concepts of sadness and eye irritation (and the language games with "sadness" and "eye irritation"). Part of these concepts is that someone can feel sad after watching a movie, but not after cutting an onion. In contrast, the concept of eye irritation relates to cutting onions, but not to watching movies. (In terms of language games, it makes sense to say "The movie made me sad" and "The cut onion irritated my eyes," but not "The cut onion made me sad" or "The movie irritated my eyes."[59])

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between the "array of colors and shapes" that appear in a painting and what someone looking at the painting sees (pp. 205-206).

[57]In RPPI 1068-1076, Wittgenstein analyzes whether behavior-within-a-context can be *seen* (conceptually, that is, grammatically). In this thesis, behaviors$_2$ are said to be *observed*, *seen*, *viewed*, and *described*; but this is not based on conceptual analysis, and so some of these usages may be conceptually in error.

[58]This terminology (e.g., "behavior$_1$" and "behavior$_2$") should not be taken to imply an "ordering" of contextualized behaviors in a building-block manner. That is, the lines between a behavior$_1$ and a behavior$_2$ are not necessarily clear-cut, and this arises in part because the notion of "context," and what is included in it, is not always clear-cut. Also, for some behavior$_2$ x, it may not make sense to say that x is a "behavior$_1$ plus context," if the original behavior (the behavior$_1$) is completely transformed conceptually by the context.

[59]Of course, there could be a context in which it does makes sense for the person cutting onions to say "The onion makes me sad." (I thank Martin Stokhof for reminding me of

Hence, within the setting of watching a movie, crying (behavior$_1$) can be viewed as (i.e., makes sense as) "sadness-behavior" (behavior$_2$). Within the setting of cutting an onion, the same behavior$_1$ is viewed instead as "eye irritation-behavior" (behavior$_2$). Wittgenstein gives a similar pair of examples: The crying of a child is associated with sadness (i.e., it is seen as sadness-behavior) if the child's mother has left him alone, but the crying is associated with pain (i.e., it is seen as pain-behavior) if the child has fallen down (RPPII 148; Z 492). Moreover, watching a movie is a behavior$_2$ that in another sense is a behavior$_1$ (e.g., looking at a screen with moving images). This means that when crying as a behavior$_1$ occurs, it occurs amidst myriad other behaviors$_1$ as well. So it is also in virtue of our concepts (language games) that these other behaviors$_1$ provide the particular context of behaviors$_2$ (e.g., watching a movie) that they do. This is another reason why behavior$_2$, that is, behavior-within-a-context, is what Wittgenstein says is connected to certain other concepts. In these ways then, a language game provides context within which (both verbal and non-verbal) behaviors$_1$ can be seen as behaviors$_2$, where each behavior$_2$ is connected to concepts that are part of that language game.[60],[61]

With respect to (c), consider examples Wittgenstein gives of phenomena *of* ... Wittgenstein mentions, for instance, phenomena of seeing. He classifies these phenomena as "all the kinds of behavior which distinguish a sighted man from a blind one." In other words, these phenomena constitute the way someone behaves (or might behave) when he *sees*.[62] Wittgenstein

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this and for suggesting the following example.) Perhaps, for example, the person had an unfortunate history with someone who frequently chopped onions. But this is a case that then involves more the just the concept of onions (namely, it includes concepts that *are* conceptually connected to sadness).

[60]This is not limited to *behaviors* either. The example of the red and green paint being seen as a flower involves the concepts of a painting, a flower, a bud, and a stem, among others. It is within the context provided by these concepts that the paint marks are viewed as a red flower bud with a green stem.

[61]All of this naturally raises a question as to how strictly we ever view behaviors (or objects), and whether some type of conceptualization is always present (e.g., the behaviors are always viewed within the context created by *some* language game). For instance: At a party, smiling can be seen as a happiness-behavior and thus as a behavior$_2$. Without a context like this, a smile could be viewed as just a smile, that is, as a certain arrangement of facial features and so as a behavior$_1$. But even an "arrangement of facial features" involves the concepts of a face, facial *features*, and the orientation of some features with respect to others. Likewise, crying as a sadness-behavior is a behavior$_2$, and crying in itself is a behavior$_1$. But crying too depends on some context to be seen as *crying* and not as just watering eyes. If behaviors are *always* part of some context, then the arguments given above with respect to behaviors$_2$ and behaviors$_1$ also hold with respect to behaviors$_1$ and behaviors$_0$, and so on, until the "narrowest" possible context is reached.

[62]But these are conceptual, not factual, statements. So the phenomena distinguish a sighted man from a blind one in virtue of the *concept* of seeing (i.e., how "see" is used). Johnston (1993), in discussing RPPII 35, explains this type of dependence as follows: "A pause during activity, a pensive look, the sudden start of inspiration, all these might be called the phenomena or manifestations of thinking, but the key element that binds these

includes among such phenomena exact observing, being blinded by light, the look of joyous surprise, and turning away so as not to see something (RPPII 132, 134).[63] Straining in looking and following a thing in motion with one's eyes are also phenomena of seeing. Phenomena of imaging, such as closing one's eyes to form an image of something, differ from phenomena of seeing because, as Wittgenstein notes, "seeing" and "imaging" are used differently (RPPII 77). Wittgenstein suggests too that for some concepts, the phenomena *of* ... that pertain to that concept all involve the use of language. All phenomena of hope, for instance, involve the use of language (PI i 148). An illustration of this point is this: The utterance "I hope the weather will be nice tomorrow" is a phenomenon of hope. Along with making this utterance, one might start anxiously packing a picnic basket in preparation for an outing the next day. But this action itself is not a phenomenon of hope, since "hope" is not used in a certain setting simply because someone packs a picnic basket. Moreover, no set of actions without language use will be sufficient to warrant the application of the word "hope." These examples indicate that it is the language game with "x" that makes a certain phenomenon a phenomenon *of x*. The examples also imply that the phenomena *of x* are behaviors viewed within a context, where that context is provided by the language game and is appropriate to the concept of *x*. Thus, phenomena *of x* are behaviors$_2$, and x-behaviors are (a subset of) phenomena of x.[64,65]

Now it is informative to notice that a similar focus on context, and in particular, practices and language games, can be found in Schulte (1993), Chapter 4. Schulte's writing in that chapter has a dual emphasis. He discusses "specific (psychological) experiences," such as the experience of red. He suggests that what is "specific" in this type of case is based on language games and our concepts of color (not our experiences), such as that red is a primary color, mixing yellow and blue does not make *red*, etc. Therefore, anyone who cannot operate correctly with the concept of color will not be able to grasp what is specific about, say, red (pp. 45-52). Schulte also concentrates on expression of music, understanding of music, and expression of understanding of music. In regard to this, he proposes (in analogy with lan-

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elements together is not some observed common quality but our concept of thinking and hence the language-games we play with the words "I think ...," "She is thinking ...," etc." (p. 210).

[63]These examples concentrate on non-verbal behavior. But other examples of phenomena of seeing are verbal in nature, such as the comment "That light is much too bright to have in this small room."

[64]One instance in which Wittgenstein explicitly makes this link is when he describes phenomena of anger as "anger-behavior" (RPPII 32).

[65]More generally, phenomena of x may not be behaviors, and hence "behaviors$_2$" are more appropriately labeled "phenomena$_2$." For example, sweating is a phenomenon of fear, and a painting of a flower is a phenomenon of art, but these are *phenomena$_2$* rather than *behaviors$_2$*.

guage) that whether someone understands a particular piece of music or not will depend on his familiarity with the "language of music." Furthermore, Schulte claims that whether or not the listener's expressions (e.g., gestures or utterances) in response to music are correct or appropriate (i.e., whether or not they are expressions of understanding music) is determined by this same practice or "language game" (pp. 43-44). In addition, Schulte remarks that "Even our so-called "spontaneous" forms of reactions–certain types of gestures or dance steps when listening to music, exclamations like "Ouch!" or "Help!" or more complicated forms of behavior in the case of pain–will acquire sense only within a language game and hence through their connections with certain kinds of conduct and through being embedded in relevant practices" (p. 53). It seems that this latter statement could be recast in terms of behaviors$_1$ (e.g., movements, sounds) and behaviors$_2$ (e.g., gestures and exclamations that have "acquired a sense" in virtue of their place within the context of a language game). Because of the role Schulte has language games play, his comments about understanding music could also be restated. In the terminology used above, one could say that the gestures and exclamations (i.e., expressions) of someone who understands music are phenomena *of* understanding music. In other words, expressions of understanding music are phenomena of understanding music.[66] This might hold true too for expressions of regret, sadness, or pain. (Wittgenstein discusses such expressions in, for instance, RPPI 304, 313 and RPPII 151, 307.[67]) That is, it could be argued that the language game (or context provided thereby) makes the utterance "I'm in pain" an expression of pain in the same way it makes it a phenomenon of pain. Other cases, however, do not match as well. We recognize phenomena of thinking, for example, yet it seems difficult to say what would count as an *expression* of thinking. If that is so, then "expressions of" and "phenomena of" may be associated with different, although similar, concepts. The concepts may overlap, for instance, with respect to what Wittgenstein and Schulte call "immediate" or "spontaneous" actions, such as expressions of pain (cf., RPPI 304, 313; Schulte 1993, pp. 43, 44, 52-53).

In all, it is clear that language games occupy a place of importance when it comes to our observation of behavior. Wittgenstein's comments can be interpreted in that light also when he says, "How could human behavior be described? Surely only by sketching the actions of a variety of humans, as they are all mixed up together. What determines our judgement, our concepts and reactions, is not what *one* man is doing *now*, an individual action, but the whole hurly-burly of human actions, the background against which we see any action" (Z 567). For an action by itself is only a phenomenon.

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[66]As phenomena of understanding music, they are behaviors related to the language game associated with "understanding music" and occur within the musical context, which is provided by the "language of music."

[67]In these remarks, the German text uses "Äuβerung" and "Ausdruck."

But placed in a broader context, namely, the context provided by human behavior as a *whole* (in other words, the context provided by practices and language games), the phenomenon can be seen as a phenomenon *of* .... This perspective makes an interdependence visible as well: Our language games depend on a collection of (verbal and non-verbal) behaviors for their existence as *language* games (cf., Wittgenstein's views regarding the social nature of meaning), and at the same time, our behaviors derive their status as phenomena *of* ... due to their appearance in certain language games. Finally, while viewing phenomena as phenomena *of* ... (as phenomena of thinking, for example) in everyday life depends just on our competency with the language game with "thinking," the same is true for psychologists conducting psychological experiments. So as long as psychologists correctly use the word "thinking," they can investigate thought via observations of phenomena of thinking (i.e., via observations of behaviors/phenomena that are viewed within a certain context). Since even if "thinking" does not refer to behavior, phenomena *of* thinking are conceptually tied to thought. In addition, psychologists can in this manner study thought without needing to ask (or answer) the question "What is thinking?"

2.4   Emotion

Wittgenstein's analysis of emotion can be connected with numerous remarks he makes concerning other psychological concepts, such as his comments about sameness/identity of images and his extensive discussions regarding first-person and third-person uses of the predicate "am/is in pain." These links are to be expected, given Wittgenstein's goal of developing a perspicuous representation of, and thereby providing a synoptic view of, psychological concepts (cf., Z 464). The links also illustrate a point Wittgenstein makes when he says "The treatment of all these phenomena of mental life is not of importance to me because I am keen on completeness. Rather because each one casts light on the correct treatment of *all*" (Z 465; RPPII 311). Due to this feature of Wittgenstein's work, however, a comprehensive review of issues pertinent to the concept of emotion requires much more space than is available here. Moreover, even providing highly-detailed interpretations of all the terms directly associated with Wittgenstein's characterization of emotions strays outside the scope of the present thesis. What follows below is therefore a suitably restricted description of various aspects of Wittgenstein's investigation of emotion, so that some salient ideas can be compared in §4 to Damasio's research and hypotheses.

2.4.1   Characteristics of Emotions

Wittgenstein's examination of emotion reveals various conceptual characteristics of emotions in general (RPPI 836; RPPII 148, 307; Z 485, 488, 491):

Emotions have (like images, impressions, and sensations) genuine duration and a course, in that it makes sense to say "I became happy as soon as I saw the sunrise" and "My fear of the dog was intense at first, but then it lessened," respectively. But, unlike sensations and impressions, emotions do not give us information regarding the external world. For in typical contexts, a sentence such as "I am happy, and thus I know the roses outside my window are (probably) blooming" does not make sense, whereas "I smell roses when I stand near my open window, and thus I know the roses outside that window are (probably) blooming" does make sense. Also, in contrast to sensations, emotions do not have a place and are neither localized nor diffuse.

These latter two grammatical properties can be better understood by looking at remarks Wittgenstein makes regarding sensations (e.g., pain), which *do* have a place and *are* localized or diffuse. For instance, Wittgenstein comments that place of sensation in the body differentiates sensation of pressure, temperature, taste, and pain from seeing and hearing (Z 472). This aligns with the observation that sentences such as "I feel the backpack's weight on my shoulders," "I feel pain in my foot," and "I taste chocolate in my mouth" make sense, but "I see colors in my eyes" and "I hear sound in my ears" do not. So when Wittgenstein says emotions lack a place, he is likely claiming that sentences such as "I feel sadness in my eyes" do not make sense.[68] But furthermore, Wittgenstein looks at a non-verbal aspect of the concept of pain and points out that the language game with pain involves the reaction of touching the painful place (LPP 282; RPPII 63). For example, if one drops a book on one's bare foot, then one's grabbing that foot is a phenomenon of pain, and more specifically, it is a phenomenon of

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[68]It should be noted as an aside that the issue regarding place is actually slightly more complicated than presented above. For Wittgenstein also says, "...place of bodily pain is not the body" (RPPII 307; Z 511), which interpreted grammatically would seem to mean that "I feel (foot) pain in my foot" does not make sense. But it is quite certain that Wittgenstein *would* accept a sentence like "I feel pain in my foot," and hence a different understanding of the comment in RPPII 307 and Z 511 is required: According to RPPII 307, "Regret is called a pain of the soul because the signs of pain are similar to those of regret. But if one wanted to find an analogy to the place of pain, it would of course not be the mind (as, of course, place of bodily pain is not the body), but the *object* of regret." So Wittgenstein is comparing the object of an emotion to the place of pain, and for Wittgenstein, an object of an emotion is that at which the emotion is directed. For example, the object of one's regret might be a hasty decision that he made or the result of that decision. The concept of place as it is used in RPPII 307 could therefore possibly be described as referring to the so-to-speak "recipient" of the pain. In this case, the place of the pain is not a body part as such, but rather the person who is the subject of the pain. In other words, although the place of my pain *can* be my foot (i.e., "I feel pain in my foot" makes sense), RPPII 307 is emphasizing that the place is crucially the foot as it is part of the person experiencing the pain, not simply the foot itself as a body part. This interpretation also is consistent with remarks such as Wittgenstein makes in PI 302, where he says, "Pain-behavior may point to a painful place — but the subject of the pain is the person who gives it expression."

foot pain (i.e., pain whose place is the foot). Thus, in saying that emotions do not have a place, he is likely suggesting too that non-verbal phenomena of emotion do not involve place in the body in the same way that non-verbal phenomena of sensations do. For instance, one might grasp one's chest in surprise or grief (i.e., these actions are phenomena of surprise and of grief). Yet one would not say "I am grasping my chest because I feel surprise whose place is my chest." This differs from pain, for which it does make sense to say "I am holding my foot because I feel pain whose place is my foot." Likewise, even sentences such as "My heart is full of grief" and "My heart is full of (physical) pain," which both make sense and have similar structures, have connections to very different types of behaviors. If my heart is full of grief, for example, I will not seek diagnosis and treatment from a cardiologist or neurologist, or express my concern that I might need heart surgery, as I would if my heart were full of pain.

Next, localization and diffuseness can then be understood with reference to place. Specifically, pain or another sensation that is in a particular place (e.g., my left thumb, my right shoulder) is localized, while pain or another sensation that is distributed over a variety of places (e.g., the left side of my body, my whole body) is diffuse.[69] It is difficult to determine exactly where Wittgenstein draws the line between being localized in a certain area (e.g., my left thumb, my left hand, my left hand and arm) and being diffused throughout a wider area (e.g., my left side). Perhaps a sensation is localized only if it is part of the language game to point to an area and say "I feel the sensation *here*." Or perhaps being diffuse only means being located throughout the *entire* body. But regardless of these finer points, it is clear that emotions lack localization and diffuseness as a result of lacking place. So just as it does not make sense to talk of an emotion having a place (i.e., an emotion being felt in some place), it does not make sense to say that my happiness is localized in my chest or diffused throughout my body.

Although emotions do not have a place, they do, according to Wittgenstein's analysis, have a content. Wittgenstein takes this content to be something that can be captured in a picture, such as the darkness of depression or flames of anger (RPPII 148; Z 489). Also, when Wittgenstein says that a face bathed in light represents joy, he adds that the connection between the content of the emotion and the scene or picture that embodies it need not be fixed based on some intrinsic property of the emotion. In other words, it is not necessarily that joy and light somehow resemble each other, for example, and that for this reason, light represents the content of joy. Instead, it is enough that we associate light and joy (darkness and depression, flames and anger), where this association possibly is learned in the same

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[69]Apart from remarking that emotions are not localized (or diffuse), Wittgenstein does not go into much detail about localization and diffuseness. But he does briefly mention localization (and presumably, diffuseness) in Z 485-486.

way a child learns to associate certain sounds with certain objects (e.g., the word "apple" with an apple) (RPPI 853). This suggestion regarding how the association is formed between an emotion and that which represents its content highlights the close connection Wittgenstein sees between the language game and the content of emotions.

Emotions also, in addition to having content, have characteristic expressions. That is, they have characteristic expression-behavior, such as facial expressions (RPPII 148; Z 488). One possible understanding of the concept of a "characteristic expression of" is that a characteristic expression of x is an expression that can be viewed as an expression *of* x. Moreover, for an expression y to make sense as an expression of x, y must, in some contexts, be part of the concept of x. In other words, for a given emotion x, the concept of x includes certain expressions in certain types of contexts; these expressions, therefore, can be recognized as expressions of x; and in this way, the expressions are *characteristic of* x.[70],[71]

This interpretation of "characteristic expression of" explicitly draws on the results in §2.3 regarding "phenomena *of* ...."[72] In §2.3, it was pointed out that behavior in certain types of contexts takes on conceptual features that it lacks outside those contexts. For example, crying while cutting an onion can be seen as eye-irritation-behavior (i.e., as a phenomenon of eye irritation), while crying during the viewing of a movie makes sense as sadness-behavior (i.e., as a phenomenon of sadness).[73],[74] It is the language games, and the concepts associated with them, that allow these distinctions. Language games with the word "sadness," for instance, include tearful reactions to certain types of movies (e.g., "I cried because the movie made me sad" makes sense). In other words, the concept of sadness includes crying, but more specifically, it involves crying in particular circumstances (such as when watching a certain type of movie). Thus, to put the matter differently:

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[70]The "can" here, and in the discussion that follows, is conceptual/grammatical, meaning it is part of the language game, or makes sense, for a particular expression to be an expression of x. But of course, speakers also factually *can* (and do) recognize appropriate expressions as expressions of x. Also, it is important to note that the "types of contexts" mentioned are contexts that are conceptually appropriate to x.

[71]According to Wittgenstein, not every psychological concept has characteristic expressions. Pain, for example, does have characteristic expressions, but other sensations (e.g., numbness, tingling, sensation of heat) do not (RPPII 63).

[72]As noted in §2.3, the concept of an expression of seems slightly narrower than that of a phenomenon of (in that an expression of x is a phenomenon of x, but not all phenomena of x may be expressions of x). But with respect to emotion, it is probably safe to assume that the terms "expression of" and "phenomenon of" are to a large degree interchangeable.

[73]Again, "can" is used here in the grammatical sense.

[74]In a broader context associated with cutting an onion, crying can also be seen as a phenomenon of sadness. This was mentioned in §2.3 as well, and a relevant, broader context might include an unfortunate history that the crier had with someone who frequently chopped onions. But in this case, the context would not be *strictly* that of chopping an onion, and the language game correspondingly would allow other meaningful ways of viewing the tears beyond that of eye irritation.

Behavior is a characteristic expression of an emotion if and only if the behavior, in certain types of contexts, makes sense as a phenomenon of that emotion. Crying is therefore a characteristic expression of sadness because there are contexts appropriate to sadness in which crying makes sense as a phenomenon of sadness. In contrast, a phenomenon such as coughing is not inherent in the concept of sadness at all, and there is no context in which coughing makes sense as a phenomenon of sadness. Hence, coughing is not characteristic of sadness.[75]

This account of being a "characteristic expression of" sheds light on Wittgenstein's remark that an emotion has a characteristic *mimed* expression (RPPI 836). For the characteristic mimed expression of an emotion is thus presumably an expression that can be viewed as (i.e., makes sense as) an expression of that emotion given only the minimal context that is provided via miming (e.g., via facial expressions and body movements). So whereas uttering "I am very sad" is a characteristic expression of sadness, the characteristic mimed expression of sadness consists of tear-filled eyes, a drawn face, and rounded shoulders.

Together with having characteristic expression-behavior, Wittgenstein maintains that emotions have characteristic sensations and characteristic thoughts as well (RPPI 836; RPPII 148; Z 488).[76] In some cases, these characteristic sensations are directly related to the characteristic expressions (RPPII 148; Z 488). For instance, certain sensations around the eyes are characteristic of crying, and crying is characteristic of sadness. Hence, these sensations are also characteristic of sadness.[77]

The concept of a characteristic sensation is analogous to that of a characteristic expression in that characteristic sensations are conceptually associated with that of which they are characteristic. Also, as with characteristic expressions, context is relevant. Part of the concept of crying, for example, is that one's eyes tingle and one's face feels wet. In addition to this, the concept of crying involves a condition like "the tears are naturally produced." So in a situation where one's eyes tingle and one's face feels wet due

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[75]Prior experience may teach us that a certain person coughs when he is sad, and in this case, his coughing may indicate to us that he is sad. Nevertheless, his coughing is not an *expression of* sadness, and it would be through the presence of other, *characteristic* behaviors (such as crying) that we would be able to (empirically) associate his coughing with his sadness in the first place. (This relates also to Wittgenstein's remarks in RPPII 157.) In other words, what can make sense as, and what in some given instance *does* make sense as, an *expression of x* (or *phenomenon of x*) is conceptually determined by the language game with "*x*." It is for this reason that the man's coughing, which we might want to say is an "indication of his sadness," is nevertheless not a *phenomenon of* sadness.

[76]It is possible that sensations are, grammatically, "undergoings" in Wittgenstein's classification scheme (cf., RPPI 836), but that issue will not be investigated here.

[77]Wittgenstein seems to indicate that a cold sweat is characteristic of fear, and so sensations characteristic of sweating are characteristic of fear (LW 413). If this is correct, then this would be a case in which sweating is more properly called a "phenomenon of" fear than an "expression of" fear.

to naturally-produced tears, the sensations can be viewed as sensations of crying (i.e., crying-sensations). These sensations are therefore characteristic of crying (and of sadness). Still, although the sensations are characteristic of crying, they cannot (conceptually) be recognized in all contexts *as* sensations of crying. For instance, artificial tears (such as actors might use) may produce the same *sensations* as crying. But when the context involves having used artificial tears, these sensations do not make sense as sensations of *crying*.

Other characteristic sensations of emotions may be the sensation of catching one's breath in surprise or the sensation of one's heart racing with fear. It is important to remember, however, that the criteria for being a characteristic sensation are conceptual. In particular, empirical simultaneity *is not* a factor.[78] So although my heart may race whenever I am afraid, it is not in virtue of this that racing-heart-sensations are characteristic of fear. Instead, the sensations are characteristic because of the concept of fear and the language game with "fear" (e.g., "My heart raced with fear" makes sense). To see this more explicitly, suppose that through empirical investigation it was discovered that when people are afraid, they in fact have a slight numbness in their ear lobes. Despite this empirical co-occurrence, our current concept of fear would preclude identifying this ear-lobe-numbness as a characteristic sensation of fear because there is no context in which it makes sense as a sensation of fear in the language game. In other words, "My ear lobes became slightly numb with fear" only makes sense to the extent that numbness, as a broader concept, *is* a characteristic of fear. But ear-lobe-numbness as a separate concept is not conceptually associated with fear.

The concept of a characteristic thought is again analogous to that of characteristic expression-behavior and characteristic sensations. Specifically, a characteristic thought of an emotion is a thought that is associated with the concept of the emotion in such a way that, in some contexts (as determined by the language game), the thought can be recognized as a thought *of* that emotion.[79] But "of" in "thought *of* the emotion" does not mean "about" (as in: a thought of happiness is a thought about happiness). Rather, it should be interpreted as: a thought *of* happiness is a happiness-thought (like a sadness-behavior or a sadness-sensation). A simple example of a characteristic thought of happiness is my thought that I am happy. A more complicated example involves happiness and sadness and my thought that I love my garden, which is a thought characteristic of happiness *and* a thought characteristic of sadness. For on a sunny summer day that I have spent tending my garden, this thought makes sense as a thought of happiness (i.e., a

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[78]This seems to be the message Wittgenstein wants to convey in RPPI 157 (and in RPPII 160, but with respect to thoughts).

[79]Once again, "can" is meant conceptually/grammatically, so "can be recognized" means "makes sense in the language game."

happiness-thought). Yet on a chilly fall day that I have spent preparing my garden for cold weather and snow, this thought can be viewed as a thought of sadness, relating to how much I will miss my garden during the upcoming winter.[80] This example shows too that, analogous to expressions and sensations, a thought that is a characteristic thought of happiness does not necessarily make sense as a happiness-thought in *every* context (such as in the upcoming-winter context).

Having completed this survey of characteristic expressions, sensations, and thoughts, it is appropriate to mention one of the most difficult notions in Wittgenstein's analysis of emotion, namely, that of "coloring" a thought. This concept was first introduced in §2.2 above, where it was suggested that a thought colored by an emotion is characteristic of that emotion and is given an emotional "character" by the emotion. This idea ultimately builds on the interpretation of "thought characteristic of an emotion" discussed immediately above. It requires extensive explication, however, and in order to gain a comprehensive understanding of the relevant concepts, a variety of features of language need to be reconciled. Such a project extends beyond the topic and scope of the present thesis. It must therefore suffice to just mention its importance with respect to a complete treatment of Wittgenstein's analysis, and then move on to one last set of characteristics of emotions.

The remaining characteristics of emotions to be covered are that emotions can have objects and causes, and there can be reasons that someone has a certain emotion. The object of an emotion is that at which the emotion is aimed or directed. So if I fear my neighbor's dog, take pleasure in a summer day, and feel joy over achieving a goal, then the dog, the day, and the achievement, respectively, are the objects of these emotions. Not all emotions have objects, however. Anxiety is one example of this (cf., Z 489), as we are not anxious *over*, *at*, *in*, or *about* anything. This contrasts with related emotions such as fear and distress, since it *is* correct to say, for instance, "I feel distressed over having forgotten my friend's birthday."

The concepts of a cause and a reason (and the distinctions between them) are less easily analyzed based on Wittgenstein's remarks. It is evident that he does discern a difference between the concepts, however, for he says, "If anyone asks whether pleasure is a sensation, he probably does not distinguish between reason and cause, for otherwise it would occur to him that one takes pleasure *in something*, which does not mean that this something produces

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[80]It might be argued that this interpretation of "characteristic thoughts" (as well as that for characteristic expressions and sensations) allows *any* thought (or expression or sensation) to be characteristic of an emotion, and hence is misguided. This objection can be countered, however, because of the role language games play. In particular, they restrict which thoughts (and expressions and sensations) make sense with respect to certain words and which do not. To take a very straight-forward example, my thought that I am unhappy is not a characteristic thought of happiness because there is no context (in which words have their normal sense) in which this can be viewed as a happiness-thought.

[*verursacht*] a sensation in us" (Z 507). Wittgenstein's thinking in Z 507 seems to be the following: A cause of the pleasure in x is x, and although x can be a reason for having a sensation, x need not be a cause of that sensation. Thus, pleasure is not a sensation. In other words, a summer day can (conceptually) cause my pleasure in it, and the summer day can also be the reason that I have a certain "light-hearted" sensation (such as accompanies a slightly-elevated heart rate) that is characteristic of pleasure. But it is not conceptually required that the sensation I have is caused by the cause(s) of the emotion (e.g., "The summer day was a cause of my pleasure, and gland secretions were the sole cause of my light-hearted sensation" does make sense).[81]

The argument in Z 507 also illustrates that an object of an emotion can be a cause of the emotion as well. But while an object can be a cause, it is not a cause *because* it is an object (PI 476). That is, the emotion is directed at an object, but that object is not a cause of the emotion in virtue of having the emotion directed at it. Rather, the cause is linked to the reason for the emotion. Suppose, for example, that I am afraid of my neighbor's dog, and the reason for my fear is that I was bitten by a (different) dog when I was a child. It is this reason (and not that my fear is of my neighbor's dog) that provides the ground for my neighbor's dog being a cause of my fear.[82]

A final point about Wittgenstein's remarks regarding causes is this: Wittgenstein notes that gland secretions may be the, or a, cause of sadness (Z 509). If this is taken to be a conceptual remark, then it means "Gland secretions caused my sadness" makes sense (whether it is true or false is then a factual question). In addition, he says, "You need experiment to find out what physiological processes cause sadness, but not to find out that I cry because I am in pain" (LPP 70).[83] Thus, Wittgenstein apparently sees our concept of sadness as including having either a strictly physiological cause or in part a physiological cause.

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[81]It is not immediately clear whether or not Wittgenstein analyses emotions as, conceptually, being able to have more than one object, more than one cause, and more than one reason. So to be as general as possible, the interpretation of the argument in Z 507 is worded in a way that allows for the possibility of emotions having multiple causes and multiple reasons.

[82]Various issues concerning objects, reasons, and causes remain unexamined. For instance: Can an emotion have more than one cause? What can, grammatically, be causes of emotions (e.g., people, things, places, events, physiological factors)? What can, grammatically, be objects of or reasons for emotions?

[83]Wittgenstein also further distinguishes in LPP 70 between the concepts of cause and reason. For he indicates that although physical processes can be causes of sadness, they cannot be reasons for sadness. Moreover, science must discover physiological causes, but a reason for crying can simply be "because I am in pain."

2.4.2 Classifications of Emotions

Along with discussing characteristics of emotions in general, Wittgenstein attempts to classify emotions into different groups, according to the different conceptual features that particular emotions can possess. A basic category Wittgenstein recognizes is emotions that have objects. He labels these "directed emotions." Wittgenstein also calls these emotions "attitudes" [*Stellungnahmen*] and includes surprise, fright/fear, admiration, and enjoyment/joy among them (RPPI 836; RPPII 148; Z 488). So when the dog is the object of my fear (i.e., I fear the dog, and hence my fear is directed *at* the dog), my attitude toward the dog is one of fear. Likewise, when Mother Theresa is the object of my admiration (i.e., I admire Mother Theresa, and hence my admiration is directed at Mother Theresa), my attitude toward Mother Theresa is admiration.

Another category is "moods" [*Stimmungen*], such as sadness and cheerfulness (RPPI 926; Z 505). Wittgenstein only mentions moods briefly, remarking that a connection between moods and sense-impressions is that we use the concepts of mood to describe sense-impressions and images. That is, a musical theme (e.g., a dirge) can be sad, or a landscape (e.g., fields of brightly-colored flowers) cheerful. Using this conceptual criterion for distinguishing moods from other emotions, it is at least possible to say of some emotions that they are not moods, as neither images nor sense-impressions are said to be, for example, surprised or awed.

A third possible classification of emotions is "emotional attributes," of which love is one (RPPII 152; Z 504). The distinctive feature of emotional attributes on which Wittgenstein concentrates is that they can be "put to the test," and in Z 504 he compares love and pain, saying "Love is put to the test, pain not. One does not say: "That was not true pain, or it would not have gone off so quickly."" With this example, Wittgenstein may be indicating that it makes sense, for an emotional attribute x, to ask "Was it really x that I felt?" This contrasts with a sensation, like pain, for which this question is not part of the language game. Yet it is unclear whether Wittgenstein counts emotional attributes as *emotions* at all, or whether emotional attributes are completely distinct from emotions. For in RPPII 152, Wittgenstein remarks, "Emotional attributes (e.g., love) can be put to the test, but not emotions." Wittgenstein seems to thus explicitly deny that emotional attributes are emotions, the reason being that emotions cannot be "put to the test." It does make sense, however, to put emotions to the test as proposed above, since I might indeed say, "Was it really anger that I felt? Perhaps it was fear." So if emotions and emotional attributes are distinct, then they must differ with respect to some other kind of test. It might be conjectured then that the crucial difference Wittgenstein sees between emotions and emotional attributes is one of "endurance." That is, emotional attributes endure in a way that emotions do not, in that it is part

of the language game to use emotional attribute terms based on temporal considerations. For instance, "If I truly felt x, I would not have stopped feeling it so quickly" makes sense for some concepts x, but not others. In particular, when x is love, contentment, or chronic (not acute) fear (e.g., fear of dogs), this sentence makes sense. But it does not make sense for emotions such as surprise, joy, and "acute" fear (e.g., fear of the dog that is chasing me).[84]

A fourth classification Wittgenstein identifies is "emotional dispositions" [*Gemütsdispositionen*], such as love, hate, and chronic fear (RPPII 148; Z 491). These examples suggest that, conceptually, emotional dispositions persist through time in a way that (other) emotions do not: I can have a chronic fear of thunderstorms, and it makes sense to say "I have been (chronically) afraid of thunderstorms for twenty years." But surprise, for example, is not an emotion that has this type of longevity. That is, the concept of surprise is such that "I have been surprised for years" does not make sense. The characteristic of longevity would also help explain why Wittgenstein analyses love as both an emotional attribute and an emotional disposition. Wittgenstein may in addition intend to point out differences in how emotional dispositions are expressed compared to (other) emotions: Joy is such that a joyful person more or less continually, while he is joyful, exhibits phenomena of joy. In contrast, a person can feel chronic fear toward something without exhibiting phenomena of fear at any particular time. Hence, chronic fear is a disposition in that a person might, for instance, exhibit phenomena of fear only at certain times, such as when the object of the fear is actually present. It should be noted in conclusion that, as with emotional attributes, there is some question as to whether emotional dispositions are emotions. This question arises particularly since Wittgenstein treats love as both an emotional attribute and an emotional disposition, while seemingly denying that love is an emotion (cf., RPPII 152).

2.4.3 Ascription of Emotion

A number of characteristics of emotions were discussed in the preceding sections, and these features form a core component of Wittgenstein's conceptual analysis of emotion. But an equally significant aspect of his investigation concerns the ascription of emotion. In particular, who (or what) can and cannot have emotions, and on what basis do we say in a given situation that someone does or does not feel an emotion? Outlining key elements of Wittgenstein's response to these questions is the purpose of the present section. The material below draws on remarks that Wittgenstein makes specifically with respect to emotion, together with remarks regarding other psychological concepts (e.g., pain, thinking) that apply to emotion as well.

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[84]It should be noted that pain also cannot be put to the test in this way, since "If I truly felt pain, I would not have stopped feeling it so quickly" does not make sense.

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As would be expected, Wittgenstein's understanding of who can feel emotion is conceptual and appeals to language games. Two interconnected lines of thought can be discerned in this matter. The first is evident when Wittgenstein remarks that concepts such as hope and belief are "embedded in human life, in all of the situations and reactions which constitute human life" (RPPII 16). In other words, the concepts apply within the context of *human activities*, and Wittgenstein interprets "Human beings think, grasshoppers don't" as a conceptual statement that means that the concept of thinking refers to activities of human life, not of grasshopper life (RPPII 23). More specifically, Wittgenstein points out that a word like "think" is learned in certain circumstances (e.g., in appropriate circumstances, we are taught "That man is thinking"). Thinking is, for instance, connected in the language game to myriad other concepts and activities such as deciding where to go on vacation, balancing one's checkbook, and acting lost in thought. Thus, "thinking" is used (makes sense) only when other relevant concepts apply as well, and because grasshoppers do not take part in the activities associated with these concepts, the concept of thinking does not apply. Correspondingly, there are no circumstances in which we learn "Our pet grasshopper is thinking," a question like "Do grasshoppers think?" is nonsensical, and a comment like "That grasshopper is not thinking" is likewise not part of the language game (RPPII 192, 200-201; Z 114, 117, 129-130).[85] Furthermore, it is *human* activities that provide the foundation for the use of psychological words, and an intrinsic component of learning to use words like "thinking" is learning that they apply to *people* in certain contexts. As a result, the primary use of a word like "think" is with respect to human beings. While it does make sense for a child to say "My doll thought it over and decided to serve muffins rather than cake at her tea party," the sensicality depends on human life. Dolls cannot think, but to the extent that the child's play imitates human life, statements made concerning that play make sense (LW 41, 797, 800; PI 282, 360). Also, if the primary use of psychological words is with respect to people, then this suggests that although applications of psychological words to non-humans can make sense, the words do not have *the same* sense as in the case of people. This implies, for example, that even if robots acted exactly like people, the sentence "Robots think" would not have the same meaning with respect to thinking as "Humans think."

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[85]Wittgenstein's remarks in RPPII 23 and 24 indicate that "Grasshoppers don't think" does have sense. The question "Do grasshoppers think?" and the response "Grasshoppers don't think" are presumably analogous to the question "Does this room have length?" and the response "Of course the room has length" discussed in §2.1 above. Although the question about the room is nonsensical, the response may nevertheless be given a (sensical) conceptual interpretation. In the case of the grasshoppers, "Grasshoppers don't think" can mean that sentences like "The grasshopper decided to take a nap instead of eating" do not make sense.

This first line of thought is a kind of general argument that participation in human activities determines to whom psychological concepts apply. But according to Wittgenstein, a fundamental part of engaging in human activities is engaging in language games, and a fundamental part of engaging in language games is using language. This underlies a second facet of Wittgenstein's understanding of who can, conceptually speaking, have emotion and why (that is, of whom does it make sense to say "He has an emotion" and why). In particular, Wittgenstein sees the possession of (human) *language* as necessary for the possession of certain emotions (PI i 148; RPPII 308-310; Z 518-520). For instance, a dog can feel fear (e.g., it makes sense to say "The dog was afraid") because dogs engage in activities like running away from larger dogs that chase them, and these activities are part of the language game with "fear."[86] But a dog cannot feel remorse (that is, "The dog feels remorse" does not make sense) because having remorse involves linguistic responses such as "I am very sorry I did that" or "Let me make that up to you" or "In retrospect, I should have done things differently, and I will do them differently from now on." Thus, since dogs do not play the relevant language games, which involve using language, the concept of remorse does not apply to them.[87]

Having thus discussed who can have emotions, it is possible to discuss the basis upon which we ascribe emotions to those who can have them. In this regard, Wittgenstein recognizes a difference between first person ascription (ascribing emotion to oneself) and third person ascription (ascribing emotion to someone else). In the latter case, ascription is based on observation of behavior. As Wittgenstein puts it, "If someone behaves in such-and-such a

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[86]Language games with "fear" derive, it seems, directly from pre-linguistic behaviors, and this may be a reason that dogs can feel fear even though they do not engage in linguistic behavior.

[87]"Can dogs feel remorse?" is, for Wittgenstein, a conceptual question in that to answer it, one must ask whether dogs are competent players of the relevant language games, not whether dogs engage in certain mental activities. It is of course an empirical fact that dogs do not, and empirically cannot, play the language games associated with remorse. Thus, "Dogs cannot feel remorse" could be interpreted as a factual statement that means, roughly, "Dogs are not empirically able to engage in language games related to remorse." (This should not be taken to imply though that feeling remorse *is* the action of engaging in the language game. In addition, the truth of the factual statement depends on the *concept* of remorse. If the language game with "remorse" changed significantly, the truth of the factual statement might also change.) But Wittgenstein warns against interpreting a sentence like "Dogs cannot feel remorse" as a factual statement about dogs' mental or physical abilities *per se* (i.e., without reference to the language game). For he specifically notes that although only those who can reflect on the past can feel remorse, this does not mean that only someone who has a certain mental ability is capable of feeling remorse (RPPII 309; Z 519). In other words, feeling remorse is linked to reflecting on the past, and Wittgenstein views the link as a conceptual one, and hence one that involves language games. So participation in relevant language games, not some empirical "ability to reflect" that makes no reference to language games, is what Wittgenstein sees as crucial to a person's ability to reflect and to feel remorse.

way under such-and-such circumstances we say that he is sad" (RPPII 324; Z 526). In other words, using the terminology from §2.3 above, if someone exhibits phenomena of emotion, we ascribe emotion to him.[88],[89],[90] But this account is more nuanced than it might at first appear. Wittgenstein points out, for example, that if a man behaved sadly in *all* circumstances, we would not say that the man is sad. For the duration of the behavior must be conceptually appropriate for the emotion (RPPII 324; Z 526). Sadness-behavior, for instance, occurs against a backdrop of not-sad-behavior. So the behavior of a man who always cries and continuously says "I am sad" is not sadness-behavior because the relevant "baseline" behavior (e.g., periods of not crying) is missing.[91] Also, sadness does not begin and end in well-defined intervals or alternate with other emotions (or the lack of emotion) according to such a schedule. Thus, if someone alternated every two minutes between sobbing and laughing, his behavior would not constitute either phenomena of sorrow or of happiness, and hence we would ascribe neither sorrow nor happiness to him (LW 406; PI i 148). Wittgenstein gives another example in RPPII 321: If we laughed and smiled and said how happy we are both when a friend became ill and when he recovered, then these behaviors would not be phenomena of joy, even though they are characteristic of joy. This case is connected it seems to the *reasons* one has an emotion, since reasons for feeling joy are such that it does not make sense to feel joy both when someone becomes ill and when he recovers.

Wittgenstein's remarks also shed light on another notable feature of the relation between behavior and third person ascription of emotion, namely,

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[88]Conceptually speaking, it seems that it moreover makes sense to ascribe an emotion to someone *only if* he exhibits phenomena of emotion. But empirically, in some given situation, there are other possibilities. Using the example discussed in footnote 75, we may have learned through past experience that a man coughs (possibly in a specific way) when he is sad. In this case, his coughing (in the specific way) is sufficient for the ascription of sadness, even though coughing is not a phenomenon of sadness. Nevertheless, this ascription is appropriate only because he exhibited coughing *and* phenomena of sadness previously such that we were empirically able to associate (his) coughing with (his) being sad.

[89]For the most part, phenomena of emotion are characteristic expressions of emotion occurring in appropriate contexts. There may be some divergence in the two concepts, however. (For example, sweating may be a phenomenon of fear but not a characteristic *expression* of fear.) This issue is touched on in §2.3 and §2.4.1 above.

[90]Bennett and Hacker put this point about ascribing (and identifying) emotions in yet a third way, saying "the behavioral reactions and actions that manifest an emotion do so *only given the appropriate subjective context of their manifestation*" (PFN 222). One of the examples they use to illustrate this is similar to an example in §2.3 above, for they say that one's tears are not necessarily an accompaniment of grief, but may be occurring because one is peeling onions.

[91]It is difficult in this case to determine what emotion, if any, the man *is* feeling. For even severe depression does not, conceptually, involve non-stop crying. Wittgenstein does not tackle this issue, though, and just remarks that saying the man is sad involves using the word "sad" in a way that departs from normal usage (RPPII 324; Z 526).

the role of *inference*. As discussed in §2.4.1 above, the concept of emotion includes having characteristic facial expressions. These expressions in relevant contexts are phenomena of emotion, and as such, are a basis for third person ascription of emotion. Wittgenstein takes this a step farther, however. He claims that it is part of the concept of emotion (i.e., it makes sense) to ascribe emotion *directly* based on facial expressions; moreover, these expressions that we see are in the first place expressions of emotion, not arrangements of facial features. It is for this reason that Wittgenstein finds it correct to say that we *see* emotion (RPPI 287; RPPII 170, 570; Z 225).[92] In other words, ascribing emotion to others does not involve a process of inference like this: I see the person's facial arrangement x. Facial arrangement x indicates emotion y. (Here, "indicates" is used as in "Blue/green swelling around the ankle area indicates a sprain." It also includes inferring y from x because of the reason "My face has x when I feel y.") Thus, the person feels emotion y.

This analysis runs parallel to one Wittgenstein gives of pain. With respect to pain, Wittgenstein denies that I infer pain in someone else based on the presence of behavior that I exhibit when I am in pain (RPPII 719; Z 537). That is, he rejects the following picture of ascription: The man is groaning. I groan when I'm in pain. I assume (by analogy between him and me) that he is feeling what I feel when I groan. Thus, he is in pain. Instead, Wittgenstein maintains that pain is ascribed directly based on the presence of pain-behavior, such as groaning. It is the groaning *as a phenomenon of pain* that (directly) warrants ascription of pain, not the groaning *as something I do when I'm in pain.* So the behavior I exhibit when I feel pain is not, conceptually, what justifies my ascribing pain to someone else who exhibits that behavior. Wittgenstein also suggests that tending to someone who is in pain is a primitive (i.e., pre-linguistic) reaction (Z 540-541). Hence, this tending too is a direct reaction to observing pain-behavior. It is not mediated by any inference about someone feeling as I do (RPPII 719; Z 537, 542).

Behavior is therefore the basis of third person ascription of psychological concepts such as emotion and pain, yet Wittgenstein rejects the idea that behavior is relevant because it indicates that someone else is feeling what I feel when I behave the way he is behaving. Wittgenstein also dismisses the idea that the behavior is relevant because it indicates, as blue/green swelling indicates a sprain, the presence of certain mental processes (RPPI 292). Thus, I do not need to infer that someone feels like I do, or that he has certain mental processes occurring, in order for his behavior to be a basis for ascription of a psychological concept x. What *is* needed for the psychological words to be legitimately used is for us to be playing the same

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[92]But there is also a question for Wittgenstein of whether emotion is *noticed* rather than *seen* (cf., RPPII 552).

language game (RPPI 290, 292). This includes, for example, that he is not an actor in a play, that he is not pretending or lying, and that he is a person and not a robot. In those cases, the behaviors are not phenomena of x, and hence, they do not justify the ascription of the psychological concept to the person exhibiting them. Still, Wittgenstein maintains that it is not necessary to *assume* or *presuppose* that this condition is met before we use the psychological words (PI v 153-154; RPPI 290). For he seems to think that it also is part of the language game for us to ascribe psychological words, and to react to phenomena of x that we observe, directly without presupposing that the person is playing the same language game we are.

Wittgenstein's analysis of emotion indicates that we ascribe emotion to animals on the same basis as we ascribe it to (other) people, namely, on the basis of behavior (RPPII 324; Z 526). A difference between the case of people and the case of animals is that, as mentioned earlier, animals do not exhibit the linguistic behaviors that are necessary for the possession, and hence also the ascription, of some emotions such as remorse.[93] Wittgenstein notices also that first person uses of "fear" by people make sense, but first person uses of "fear" by animals are not part of the language game. So although an emotion such as fear can be ascribed to both people and animals, the concept of fear as it applies to people is not exactly the same concept as it applies to animals.[94] Corresponding to this difference in uses is a difference in the role observation plays, since for animals but not for people, fear is thus only ascribed based on observations (Z 524).

This latter result depends on a more basic result of Wittgenstein's analysis. Specifically, whereas third person ascription of emotion is based on observation of behavior, many (possibly all) first person uses of emotion words do not require any observations (RPPII 169).[95] It is not completely clear, however, on what Wittgenstein *does* take first person uses of emotion

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[93]This conclusion presupposes that remorse *is* an emotion. But if Wittgenstein's remark (cf., RPPI 836) that "an emotion has a characteristic expression one would use in *miming* it" is accepted, along with the interpretation of that remark given in §2.4.1 above, then all emotions have a characteristic expression that does not involve the use of language. In that case, (1) remorse is not an emotion, and (2) animals' lack of (human) language use does not preclude the ascription of any emotion to them. (Alternatively, however, Wittgenstein's remark about characteristic mimed expressions could be read as just applying to those emotions that have characteristic expressions that do not involve language use. Or perhaps, having only characteristic expressions that involve language use may distinguish, say, emotional attributes from emotions; then remorse might be classified as an emotional attribute rather than an emotion.)

[94]As discussed earlier, another difference in the concept is that it applies to animals in virtue of human language games, so the concept with respect to animals is a kind of secondary concept.

[95]In the following discussion, the "first person use of emotion words" will be treated rather than the "first person ascription of emotion." As the reader will see, some uses of (e.g.) "I am afraid" (such as those that replace pre-linguistic fear-behavior) would not properly be said to involve the speaker's ascription of emotion to himself.

words to be based. That is, it is not clear what justifies these uses. But his remarks on the use of utterances like "I am in pain" and "I am afraid" help to illuminate the issue somewhat.

An important point Wittgenstein makes regarding the utterance "I have pain" is that this can, grammatically, be an utterance of pain. As such, when a person learns to use "I have pain," he learns a new pain-behavior (LPP 38).[96,97] Similarly, "I am afraid" can be an utterance of fear, and "I am furious!" can be an utterance of rage (LPP 39; RPPII 169).

Wittgenstein classifies pre-linguistic pain-behaviors, like groaning and grabbing one's ankle, as primitive reactions upon which the language game involving "pain" is based (Z 540-541).[98,99] Then the language game includes the linguistic behaviors (e.g., uttering "I'm in pain") that can replace the pre-linguistic ones (LPP 328; PI 244; RPPI 313). Hence, correctly using "I have pain" as an utterance of pain does not require (self-)observation. Rather, it requires linguistic competence with the word "pain." For instance, competency with using "I have pain" as an utterance of pain involves using it to replace (e.g.) grabbing one's sprained ankle and not to replace scratching a mosquito bite on one's arm.[100] This thinking could also possibly, in Wittgenstein's view, be extended to include other pre-linguistic behaviors such as cowering and pounding one's fist: These are a primitive fear-behavior and rage-behavior, respectively, which are replaceable in the language game by the utterances "I'm afraid" and "I'm furious."[101]

Yet there are numerous ways that emotion words are used in the first person. For example, "I am afraid" can be an utterance of fear, but it can also be used (e.g., in different circumstances or for different reasons) as a report of fear (RPPII 156, 735). Not all of the uses are replacements for primitive reactions, and generally, since the primitive reactions are not descriptions, they are only replaced by utterances that are not descriptions. This means that utterances like "I'm less afraid of him now than before" and "I keep on hoping . . . ," which are descriptions, do not replace primitive reactions (RPPII 726, 728). Hence, the primitive-reaction argument from the preceding paragraph does not show that use of "I'm less afraid of him

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[96]But as Wittgenstein points out, when a speaker learns to use third person utterances like "She has pain," he is clearly not learning a new pain-behavior (LPP 38). This is another difference between first and third person uses of pain (and emotion) words beyond the difference in the basis of ascription.

[97]Recall from §2.3 above that pain-behaviors are phenomena of pain. The utterance of pain is therefore also grounds for third person ascription of pain to the speaker.

[98]Primitive (pre-linguistic) reactions are mentioned briefly in §1.2 above as well.

[99]Wittgenstein also seems to suggest that indicating the cause of one's fear is, like grabbing one's ankle in pain, a primitive reaction (LPP 70).

[100]That is, it is part of the language game for me to utter "I'm in pain" without having observed anything. But if I said "He's in pain" without observing anything, it would be clear that I do not (fully) understand how "pain" is used.

[101]To be precise, *cowering* and *pounding one's fist* are linguistic concepts; but in a more basic sense, the actions related to these concepts are probably pre-linguistic reactions.

now than before" is not based on observation.

The full spectrum of first person uses of emotion words will not be explored here (for other examples, see LW 20-21; PI ix 160-161; RPPII 722; Z 78).[102] It will also not be investigated specifically which first person uses replace primitive reactions (and which do not), or whether all first person uses of emotion words are phenomena of emotion (and are thus a basis for third person ascription). Moreover, it will not be investigated which, if any, of the first person uses *are* based on self-observation of behavior.[103] But it should be noted that what is common to all the first person uses is that the audience will judge in each case whether the emotion words have been used correctly based on the speaker's (other) behavior and the context in which it occurs. In other words, the audience will judge whether their third person ascriptions, which are based on the subject's behavior, would agree with the subject's first person uses. As Wittgenstein says, "...if I say I have pain, it will depend on the agreement of my behavior with yours *in other respects* whether you judge "he has pain"" (LPP 38).

When dealing with some psychological concepts, however, there is no behavior (except the utterance) upon which third person ascriptions could be based. For example, Johnston (1993) discusses an utterance like "I remember going through every stage of the calculation in my head." In cases like that, Johnston claims that what is important to us is not whether the speaker had some justification for the utterance (Johnston seems to think there is no evidence on which the utterance is based), but that the speaker was sincerely inclined to say what she said.[104] For her use of that utterance "characterizes her as having had a particular experience" (pp. 12-13). Johnston apparently takes this view regarding utterances of emotion, such as "I'm furious," as well (cf., pp. 12, 158). But instead of saying that there is no justification for first person utterances of emotion, or that the justification for first person utterances of emotion is not of interest to us, it could be suggested that it is my competency as a (human) language user that justifies my use of first person utterances of emotion. If this latter suggestion is accepted, then it might also apply more generally to first person uses of emotion (or psychological) words.[105] This would mean that looking for

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[102]The reader is also referred to Johnston (1993) for a discussion of a variety of first person uses of psychological words and characteristics of these uses (pp. 158-164).

[103]This is a vast area for study. Further issues include: (1) Wittgenstein also says there are utterances of hope and wish (RPPII 3, 728). It is unlikely that these are replacements for primitive reactions, since all phenomena of hope, for example, involve language (see §2.3 above). Thus, an utterance of hope or wish is more likely an utterance of *a* hope or *a* wish. So although the terminology is the same for (e.g.) "utterances of fear" and "utterances of hope," these may represent slightly different concepts. What are the differences? (2) There are verbal phenomena of emotion that are not "first person utterances," such as "How wonderful!" How do these compare (e.g., with respect to replacing primitive reactions) to first person utterances involving emotion words?

[104]Wittgenstein seems to convey a corresponding opinion in PI 653-656.

[105]For the basis of use does not seem immediately clear even in the case of a description

any basis beyond this, such as on what a speaker's inclination is based or on what his description of his state of mind is based (observation of something? conscious awareness of something? and of what?), would take one out of the realm of philosophical investigation and would require studying something else besides grammar and concepts.

To conclude this section, two separate issues can be addressed. First, it seems that the human activities Wittgenstein refers to in discussing the applicability of psychological concepts are, taken together, the "hurly-burly of human actions" that he mentions in Z 567 and that is discussed at the end of §2.3 above. It was suggested in §2.3 that this hurly-burly of actions, of which language games are inherently part, is the context that allows us to recognize any one of these actions as a phenomenon of some concept. Yet Wittgenstein implies in PI i 148 that phenomena of hope are part of a form of life [*Lebensform*]. So putting these ideas together would illuminate Wittgenstein's notion of a "form of life." Specifically, the "hurly-burly of human actions" is the human form of life. It is therefore within the human form of life that certain actions can be (i.e., make sense as) phenomena of emotion, and it is also this form of life that determines to which beings the concept of emotion can apply. The second issue comes up in regard to Wittgenstein's remarks in PI 281: ""But doesn't what you say come to this: that there is no pain, for example, without *pain-behavior*" — It comes to this: only of a living human being and what resembles (behaves like) a living human being can one say: it has sensations; it sees; is blind; hears; is deaf; is conscious or unconscious." Here Wittgenstein is again reinforcing the tenants of philosophical conceptual analysis. His aim is to study the concept of pain by studying how words like "pain" are used; and this use (including ascription) involves, as the discussion above has shown, manifestations of certain behaviors. But Wittgenstein is not thereby making a factual claim about what pain is or about its existence. And on that note, it is appropriate to turn to the topic of the next section, "what emotion is" according to Wittgenstein.

2.4.4   "What Emotion Is"

Earlier sections of this thesis have shown that, according to Wittgenstein, the philosopher's task does not involve asking "What is emotion?" As §1.2 indicated, Wittgenstein argues that philosophers should seek to describe how "emotion" and terms like "fear," "anger," and "joy" are used and the similarities and differences between the uses. The philosopher's objective is *not* to try to uncover some hidden essence of emotion (for there is no such hidden essence), or to develop a definition that explains what emotion is (for no such definition will be able to adequately account for all the ways "emotion" appears in the language game). Then §2.2, §2.4.1, and §2.4.2 provided

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like "I am less afraid now than I was before."

concrete examples of how Wittgenstein analyzes psychological concepts, including emotion. These analyses involve determining which grammatical characteristics the concepts have (e.g., whether "Images are voluntary" and "Emotions have objects" make sense; that is, whether sentences like "Stop imagining that" and "They are mad at each other" are used in the language game). Another way to study emotion conceptually is to look at how emotion is ascribed. Hence, as detailed in §2.4.3, Wittgenstein's treatment of emotion also includes investigating to whom it makes sense to ascribe emotion and on what basis ascriptions of emotion are made.

Given these points, together with Wittgenstein's view of meaning, it is no surprise that Wittgenstein says that when we ask what "I am frightened" means, we should ask in what contexts "I am frightened" is used (LW 14, 22; PI ix 160-161). For example, it can be used (i.e., makes sense) when a dog is chasing me or during a severe thunderstorm. I can use it in those cases as, for instance, an utterance of fear or an explanation of why I am covering my ears, respectively. It can also be used as a report, a reflection, or an admission. In addition, I can say "I am frightened of the dog" or "I was frightened when the storm began an hour ago, but I am not frightened now," which illustrates that emotions have objects and a course. This contrasts with answering "What does "I am afraid" mean?" by trying to determine what (if anything) I am referring to when I utter it. Wittgenstein of course rejects the idea that introspection or any observations I make of myself when I say "I am afraid" help us understand the meaning of the utterance (see discussion in §1.2 above), and this goes together with his assertion that no answer to "What am I referring to?" will be forthcoming through introspection or observation (LW 23; PI ix 160-161).

Wittgenstein further seems to suggest that answering "What is fear?" equates to answering "What does "being afraid" mean?" Answering "What is fear?" would therefore go back to examining various uses of "I'm afraid," "He's afraid," and so on. But Wittgenstein mentions as well that a way to define fear (that is, to explain what being afraid means) "at a *single* showing" is to play-act fear (LW 24; PI ix 161).[106] At first, this looks as if Wittgenstein is claiming that fear is a kind of behavior, and moreover, that it is thus indeed possible to define "fear" in a simple, concise way. Such a conclusion is too hastily drawn, however. For Wittgenstein is not attempting to define fear except in the sense that to define fear is to say how "fear" is used. This is evident when the emphasis in Wittgenstein's remark is put on the restriction "at a *single* showing." What Wittgenstein is really suggesting is that if we were allowed to give only one instruction regarding how to use "fear," we should point to a man who is play-acting fear and say "He is feeling fear" or "He is afraid."[107] The effectiveness Wittgenstein per-

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[106]Wittgenstein's exact words are: "What is fear? What does "being afraid" mean? If I wanted to define it at a *single* showing — I should *play-act* fear" (LW 24; PI ix 161).

[107]Or, better perhaps, would be to say "He is play-acting feeling *fear*" or "He is play-

ceives this single instruction to have, despite the myriad ways "being afraid" is used, can be traced to a conceptual characteristic of emotions. In particular, emotions have (according to Wittgenstein's analysis) characteristic mimed expressions. It was proposed in §2.4.1 above that such expressions can, conceptually, be recognized as expressions of emotions even within the minimal context that miming provides. This explains why play-acting fear is helpful at all in conveying what it means to be afraid. It also motivates Wittgenstein's choice of play-acting fear as a way to convey a significant amount of information regarding fear in a single description of how "fear" is used.[108]

Another part of Wittgenstein's analysis of emotion involves considering how the concept of emotion differs from, for example, concepts of sensations and behaviors. That is to say, Wittgenstein's analysis indicates that emotions *are not* sensations or behaviors. In these investigations, Wittgenstein employs his usual methods of comparing emotion to sensations, behaviors, and so forth: He considers the roles of each concept in the language game, such as how "emotion" is used versus "sensation," and he focuses on the characteristics that belong to each concept.

In the case of sensations, for instance, Wittgenstein indicates that a question like "Are you enjoying the concert?" is used differently (e.g., to elicit different information; in response to different circumstances) than "What sensations do you feel in your chest and face while you are listening to the concert?" is used. Moreover, when we learned to use phrases like "I'm enjoying the concert very much," it was not taught by reference to sensations, images, or thoughts that occurred to us as we heard the music (RPPII 500-501; Z 168, 170). In addition, Wittgenstein admits that smiling when I feel sad might help to cheer me up; but he denies that I feel happier because smiling sensations feel more pleasant than frowning sensations (RPPI 453-454). That is, Wittgenstein claims that if I am sad and I say "I feel better now" after smiling, I am commenting only on the improvement in my emotional state and *not* on the improvement in the feeling of the sensations around my mouth. In particular, "I feel better now" would only make sense with regard to sensations as well if frowning was for some reason physically painful to me, and turning the corners of my mouth upward relieved the pain. Similarly, one may be joyful and have pleasant physical feelings while taking a walk on a warm and sunny spring day. But in general, if one expresses one's joy by saying "How wonderful everything is!," this utterance is not also being used to report the effects of the weather on one's physical condition (RPPII 322).[109] Nevertheless, if the object of one's joy is one's

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acting being *afraid*."

[108]This interpretation is supported by LW 20, which says, ""What is fear?" — "Well, the *manifestations* and occasions of fear are as follows: - - -" — "What does "to be afraid" mean?" — "The expression "to be afraid" is used in *this* way: - - -"."

[109]As discussed in §2.4.1 above, emotions can have characteristic sensations that co-

pleasant physical feelings, then the expressions of joy can (conceptually) indeed also be expressions regarding physical condition. This could occur if rainy, chilly weather makes one's joints ache, and the warm and sunny weather alleviated the pain, so that one thereby takes joy in the sensations (or lack of sensations) one has.[110]

Other conceptual differences between emotions and sensations have to do with characteristics of each. For it makes sense to say of a sensation, but not of an emotion, that (for example) it came and went approximately every five minutes for an hour (PI i 148). Also, as pointed out in §2.4.1, Wittgenstein differentiates emotions from sensations based on their causes. Namely, it makes sense for the cause of an emotion to be different than the cause of a sensation that co-occurs with the emotion (Z 507). As discussed in §2.4.1 as well, sensations (but not emotions) have a place and are localized or diffuse. In relation to this, sensation words are learned differently than emotion words (LPP 39, 68, 282). I learn, for instance, to use "I have pain in my ankle" to replace my (primitive) pain reaction of grasping my ankle. But I do not learn to use "I am depressed" in any comparable way.

Wittgenstein even goes so far as to assert that "We should not even say "Pain is localized; depression is not." There is *no question* of that applying to depression" (LPP 282). This seems analogous to the case of "Has this room a length?," for which Wittgenstein considers the response "Of course it does" to be simply a way of saying "Don't ask nonsense" (cf., §2.1 above). "Is depression localized?" might be a similarly nonsensical question because the issue of location does not ever arise in the language game with the concept of depression, just like lacking length does not arise with the concept of a room. That is, neither "This room has no length" nor "My depression has a location" are ever part of the language game. It is expected then that the response "Depression is not localized" should be interpreted as a conceptual statement that says that sentences like "The depression is in my foot" do not make sense, just as "The room has length" should be interpreted to mean that "The room is ten feet long" makes sense.

This idea might also be extended to the question "What is emotion?" and the response "Emotions are not . . . ," since according to Wittgenstein's analysis, the concept of emotion does not admit the possibility of giving a definition. There is, to use his phrase from LPP 282, *no question* of being

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occur with the emotion. But Wittgenstein's point (in RPPII 322, for example) is that, conceptually, the emotion and any accompanying sensations are distinct. Furthermore, his comment in RPPII 322 that "joy goes along with physical well-being" should not be interpreted as pertaining only to positive physical sensations that co-occur with joy. For someone who is in great pain can feel joy too, such as when the doctor says that he will be able to successfully alleviate the pain through a simple procedure.

[110]It also makes sense to take joy in *having* those feelings. That is, one can be joyful over feeling well. Or upon waking to a warm and sunny day, one can be joyful over the *prospect* of feeling well (even if one's joints still hurt at that moment), which is a point addressed in the previous footnote too.

able to say "Emotion is ...." Hence, "What is emotion?" does not make sense as a request for a definition; and consequently, any response "Emotions are not y" should be interpreted grammatically as a statement to the effect that the use of emotion words differs from the use of y words. "What is emotion?" may make sense, however, if it is interpreted as the question "What does "emotion" mean?" (i.e., as the question "How is "emotion" used?"). This would then be like the question "What is fear?," which was discussed earlier in this section. So, for example, one way to answer "What is emotion?" would be to point to someone who is exhibiting phenomena of emotion and say "He is feeling emotion."

Turning now to behaviors, Wittgenstein's analysis reveals that behavior plays important roles in the expression of emotion and in the ascription of emotion. Pounding one's fist, for example, can (conceptually) be an expression of anger, and correspondingly, in appropriate contexts, it is the basis for saying "He is angry." In addition, the meanings of "I am angry" and "He is angry" are linked to the contexts in which these phrases are used. These contexts include behaviors, some of which are characteristic of the emotion in question. An obvious thought, therefore, is that despite Wittgenstein's objection to investigating what emotion is, the result of his analysis is that emotions (happiness, fear, anger, joy, etc.) simply *are* the behavior, or patterns of behavior, that are characteristic of each of them. Or alternatively, an emotion is a certain profile of behavior enacted in a certain context, namely, a context that is appropriate for that particular emotion.[111]

Although it is clear that Wittgenstein rejects these possibilities (e.g., RPPII 35, 77), it is not easy to give his reasons for doing so. Wittgenstein would likely reject the case of emotions being behaviors (without context) at least on the grounds that emotion words are used in more sophisticated ways than this accounts for. In particular, the contexts in which the behaviors occur are relevant. But it is more difficult to provide his reason(s) for rejecting the case of an emotion being behaviors-within-a-context. Wittgenstein's view seems to be that our concepts of emotions involve the state of mind of the person having the emotion (cf., LW 43; PI ix 161; RPPII 166; Z 523). In other words, being afraid is not just about exhibiting fear-behavior, it is also about having a certain state of mind.[112] If he is correct, then emotions

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[111]Another related possibility is to claim that the phenomena of an emotion are the emotion, assuming that the phenomena of the emotion differ from the characteristic behaviors. This would then include not just characteristic behaviors *per se* in appropriate contexts, but also characteristic reactions (such as sweating or an increased heart rate for fear) in those contexts. This would be in keeping with the suggestion that third person ascription of emotion is based on someone exhibiting phenomena of emotion more broadly, not just characteristic *behaviors* in certain contexts.

[112]This may include having fear-thoughts, although the term "state of mind" will not be analyzed here. One comment should be made, however: If having an emotion involves having a certain state of mind, then this ties in with the material covered in §2.3 and

are *not* emotion-behaviors.[113] Still, it remains to be shown that there is a grammatical analysis that supports his claim.

One area that might provide such a conceptual analysis is first person uses of emotion words, in particular, first person "descriptive" uses (i.e., not first person uses that replace primitive emotion-reactions).[114] This avenue of investigation is suggested by, for example, Wittgenstein's comments in RPPII 33. These indicate that in cases where no first person use exists, such as with respect to emotion words and animals, emotions can (conceptually) be certain behaviors in certain contexts.[115]

To pursue this line of thought, consider the following scenario: Two students each need to give an important presentation for a course. Both students have sweaty palms and an increased heart rate beforehand. But the student who is worrying about remembering the material will report "I am nervous," whereas the student who thinks that the audience will laugh at him and that his professor will fail him will report "I am afraid." In addition, the first student could instead report "I was worrying about remembering the material, but I didn't think people would laugh or that I would fail," and on the basis of that verbal behavior alone, it makes sense for someone to say "That student was nervous, but not afraid." Thus, third person ascriptions may also in this way provide evidence that emotion concepts involve the subject's state of mind (e.g., worrying just about remembering the material is a reason to be nervous in the given context but not a reason to be afraid), especially if "I was worrying about . . . " is a description of a state of mind.

If this analysis is correct, then uses of "She's afraid" and "I'm afraid" are tied together with the subject's behaviors and the subject's state of mind. Thus, the concept of being afraid (and the concept of fear) involves behav-

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extends what can be said about the relation between behavior and the subject matter of psychology. Wittgenstein suggests that psychologists can give a description of a state of mind via a description of behavior (PI v 153; RPPI 287-288). This would thus be possible because certain behaviors in certain contexts are conceptualized in the language game as phenomena of psychological concepts, and these concepts involve states of mind. For instance, groaning can be seen as (makes sense as) an expression of pain. (In other words, groaning in certain contexts has conceptual connections to pain. An example of such a connection is that a doctor will respond to a patient's groaning by giving the patient pain medication or by asking "Where does it hurt?" Also, if I have a sprained ankle, it makes sense in the language game for me to say "I'm in pain," instead of groaning.) Hence, a report that a subject was groaning can serve as a report of the subject's behavior, of the subject's being in pain, and of the subject's state of mind.

[113]This would also imply that emotions are not phenomena of emotion more generally (such as sweating, high heart rate, etc.).

[114]Note that this is not the same as appealing to first person *experiences* of emotion.

[115]A stronger conclusion to draw from RPPII 33 (and which is suggested by RPPII 333 as well) is that in our language game, when we speak of emotions with respect to animals, we *are* speaking behavioristically. (This difference between humans and animals would be consistent with the result mentioned in §2.4.3, that the concept of emotion differs between humans and animals in that emotions are ascribed to animals only on the basis of observed behaviors.)

iors and states of mind. One might still try to argue, however, that emotions are behaviors (or, more broadly, phenomena) in a context, where the states of mind are part of the context that surrounds the behaviors (or phenomena). This is a difficult objection to meet because there is the temptation to respond, as Wittgenstein might: "I do not use "I was afraid" (just) to tell someone how I *acted* or what *phenomena* occurred; thus, emotion words are used differently than behavior (or phenomena) words, and emotions are not behaviors (or phenomena)." But the claim "I do not use "I was afraid" ..." is exactly what a behaviorist would deny. In this way, the disagreement regarding the concept of emotion is a disagreement regarding how we use language.

For the present, what is relevant is that the discussion of states of mind naturally leads to the idea that, rather than being behaviors, emotions are mental states or processes or mental entities of some sort. To this type of suggestion, Wittgenstein comments in Z 487, ""But I do have a real *feeling* of joy!" Yes, when you are glad you are really glad. And of course joy is not joyful behavior, nor yet a feeling round the corners of the mouth and the eyes. "But "joy" surely designates an inward thing." No. "Joy" designates nothing at all. Neither any inward nor any outward thing." In a similar vein, he also remarks in Z 446, "...let us not think we *must* find a specific mental process, because the verb "to understand" is there and because one says: Understanding is an activity of mind."[116] Wittgenstein's discussions in these areas (including his "private language argument"), as well as on topics such as the privacy of sensations and sameness of sensations, are beyond the scope of this thesis, however.[117] So it must suffice to just note that he reacts too against the claim that emotion words, or psychological words in general, refer to these kind of inner mental processes or objects.

One last possibility to be considered is that emotions are *brain* states. This pertains to Damasio's work, which proposes that emotions are changes in body state and brain function (see §3 below). In this case, Bennett and Hacker argue that the concept of an emotion differs from the concept of a brain state in that brain states lack the intentionality (that is, the "directedness toward an object") that most emotions possess. (Bennett and Hacker also see this as a reason that emotions are not "somatic reactions," such as heart rate, sweating, and trembling.) Furthermore, "[o]ne cannot individuate an emotion by reference to either brain states or somatic reactions independently of the circumstances of their occurrence and the knowledge or beliefs, as well as the desires or wishes, of the creature" (PFN 209).[118] Or to put it differently, for an emotion to be *that* emotion (such as anger, not fear) requires a context that neither brain states nor somatic reactions

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[116]Similar points are made in PI 304-308.
[117]See, for example, PI 243ff, 293.
[118]Hacker (2004) also makes these points (p. 16).

alone provide. Hence, emotions are not brain states.

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In sum, §1.2 and §2 have given a variety of arguments and examples that show why and how Wittgenstein (1) rejects the project of explaining what emotion is and (2) replaces that project with grammatical investigations instead. In addition, these investigations indicate that there are conceptual differences between emotions and sensations, behaviors, and brain states; and therefore, emotions are not sensations, behaviors, or brain states. Moving from conceptual analysis to neuroscience, key components of Damasio's hypotheses regarding emotion and feeling are outlined next in §3. Then §4 compares prominent aspects of Wittgenstein's and Damasio's studies of emotion and the results of those studies.

3 Damasio's Scientific Work Regarding Emotions and Feelings

3.1 Damasio's Framework and Hypotheses

The books *Descartes' Error: Emotion, Reason, and the Human Brain* (DE), *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (FWH), and *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain* (LS) present Antonio Damasio's views of emotion and feeling and of the relations that emotion and feeling have to consciousness and decision-making.[119] Drawing from these sources, the framework that underlies Damasio's claims regarding emotion and feeling is introduced in §3.1.1 below, and Damasio's conceptions of emotion and feeling are then explained in §3.1.2. Damasio's "somatic-marker hypothesis" is described in §3.1.3. In §3.1.4, Damasio's proposals concerning emotion/feeling are briefly compared with William James' famous theory of emotion.

3.1.1 Body, Mind, Maps, and Images

Damasio's hypotheses regarding the nature of emotion and feeling involve a number of basic ideas. In this section, these fundamental notions are described. Also, important terms used by Damasio are defined.

In Damasio's terminology, the body (or "body proper") is constituted by everything we typically associate with the term "body," minus the brain (DE 86). In the brain, neural "maps" are formed. These maps are patterns of neural activity that can represent both objects outside the body and the state of the body itself. According to Damasio, neural maps are the neural basis of mental images (DE 98; FWH 9, 20-21).[120] These images may be either conscious or nonconscious. Furthermore, "Nonconscious images

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[119]The material in §3.1.1-§3.1.4 is intended to provide a succinct, yet suitably comprehensive, overview of the relevant proposals that Damasio makes in his three books. The sources/page numbers cited give one or two (not necessarily all) locations in which Damasio puts forth the ideas indicated. Moreover, all of the ideas explained below are presumed to be "current," in that they would have been accepted by Damasio at the time he wrote *Looking for Spinoza*, even if he did not specifically discuss them in that book.

[120]Damasio does not make any claim regarding the "accuracy" of either neural maps or mental images. He specifically says, "I do not have any idea about how faithful neural patterns and mental images are, relative to the objects to which they refer. Moreover, whatever fidelity may be, neural patterns and the corresponding mental images are as much creations of the brain as they are products of the external reality that prompts their creation." In other words, "the images you and I see in our minds are not facsimiles of the particular object, but rather images of the interactions between each of us and an object which engaged our organisms, constructed in neural pattern form according to the organism's design" (FWH 320-321). He attributes to our similar biology the fact that we all seem to form similar images of the same object (as indicated by the similar descriptions we would give of the object). But he maintains that agreement between people's images does not imply that we see a "replica" of the object as the object actually is (LS 198-200).

are never accessible directly. Conscious images can be accessed *only in a first-person perspective* (my images, your images). Neural patterns, on the other hand, can be accessed *only in a third-person perspective*" (FWH 318). Mental images may also be either "perceptual" or "recalled." Perception, broadly construed, is the source of perceptual images, and thus perceptual images can be visual, auditory, olfactory, gustatory, or somatosensory (DE 96-98; LS 194-195).[121] Recalled images are not the result of current perception; instead, they are constructed from acquired dispositional representations. Dispositional representations are potential patterns of neural activity that, when engaged, yield (reconstructed) images of things perceived in the past and images of things not yet perceived (i.e., "imagination") (DE 97, 102).[122] Damasio later refines the concept of a perceptual image and includes under this heading two kinds of "body images": "images from special sensory probes" and "images from the flesh." Images from sensory probes are body images that result from so-to-speak outward perception. They are based on neural maps of the state of the body as the body is modified by objects outside of the body that physically interact with it. For instance, a chair within my visual field modifies light rays in certain ways, which in turn modify my retina. The result is (along with a perceptual image of the chair) a body image of my body as modified by the chair. Images from the flesh result from inward perception, in that these images are based on neural maps of the state of viscera (e.g., liver, heart, blood vessels) and of the chemical composition of the body's interior (e.g., levels of certain chemicals in the bloodstream). Damasio gives pain and nausea as examples of images from the flesh (LS 195-197, 213-215).

Damasio stresses that images, although biological in nature, are not identical with neural maps. Moreover, the way in which neural patterns give rise to or become images has not yet been explained. But this problem is not one that he seeks to address in the three books under discussion here (cf., FWH 9, 322-323; LS 198).

Damasio also clearly separates mind from brain. Neural patterns occur in the brain, which is an object. In contrast, mind is a private, first-person *process*. Specifically, mind is the flow of thoughts (or ideas), where thoughts are identified with mental images; and because images can be conscious or nonconscious, mind involves both conscious and nonconscious processes (FWH 12, 318, 337; LS 194). For Damasio, an organism has a mind if and only if the organism has "the ability to display images internally and to order those images in a process called thought" (DE 89). Damasio further

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[121]Somatosensory images are those arising from touch, muscular, temperature, pain, visceral, and vestibular senses (FWH 318).

[122]Damasio believes that memory and learned knowledge are constituted by dispositional representations, as is innate knowledge (DE 102, 104; FWH 332). In addition, representations of how the body tends to be (in contrast to what the state of the body currently is) are dispositional (DE 152).

suggests that images are the main content of our thoughts, and if something (e.g., a written word or symbol, a sound, inner speech) is not represented to us in an image, then it is not something we can know (DE 106-108).

3.1.2 Emotions and Feelings

Damasio makes a distinction between emotions and feelings. His motivation for this is that he believes there is an "expressive" part (which he calls "emotion") *and* an "experienced" part (which he calls "feeling") to what is commonly called "emotion;" and using two separate terms thereby facilitates the study of the biological foundations of these different components. But he sees both emotion and feeling as being part of a group of responses that influence the homeostatic regulation of life, with emotion having preceded feeling in the course of evolution (DE 146; LS 27-28). So to put emotion and feeling fully in perspective, Damasio's entire scheme with respect to biological regulation should first be considered.

Damasio identifies a number of basic problems that organisms continually face: "finding sources of energy; incorporating and transforming energy; maintaining a chemical balance of the interior compatible with the life process; maintaining the organism's structure by repairing its wear and tear; and fending off external agents of disease and physical injury." Damasio then defines homeostasis as "the ensemble of regulations [i.e., that address these problems] and the resulting state of regulated life" (LS 30). In Damasio's view, the most fundamental homeostatic responses are, from simplest to more complex, metabolic processes (e.g., digestive processes), basic reflexes such as the startle response, and immune system responses. Pain and pleasure behaviors (e.g., grabbing a wounded limb and facial expressions of confidence, respectively) are at the next level of sophistication, and above this are drives and motivations (e.g., hunger, curiosity). Beyond these are emotions-proper and then feelings (LS 31-34). Damasio thinks that "all of these reactions are aimed, in one way or another, directly or indirectly, at regulating the life process and promoting survival," in that they allow an organism to react to changes in its environment, both internal and external, that have the potential to affect the life or well-being of the organism (LS 35).[123]

When Damasio defines emotions (and feelings of emotions), he is motivated in part by observations he had made of certain brain-damaged subjects with impaired emotion. Specifically, the brain areas that were damaged in those patients (e.g., the amygdala, the ventromedial prefrontal cortices) are involved in receiving and/or processing signals that relate to body state (cf., DE 61-62, 70, 180-181).[124] Now an emotion is, according to Damasio, a col-

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[123]Damasio notes, however, that not *every* instance of an emotion furthers an organism's survival or well-being (LS 39-40).

[124]These patients also showed impaired decision-making, which influenced Damasio's

lection of changes in body state and brain state (e.g., change in skin color, change in heart rate; change in brain function that leads to change in rate of image processing) that are a response to certain mental images; that is, an emotion is an overall change in body state and brain state produced due to the particular content of certain thoughts (DE 139; FWH 281-282).[125] Damasio later sharpens this definition slightly in the following hypothesis (quoted from LS 53):[126]

> 1. An emotion-proper, such as happiness, sadness, embarrassment, or sympathy, is a complex collection of chemical and neural responses forming a distinctive pattern.[127]

> 2. The responses are produced by the normal brain when it detects an emotionally competent stimulus (an ECS), the object or event whose presence, actual or in mental recall, triggers the emotion.[128] The responses are automatic.

> 3. The brain is prepared by evolution to respond to certain ECSs with specific repertoires of action. However, the list of ECSs is not confined to those prescribed by evolution. It includes many others learned in a lifetime of experience.

> 4. The immediate result of these responses is a temporary change in the state of the body proper, and in the state of the brain structures that map the body and support thinking.

> 5. The ultimate result of the responses, directly or indirectly, is the placement of the organism in circumstances conducive to survival and well-being.

Damasio takes emotions to be "public." They are outwardly directed and can in principle be observed by others. Further, an organism engaging an emotion need not be conscious of the emotion taking place (FWH 36-37; LS 28). Damasio suggests, in fact, that creatures like the marine snail *Aplysia Californica* (which has only a rudimentary nervous system) exhibit

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development of his somatic-marker hypothesis, discussed in §3.1.3 below.

[125] Damasio remarks that the brain causes these bodily changes either via neural signals (i.e., along nerve pathways) or via the action of chemicals released into the bloodstream. Changes in brain function result from the secretion and consequent action of chemicals in the brain (DE 87-88; FWH 67-68).

[126] A similar hypothesis appears in FWH 51-52.

[127] Damasio apparently assumes that these "distinctive patterns" are what differentiate *emotions* from other collections of responses.

[128] Damasio supposes that, minimally, the organism's "detection" of the ECS is necessary in order to trigger the emotion. Presumably, this means that it is necessary for the ECS to be represented in either a neural map or a mental image in order for the emotion to be elicited. Regardless, it is clear that the ECSs may either remain outside of the organism's consciousness or may (if they are represented in images) be consciously perceived. See, for example: FWH 47-48, 283; LS 50-51, 55, 57-58, 64-65.

the emotion fear: If touched in its gill, the snail curls up, and its heart rate and blood pressure increase. Although the snails react in this way automatically or reflexively, Damasio declines to label the behavior as just "basic reflexes," since (unlike a reflex) the response consists of multiple, related reactions (LS 42).

Damasio sub-divides emotions into three broad categories: background emotions, primary emotions, and social emotions.[129] Of these, background emotions are the most basic, and social emotions are the most complex (i.e., social emotions involve responses also found in primary and background emotions). Damasio proposes that background emotions arise as combinations of more basic regulatory reactions, such as drives, pain and pleasure behaviors, and reflexes. Thus, these emotions pervade our existence and are the source of our overall "state of being."[130] Damasio suggests that background emotions differ from moods, in that moods are emotions exhibited more or less consistently over long periods of time. Examples of background emotions are energy, enthusiasm, malaise, excitement, and edginess. Primary emotions are the emotions that are often called the "basic emotions": happiness, sadness, fear, anger, surprise, and disgust (LS 43-45). Damasio notes, "These emotions are easily identifiable in human beings across several cultures and in non-human species as well. The circumstances that cause the emotions and patterns of behavior that define the emotions also are quite consistent across cultures and species" (LS 44-45).[131] Damasio's listing of social emotions includes sympathy, shame, guilt, jealously, and admiration, and he maintains that animals such as chimpanzees, monkeys, elephants, and dogs manifest certain social emotions (LS 45-46).

In contrast to emotions, feelings are inwardly directed and "private" (FWH 36; LS 28). Feelings are not body states. Rather, they are mental images. In particular, feelings are, most simply, perceptual images of an organism's body state; and the neural bases of feelings are the neural maps of the body that underlie these images. Feelings may thus arise from emotions or from other, more basic, regulatory processes. Feelings always involve body state images, but feelings may also include images of the organism's style of cognitive processing. In the case of an emotion (say, sadness), for example, certain chemicals might be released in the brain, causing visual images to be produced at a slower rate (as is characteristic of sadness). The

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[129]At an earlier stage of Damasio's thinking, social emotions are alternately called "secondary emotions" (e.g., FWH 51). The notion of secondary emotions also appears in *Descartes' Error* (e.g., p. 131). But ultimately, Damasio seems to have replaced both the term and the concept associated with it, in favor of the classification scheme given in *Looking for Spinoza*.

[130]Damasio takes it to be an open empirical question whether there are any regulatory reactions that are *not* part of background emotions (LS 44).

[131]Some authors include other emotions, such as distress and contempt, within the set of "basic" emotions, however; see, for instance, Frijda (1986) for further discussion of this point (e.g., pp. 72-75, 85-90).

feeling of the emotion then may involve not just images of the body but also the perception of the accompanying mode of thinking. Feelings may include other images as well, such as images of the ECS that elicited the present body state or images that have "themes consonant with the emotion." Feelings of emotion include feelings of sadness and happiness (which arise from the relevant primary emotions) and feelings of guilt and admiration (which arise from the relevant social emotions). They also include background feelings, such as energy, dragging, excitement, and harmony (FWH 281-282, 286; LS 85, 88-89).

An important point to add is that Damasio claims that feelings need not be images of an organism's *actual* body state. Feelings sometimes arise due to what Damasio calls "as if" body maps produced in the brain. These neural maps are "false" representations of the body, rather than representations of the actual state of the body. Nevertheless, the images that result from "as if" maps are feelings, and in virtue of them, we feel (to a large degree, if not exactly) as if our body were in the given state. Such a mechanism is beneficial to the organism because it can bring an organism's feelings and other thoughts (either those thoughts that precipitated the feeling or those that followed it) closer temporally, since it takes longer for the body to actually change and be mapped than for an "as if" map to be produced (DE 155-56; FWH 281; LS 118-119).

Because feelings are images, they may be conscious or nonconscious. Hence, having a feeling is separate from consciously having (i.e., experiencing or feeling) a feeling. Damasio suspects, however, that adult humans (at the current stage of human evolution) are typically, perhaps always, conscious of feelings (FWH 37, 43). Damasio also believes that, if their brains are sufficiently complex, non-human animals are able to experience feelings. For like humans, these animals (1) have brains that can cause a change in body state, (2) can form neural representations of their body states, (3) can form images based on these representations, and (4) can become aware, through consciousness, of (the content of) these images (LS 109-110). In Damasio's opinion, consciousness of feelings enables the organism to better maintain homeostatic balance in complex environments, since it allows the organism to reason with respect to the mental images that are feelings instead of, or in addition to, simply engaging an automatic reaction in response to the neural maps from which feelings emerge (LS 175-177).

3.1.3 Somatic-Marker Hypothesis

The somatic-marker hypothesis is a hypothesis Damasio offers concerning the role of emotion in decision-making. Before this proposal is outlined, however, the way in which Damasio uses the labels "good" and "bad" should be explained. Damasio believes that qualities of goodness and badness can be ascribed to a situation or object based on whether it (the situation or

object) is helpful or harmful to an organism's survival or well-being. So for example, in normal cases, being hungry is bad, and the action of eating when hungry is advantageous in that it leads to a good result (namely, the body being more homeostatically balanced). Damasio emphasizes though that this does not mean that we, or other organisms, always *decide* to produce reactions that lead to good results. For instance, many of the homeostatic regulatory processes occurring in our bodies that lead to good results are in fact outside of our conscious control. An example Damasio gives is the maintenance of a certain pH level in our body. Damasio further suggests that some reactions we produce in response to a good or bad situation may not be felt by us (DE 116-117; LS 49-51).

A "somatic marker" is an emotion/feeling that is associated with (i.e., marks) a certain image in the mind.[132] Damasio's somatic-marker hypothesis says that somatic markers influence our decision-making process in the following way: As we decide what course of action to take, we process images of possible outcomes of different actions. These outcomes can be viewed as good or bad, in the sense given above, and "positive" somatic markers will be associated with images of good outcomes, while "negative" somatic markers will be associated with images of bad outcomes. In other words, pleasant emotions/feelings will be associated with images of good results, whereas unpleasant emotions/feelings will be associated with images of bad results.[133]

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[132]It is unclear as to whether Damasio takes a somatic marker to be an emotion or a feeling of an emotion. In discussing the somatic-marker hypothesis, he specifically says, for example, "*somatic markers are a special instance of feelings generated from secondary* [i.e., not completely innate] *emotions*" (DE 174); he also explicitly refers to our experience of a "gut feeling" (DE 173). But he says too that "...a somatic state, positive or negative, caused by the appearance of a given representation, operates not only as a *marker for the value of what is represented, but also as a booster for continued working memory and attention*" (DE 197-198), where presumably a somatic state is a body state (e.g., an emotion), not a mental image (e.g., a feeling) of a body state. The situation is complicated further in that he also uses the terms "emotions and feelings," "emotional-feeling response," "emotions/feelings," and "emotions and their ensuing feelings" in discussion of the somatic-marker hypothesis, and he refers to somatic markers as "emotional signals" (LS 140-152). Moreover, only in his two most recent books, *The Feeling of What Happens* and *Looking for Spinoza*, is the explicit distinction made between feelings that are conscious and those that are not; hence, it is unclear whether the nonconscious somatic markers Damasio mentions (e.g., DE 184-185; LS 148) are emotions that we do not feel at all (i.e., body states that may or may not be neurally mapped, and which are not the content of any mental images), or are what he later calls "nonconscious feelings." His empirical studies (see, for example, comments in FWH 41-42 and §3.2 below) do not seem to help resolve the matter. For if they show impaired reasoning to be correlated with lack of emotion, then they have (by default, based on Damasio's definition of "feeling") also shown impaired reasoning to be correlated with lack of feeling of emotion. Based on the texts, it also seems plausible that in Damasio's thought, some somatic markers are emotions and some are feelings of emotions. In what follows, this latter perspective is adopted, and the term "emotion/feeling" is used to encompass both emotions and feelings of emotions.

[133]Damasio believes that the "positive" or "negative" character of an emotion/feeling is

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Based on the characteristics of the accompanying emotion/feeling, we may thus be prompted during our decision-making process to attend more to one action (one accompanied by a positive emotion/feeling, for instance) than another. Or we might immediately stop considering an option because very negative emotions/feelings (e.g., a sinking feeling in the pit of one's stomach) mark a possible outcome of that option, thereby reducing the number of options to consider. Or we might consider an option with more scrutiny because attention has been drawn to a bad possible outcome of that option. In these ways, somatic markers can facilitate decision-making (although, Damasio maintains, they are unlikely to often be the sole basis of a decision) and can increase our chances of choosing a beneficial response (DE 170-175; LS 147-149).

Damasio suggests that somatic markers can arise from "as if" body maps as well as from maps of how the body actually is. Also, somatic markers can be conscious or nonconscious. In the latter case, the outcome is somatically marked, and changes in attention, reasoning, etc. may subsequently result, but the marker is not known to us as a feeling (DE 184-185; LS 148-149).

Damasio proposes that some somatic markers act as such due to innate dispositions (e.g., innate dispositions regarding whether a given stimulus is good or bad with respect to survival). Other somatic markers develop due to experiences we have wherein a certain type of stimulus is paired with a certain type (positive or negative) of somatic state. This latter class of somatic markers arises from a combination of innate preferences and our exposure to social conventions (DE 177-180; LS 145-147). Damasio says that, through this type of learning, "different options for action and different future outcomes become associated with different emotions/feelings. By virtue of these associations, when a situation that fits the profile of a certain category is revisited in our experience, we rapidly and automatically deploy the appropriate emotions" (LS 146-147). These emotions (or perhaps the feelings of them) thus can act as somatic markers.

3.1.4   Relations to James' Theory of Emotion

Damasio's characterization of emotion is similar to William James' theory of emotion, but also differs from it in significant ways. According to James (1950), "Our natural way of thinking about these coarser emotions [e.g., grief, fear, rage, love] is that the mental perception of some fact excites the mental affection called the emotion, and that this latter state of mind gives rise to the bodily expression. My theory, on the contrary, 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*" (vol. 2, p. 449). He also states that "... *objects do excite bodily changes* by a preorganized

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tied to the state the body is in relative to its ideal homeostatic point and/or to the ease or efficiency with which the "life process" flows (LS 130-131).

mechanism ...," and even though there are myriad body changes associated with emotions, "... *every one of the bodily changes, whatsoever it be, is* FELT, *acutely or obscurely, the moment it occurs*" (vol. 2, pp. 450-451).

It seems that, in these claims, James calls "emotion" what Damasio calls "(conscious) feeling of an emotion." This terminology aside, James and Damasio both agree on the importance of body states in emotion and see the relevant body changes as directly due to the perception/detection of an "exciting fact" or "emotionally competent stimulus." But Damasio remarks that his proposals differ from James' in the following ways: First, James considers all emotions to be innately programmed responses to certain stimuli. Damasio, on the other hand, suggests that some emotions are evoked only after an "evaluative, voluntary, nonautomatic mental process." In particular, through a person's life experiences, many diverse stimuli become associated with the stimuli that innately cause emotions. The evaluation process acts to filter the "learned" stimuli, which therefore sometimes do, and sometimes do not, elicit emotions (DE 130-131; see also LS 52). Damasio thinks that some emotional reactions are also non-innate in the sense that exposure to a certain experience is needed before the (otherwise innate) emotional response will ever be triggered (LS 47). Second, James believes emotions always involve actual body states, whereas Damasio also allows the "as if" mechanism for generating feelings (DE 155; LS 112). Third, for Damasio, but not James, emotions can include (along with the change in body state) a change in neural processing in the brain (FWH 288).

3.2 Damasio's Empirical Investigations

Damasio's suggestions and hypotheses can be questioned from an empirical perspective. For example, is there any experimental evidence to indicate that emotion *should be* differentiated from the conscious feeling of that emotion? What observations or experimental findings (if any) stand in support of the somatic-marker hypothesis? Some of Damasio's answers to these questions are outlined in this section.[134]

Damasio first developed the somatic-marker hypothesis based on observations of a patient whose decision-making ability had become impaired within the social/personal realm following an operation that removed a brain tumor and additionally damaged tissue in the patient's prefrontal cortices, primarily in the ventromedial sector. Although this patient had been successful in the business field, after surgery he no longer completed his job tasks and was fired. He was fired from subsequent jobs as well. He then entered into several business ventures, one of which resulted in bankruptcy and the loss of his life's savings. His marriage ended, and a second marriage that

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[134]Only overviews of main results are presented here. Damasio discusses experimental parameters, follow-up experiments, possible conclusions, etc. more fully (see cited references and page numbers).

quickly resulted in divorce followed. Neuropsychological tests showed that this patient had no linguistic or perceptual impairment. His past, short-term, and working memory were intact, as were his attention, arithmetic skills, and ability to learn new information. In addition, he measured in the superior range on an IQ test and tested normally on a personality test (DE 34-43). Psychological exams also indicated that his ethical judgments were in line with standard conventions; furthermore, he could generate options for action and predict consequences of actions with respect to the social domain (DE 46-49). What the patient did show, according to his own reports and those of his relatives, was a marked decrease (relative to his condition before the surgery) in emotional reaction, and "he could sense how topics that once had evoked a strong emotion no longer caused any reaction, positive or negative" (DE 45). Thus, Damasio conjectured that lack of emotion might be associated with impaired decision-making (DE 50-51).

Damasio next studied twelve other patients with prefrontal damage predominately in the ventromedial sector. All of these patients were similar to the first. Emotion and feeling were flat, and decision-making problems existed, even though basic cognitive abilities (e.g., attention, memory) were intact (DE 53-54). Based on his own observations and those made by other doctors and scientists, Damasio also concluded that defective decision-making ability and flat emotion/feeling co-occur with respect to damage to other brain sites. For example, these same symptoms are seen when the dorsal and/or lateral sectors of the prefrontal region are damaged as much as the ventromedial sector, or when certain (other) parts of the right cerebral hemisphere are damaged. The difference is that these other patients have, in addition, basic cognitive deficiencies (e.g., psychological tests show defects in working memory with respect to words and numbers) or motor and sensory problems, respectively (DE 61-62, 65-67).[135]

Damasio and his colleagues also conducted experiments aimed at testing the somatic-marker hypothesis. For instance: In a series of "gambling experiments," subjects were presented with four decks of cards (labeled A, B, C, and D) and were given a loan of 2000 "dollars." The subjects were told to turn over cards in any of the decks until the experimenter said to stop. They were told too that all cards would pay them "money" and that some cards would in addition make them pay a penalty. They were informed that the objective was to lose as little currency as possible and to try to gain as much more currency as possible. Unbeknownst to the subjects, cards in the A and B decks all yielded a high pay-out. But the cards in these decks that required a payment required a very high payment. Cards in the C and D decks payed less money, but the payments required were lower as well. Over-

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[135]Damasio also conducted experiments designed to *test* for emotional response. The results indicated that subjects with frontal lobe damage lack emotional response (specifically, they do not generate a skin conductance response) when viewing pictures (e.g., of a murder) that elicit such a response in subjects without frontal lobe damage (DE 205-212).

all, selecting from the A and B decks will cause players to lose more money than they win; the reverse is true of the C and D decks. The researchers found that all subjects initially sampled all four decks and then showed a brief preference for decks A and B. But shortly after this "sampling" period, subjects without damage to the prefrontal area (but in some cases with damage to other areas of the brain) turned over mostly C and D cards. In contrast, subjects with frontal damage continued to turn over mostly A and B cards. Moreover, Damasio's group measured skin conductance responses during the experiments.[136] They found that all subjects generated a skin conductance response after they turned over each card. In addition, over the course of play, subjects without frontal damage began to generate skin conductance responses (and of increasing magnitude as the game went on) *before* turning over an A or B card. Subjects with frontal damage did not generate these responses. Damasio sees these results as consistent with his somatic-marker hypothesis. Namely, impaired decision-making (such as is exhibited by the subjects with prefrontal damage) is accompanied by lack of relevant emotional cues (DE 208-209, 212-222).

As he does for the somatic-marker hypothesis, Damasio also offers evidence for his distinction between emotion and feeling. Damasio mentions in his books a number of cases, some reported by other investigators and some resulting from his own research, that seem to support this distinction. For example: As part of a new treatment for her Parkinson's disease, a woman had low-level electric current applied to various areas of her brain stem that control movements. Upon the activation of one particular contact point, the woman suddenly cast her eyes downward, leaned to one side in her chair, and then began to cry. A short time later, she began to say how intensely sad she felt. The doctors treating her suspected that this sudden change in behavior was due to the current being applied and shut it off.[137] Approximately a minute and a half later, the woman's behavior and attitude reverted back to what they were like before the episode. She stopped crying, and she smiled. She was, however, puzzled as to why she had just felt as she did. Damasio suggests that in this case, the electric current played the role that an ECS normally plays. It induced an emotion that was then *followed by* emotion-related thoughts and the experience of feeling the emotion (LS 65-73).

Damasio similarly tells of a patient who was being treated for epileptic seizures. Prior to surgery, certain of the patient's brain regions were electrically stimulated. When current passed through a particular region, the patient began laughing heartily, with the laughter *followed by* feelings

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[136]Skin conductance responses are assumed to be a typical part of an emotional response. They are generated, for example, when subjects without brain damage view pictures containing strong emotional content.

[137]Nineteen other patients underwent similar treatments, but none of these patients ever reacted in this manner.

of "merriment." In this case, the patient attributed the laughter to (i.e., identified the ECS as) whatever she happened to be concentrating on when the current was applied (e.g., a photo of a horse that the doctors were showing her, the doctors themselves). Again, Damasio feels that this shows a distinction between the emotion and the conscious feeling of that emotion (LS 74-77).

Damasio also reports upon an experiment conducted in his own lab that supports his idea that feelings involve the perception of body states. Specifically, "the hypothesis that guided the work stated that when feelings occur there is a significant engagement of the areas of the brain that receive signals from varied parts of the body and thus map the ongoing state of the organism" (LS 96). Subjects were instructed to evoke a certain emotion (either happiness, sadness, fear, or anger) within themselves. They then were to signal when they began to feel the emotion, and positron-emission tomography (PET) scans recorded their brain activity after that point.[138] The patterns of brain activation and deactivation appearing in these scans implied that the neural mappings of body states had indeed been modified during the process of feeling an emotion, with patterns differing between different emotions. In addition, skin conductance responses were measured throughout the experiment. These readings showed that skin conductance responses (indicative of emotion) occurred *before* the subjects signaled the start of feeling the emotion. This further supports the hypothesis that emotions and feelings are distinct, with feelings occurring after emotions (LS 96-101).

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[138]PET scans measure blood flow in regions of the brain. The blood flow in a particular region is correlated with the metabolism of neurons in that area, which is likewise correlated with neuron activity in the area (LS 97).

4 Wittgenstein and Damasio Juxtaposed

4.1 What is Emotion?

Wittgenstein and Damasio have different goals with respect to understanding emotion, and the approaches that they take to studying emotion are dissimilar as well. As §1.3 and §3 above show, Damasio aims to explain how emotions and feelings relate to neural systems. This involves, first of all, making a distinction between emotions and feelings. Damasio does note, "It is true that the common usage of the word emotion tends to encompass the notion of feeling" (LS 27). But he believes that separating the two concepts allows for the biology that corresponds to each of them to be more successfully studied.[139] In keeping with this, Damasio defines emotion as a collection of changes in body state and brain state produced in response to certain mental images (i.e., to certain thoughts).[140] A feeling is itself a mental image, namely, an image of the organism's body state. A feeling may also include images of the organism's mode of thinking, images that triggered the body state, or other images related to the emotion. In addition to empirically researching how emotions and feelings are related to various regions of the brain and to brain activity, Damasio forms hypotheses regarding the *purpose* of emotions and feelings. Specifically, he indicates that emotions and feelings help support the well-being of the organism having them, and his somatic-marker hypothesis postulates that the impaired decision-making ability of some brain-damaged individuals is a consequence of their impaired ability to have emotions/feelings.

Wittgenstein's investigations, on the other hand, have a radically different focus. Wittgenstein seeks to describe the grammar of words like "emotion," "fear," and "love;" that is, he wants to study the concepts of emotion, fear, and love as they appear in our language games. This includes analyzing conceptually how emotion, fear, and love, for example, relate to one another; how they relate to behaviors, sensations, and thoughts; and whether they have places, objects, or contents. Wittgenstein's work is covered in §1.2 and §2 above, and it is informative to compare some of Wittgenstein's results to

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[139]Damasio mentions this deviation from "common" or "orthodox" usage, and his reason for it, elsewhere too (cf., DE 146).

[140]It is important to note the following: In *Looking for Spinoza*, Damasio alters his earlier definition of emotion and says instead that an emotion is a "complex collection of neural and chemical responses forming a distinctive pattern" that occurs when an ECS is detected; then the changes in body state and brain state are the "immediate results" of these responses (LS 53). When Damasio *discusses* emotion throughout *Looking for Spinoza*, however, he seems to revert back to his earlier definition of emotion as body and brain state changes. Moreover, it seems that chemical and neural responses could also be considered body and brain state changes. Hence, the text below assumes that reactions like increased heart rate, change in facial expression, and change in amount of perspiration would be parts of some emotions, and some emotions may also include (e.g.) changes in hormone levels.

those of Damasio.

To begin, it was pointed out in §1.2 that Wittgenstein, in accordance with his view of what philosophy can and cannot do, eschews asking the question "What is emotion?" But it was moreover suggested in §2.4.4 that, according to his analysis, "What is emotion?" does not even make sense as a request for a definition of what emotion is. If this suggestion is accepted, then Damasio's initial premise that emotion is ... and feeling is ... must be re-evaluated. In particular, if we assume that Damasio intends to define our ordinary concept of emotion, then we must conclude that Damasio's definitions, *whatever* they might be, do not make sense.[141]

Yet since Damasio acknowledges that (at least in separating emotions from feelings of emotions) he is deviating from the common usage of the word "emotion," perhaps the most important question to ask is precisely what role the ordinary concept of emotion/feeling does play in his work. In other words, assuming Damasio's definitions establish a new use for the words "emotion" and/or "feeling," it should be asked: (1) how do his claims regarding emotion and feeling compare to claims Wittgenstein makes (i.e., how do Damasio's concepts and the ordinary concepts compare with respect to, for example, mental images and ascription of emotion, which figure prominently in Wittgenstein's analysis), (2) are there aspects of Damasio's research that nevertheless depend on or presuppose our ordinary concept of emotion, and (3) what ways does Damasio use his definitions in order to study emotion that do not have a counterpart in Wittgenstein's investigations. Point (1) is treated in §4.2 and §4.3 below. Point (2) is treated in §4.3 and §4.4, and point (3) is treated in §4.4.

4.2   Mental Images

A vital component of Damasio's hypotheses regarding emotions and feelings is his notion of a *mental image*. Briefly, as discussed in §3 above: Damasio takes neural patterns to be the biological underpinnings of mental images, which can be either conscious or nonconscious. He further classifies mental images as either perceptual or recalled. Perceptual images are non-body-related images from perception, body images from sensory probes, and body images from the flesh. Recalled images are images of things perceived in the past and of things imagined. According to Damasio, thoughts are

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[141]As discussed in §2.4.4, there are specific arguments too that, conceptually, emotions and feelings are neither changes in body state and brain function nor mental images. Also, Hacker (2004) and Chapter 7 of *Philosophical Foundations of Neuroscience* bring a host of charges, based on conceptual considerations, against Damasio's separation of emotion and feeling, against the content of Damasio's definitions, and against Damasio's somatic-marker hypothesis. (In saying that Damasio's results are conceptually in error, Bennett and Hacker must, as §1.4 above indicates, suppose that Damasio intends to study emotion in its ordinary sense.)

mental images and so are feelings, and mental images cause emotions.[142]
Clearly, Damasio's use of "images" differs from the use that is described
by Wittgenstein (see §2.2 above). But an approximation might be to view
the images, impressions, and sensations Wittgenstein investigates as, col-
lectively, Damasio's (conscious) images. In particular, impressions (in the
sense Wittgenstein explores) might be comparable to non-body-related per-
ceptual images, sensations might be comparable to perceptual images from
the flesh (and perhaps perceptual images from sensory probes), and images
might be comparable to recalled images. It may be useful to observe these
parallels, even though the concepts probably do not match exactly.[143] It
would be interesting to see, for example, whether Damasio's concepts have
various conceptual characteristics that Wittgenstein identifies, such as gen-
uine duration, course, degree, and being a character of thought.

4.3   Ascribing Emotions and Feelings

Wittgenstein's analysis of ascription of emotion is detailed in §2.4.3 above.
But to quickly recount some of those results: I ascribe emotion to some-
one else (third person ascription) based on my observation of that person's
behavior, and specifically, the phenomena of emotion (e.g., characteristic
expressions of emotion in appropriate contexts) that he exhibits. This as-
cription is direct, in that emotion is not inferred from the presence of the
phenomena. First person uses of emotion terms include utterances that
replace primitive reactions, and these uses are not based on observations
of any kind. It is not immediately clear how Wittgenstein analyzes uses
that do not replace primitive reactions.[144] Possibilities include that these
are justified by the speaker's competency in playing the language game, or
that no evidence justifies the utterance. Emotion words can be ascribed to
animals if, and only if, those animals exhibit phenomena of emotion. An-
imals are thus limited too in the emotions they can have by their lack of
participation in human language games, since some emotions conceptually
require the use of linguistic utterances. In addition, because use of emotion
words is fundamentally tied to the human language game, even the emotion
concepts that do apply to animals are kinds of secondary concepts. That is,

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[142]Bennett and Hacker take issue with Damasio's use of the word "image." For example,
they argue that contrary to what Damasio claims, neither thinking nor perceiving must
involve images. Hence, somatic changes (which Damasio equates with emotions) that may
be caused by thoughts or perceptions need not be caused by mental images (PFN 214).
Bennett and Hacker's arguments will not be specifically discussed here, however.

[143]For instance, Wittgenstein would likely deny that the ordinary concept of a sensation
includes having a neural map as a biological basis. Also, Damasio seems inclined to
regard images as mental "entities" or "objects," whereas Wittgenstein's analysis would
reject that.

[144]"I'm happier now than I have ever been" is an example of an utterance that does not
replace a primitive reaction.

the emotion concepts apply if the animal behavior is similar to the relevant human behavior; but it is always the *human* behavior that serves as the standard.

Wittgenstein's investigation seeks to give a description of how ascription of emotion takes place in the language game. Wittgenstein's analysis of ascription is part of his conceptual analysis of emotion; and other aspects of his analysis of emotion, such as that some emotions always involve linguistic utterances, also affect his account of ascription. For Damasio, questions of ascription (e.g., who can have emotions/feelings, on what basis emotions/feelings are ascribed) seem to be handled in a different way. Specifically, Damasio's definitions of emotions and feelings seem to determine the answers to many of these questions. Correspondingly, the answers (or the reasoning for them) in some cases diverge from the answers Wittgenstein's analysis gives.

With respect to first person uses of emotion words, Damasio's definitions do not exclude uses that are pointed out by Wittgenstein. For instance, "I'm afraid" or "I feel afraid" could be used to replace primitive fear reactions, regardless of how Damasio defines fear or the feeling of fear. But Damasio's definitions imply that another possible use of "I'm afraid" is to indicate that one's body and brain exhibit a certain pattern, namely, the emotion of fear. Likewise, "I feel afraid" could indicate that one has certain mental images. This does conflict with Wittgenstein's analysis of emotion.[145] Moreover, these types of uses of "I'm afraid" and "I feel afraid" must, it seems, be justified by the subject's awareness of her own body states and cognitive functioning.[146] That is, it seems like this kind of statement requires *some* justification; and if I had no awareness of my body states or cognitive functioning, then we would judge that I had no basis for asserting "I'm afraid" or "I feel afraid."

For third person ascription of emotion, if emotion is a pattern of changes in body state and brain function, then ascription presumably must be based on observations of these changes. Further, from this it would follow that we do not *infer* that someone has an emotion, since the changes are the emotion, and we directly observe the changes.[147] Yet Damasio's definition of emotion might also allow somewhat different conclusions to be reached. In particular, a certain emotion is a certain pattern of changes (e.g., in

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[145]See §2.4.4 above.

[146]This awareness, however, would not necessarily need to derive from *observation*, nor would it necessarily need to be conscious. Also, even if I have no "direct" awareness of my body or brain changes, it might also be acceptable for me to use "I'm afraid" in this way if someone else has reported to me that my body and/or brain responses are those of fear.

[147]If we see all the changes that constitute the emotion, then we also see the emotion. (One caveat may be that we, conceptually, cannot *see* changes in brain activity, for example, but instead we *measure* or *observe* them.) For Wittgenstein, in contrast, we see emotion because we see expressions of emotion (cf., §2.4.3 above).

brain activity, in amount of perspiration, in facial color, in blood pressure or heart rate, and/or in body posture). But while we do not in fact typically observe *all* the components of an emotion,[148] we nevertheless do say that someone has the emotion. This indicates that, on Damasio's account, either ascription must be based on observation of some sub-set of the changes that constitute the emotion, or we must assume the existence of additional unobserved changes because of the existence of the observed changes.[149] In the latter case at least, it seems appropriate to claim that we are inferring the existence of emotion (e.g., my heart pounds when I have the observed patterns he now has, so his heart is likely pounding now).

Third person ascription of feelings is, according to Damasio's definition, never directly based on observations, because we cannot observe someone else's mental images.[150] But it is in line with Damasio's definition to suggest that we assume or infer that someone feels angry if we observe that he is angry (that is, he has the emotion of anger). This assumption or inference might require knowledge regarding the biology of the subject of the emotion, however. For instance, it might be acceptable for me to assume or infer that a *person* also *feels* afraid when he exhibits the emotion of fear. But without knowing whether a dog or a bird has the physiology necessary to have mental images, I would not be able to make such an assumption or inference for these animals.[151]

This outcome regarding animals is tied to the result that, using Damasio's definitions, some animals empirically cannot have feelings or certain emotions (e.g., any emotions that include biological reactions that the animals cannot in fact have). Specifically, Damasio enumerates four requirements that an organism must meet in order to have feelings: the organism must have a nervous system, the nervous system must be able to map body structures and states and generate mental images, the organism must be

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[148]This depends on exactly which patterns are taken to be a certain emotion, however. If a certain emotion is only, say, facial expression changes and body posture changes, then we probably do usually observe the complete emotion. But if the emotion includes, say, heart rate changes, then we do not.

[149]In the event that Damasio really does want to define emotions as *only* chemical and neural responses, then all emotions would be inferred by ordinary speakers, based on the presence of "immediate results" (e.g., a visible change in body state) of these responses. Only scientists measuring chemical and neural responses in someone would be able to ascribe emotion directly.

[150]Thus, according to Damasio, we do not see others' feelings.

[151]Damasio's own comments support this conclusion, for he says, "To the best of our knowledge, most of the living creatures equipped to emote for the sake of their lives have no more brain equipment to feel those emotions than they do to think of having such emotions in the first place. They detect the presence of certain stimuli in the environment and respond to them with an emotion. ...Most living creatures act. They probably do not feel like we do, let alone think like we do. This is a presumption, of course, but it is justified by our idea of what it takes to feel as explained in [Chapter 3 of *Looking for Spinoza*]" (LS 50-51).

conscious, and the organism's brain must also *create* the (emotional) body states that evoke feelings.[152] It is Damasio's opinion that "most animals with complex brains satisfy these conditions, in all probability" (LS 110). But regardless of whether his opinion is correct, these biological requirements contrast with Wittgenstein's argument that having/feeling emotions is dependent on participating in language games.

In principle, Damasio's definitions also put animals' emotions and feelings more on a par with human emotions and feelings than Wittgenstein's analysis does. For strictly speaking, nothing in Damasio's definitions forces animal emotions/feelings to be *secondary* concepts to human emotions or feelings. An animal's emotions could be identified independently of any human emotion patterns. That is, we would not need to decree, "Fear in humans is *this* pattern, so fear in monkeys must be an analogous pattern." Nevertheless, Damasio does seem to adopt the strategy of identifying emotions in animals based on the changes that constitute emotions in humans. In discussing reactions of the *Aplysia Californica* snail, for instance, he says, "The snail produces a number of concerted reactions that, transposed to you or me, probably would be recognized as important components of the emotion fear. Emotion? Yes. Feeling? Probably not" (LS 42). He also describes emotions in flies by referring to certain actions in certain contexts that would count as phenomena of emotion in humans if humans displayed those types of behaviors: "Think of a tiny fly–a small creature with a small nervous system but no spine. You can make the fly quite angry if you swat at it repeatedly and unsuccessfully. It will buzz around you in daredevil supersonic dives and avoid the fatal swat. But you can also make the fly happy if you feed it sugar. You can see how its movements slow down and round themselves in response to comfort food" (LS 41). Damasio suggests too that social emotions occur in animals other than humans. As evidence, he comments, "The examples abound–the proud ambulations of a dominant monkey, the literally regal deportment of a dominant great ape or wolf that commands the respect of the group; the humiliated behavior of the animal that does not dominate and must yield space and precedence at mealtimes. . . " (LS 46). These passages indicate that human fear, anger, happiness, pride, and humiliation (and more specifically, human phenomena of emotion) are the starting points for identifying these emotions in other organisms. Damasio's account with respect to animals therefore in actuality aligns much closer to Wittgenstein's analysis.

4.4 Emotions and Feelings in Experimental Contexts

The question, from §4.3, of how emotions are identified in non-human animals also brings to the surface a more fundamental question: How does

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[152]These criteria are covered in §3.1.2 above as well.

Damasio identify human emotions themselves? In other words, how does Damasio determine which pattern of changes is sadness and which pattern of changes is happiness? As in the case of animals, the patterns of human emotions may be identified, at least in part, based on the ordinary phenomena of emotion that Wittgenstein discusses. This seems to apply, for example, when Damasio talks about "reading" someone else's background emotions by observing facial expressions, posture and movement of the body, and prosody of speech (LS 43). It also seems to apply when Damasio cites a work of Charles Darwin from 1872 as providing evidence that primary (i.e., basic) emotions are "easily identifiable in human beings across several cultures and in non-human species as well" (LS 44), and when he mentions that (the social emotion) contempt involves the same facial expressions as (the primary emotion) disgust (LS 45). This task cannot rely just on the type of phenomena of emotion that Wittgenstein analyzes, however. As Damasio says, "In the context of [*Looking for Spinoza*] then, emotions are actions or movements, many of them public, visible to others as they occur in the face, in the voice, in specific behaviors. To be sure, some components of the emotion are not visible to the naked eye but can be made "visible" with current scientific probes such as hormonal assays and electrophysiological wave patterns" (LS 28). But the physiological phenomena that are detected through these latter scientific probes surely are not phenomena that Wittgenstein would analyze as being characteristic expressions (or phenomena) of emotions. So then the question returns as to how we identify what type of brain activity, for instance, is part of the pattern that constitutes a certain emotion. Moreover, this issue is important too even if a researcher only wants to determine what brain activity is correlated (rather than identified) with a certain emotion.

This question may look like a strictly empirical one. For example, if subjects who were having/feeling a particular emotion (say, sadness) were monitored using the contemporary scientific probes, then the measured physiological responses, as averaged across the sample of subjects, might be included as part of the profile or pattern of sadness. But answering the question in this way depends on making an important assumption: The researcher needs to be reasonably certain that the subject actually *is* having/feeling the particular emotion being studied. So if a subject (without brain damage) is presented with an ECS that should evoke sadness, then the researcher might reasonably assume that the subject is/feels sad. But this depends in turn on knowing that the ECS *should* evoke sadness. In concrete terms, for researchers to be able to conclude that "the sympathy evoked by witnessing someone else's accident, as well as the sadness evoked by one's personal loss, require the mediation of [the ventromedial prefrontal region of the frontal lobe]," or that "damage to the frontal lobe alters the ability to emote when the emotionally competent stimulus is social in nature, and when the appropriate response is a social emotion such as embarrassment, guilt, or despair,"

or that "neurons in the ventromedial prefrontal regions respond rapidly and differently to the pleasant or unpleasant emotional content of pictures" (LS 61-62), they must be confident that the stimuli *are* emotionally competent stimuli. And this depends, it seems, on the researcher's ordinary or pre-scientific understanding of emotion.

Alternatively, the researcher may rely on the subject's own report that he is feeling an emotion and/or on his (the researcher's) observations of the subject's (other) behavior in order to establish that the subject is having/feeling an emotion. But again, this employs the concept of emotion from our ordinary language game. For instance, Damasio recounts an experiment in which he and his colleagues asked subjects to imagine an event that would precipitate feelings of emotion. Then the scientists monitored each subject's brain activity during the period that each subject reported feeling the emotion. The results indicated that areas of the brain that map body states were significantly modified while the subject felt the emotion (LS 96-101).[153] The assumption that the subjects could reliably indicate when they began to feel an emotion seems unproblematic, *because* they were competent at using emotion words. Damasio also reports that changes in skin conductance were found to always precede the subject's signal that he/she had begun to feel the emotion. Moreover, he cites this as evidence that emotions occur before feelings of those emotions. This conclusion clearly presupposes that skin conductance *is* part of (at least some) emotions. But this immediately goes back to the issue of how that is determined initially.[154] Hence, the everyday concept of emotion may have relevance even if Damasio's uses of "emotions" and "feelings" diverge from the ordinary usages.

The issue of using modern scientific probes to either identify the patterns that constitute emotions or to learn what types of brain activity (or other physiological activity) are correlated with having emotions/feelings is under-scored by another important fact: These investigations, due to their nature, are carried out in experimental or laboratory settings. From Wittgenstein's point of view, this is likely to raise issues that may be overlooked from the exclusively empirical perspective within which these experiments are being performed. In particular, in Wittgenstein's analysis, context plays important roles with respect to emotion. So it might be relevant to look more closely at, for example, how Damasio interprets the results of the experiment in which participants were asked to evoke certain emotions in

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[153]This experiment is summarized in §3.2 above also.

[154]Damasio describes experiments that showed that, among other results, subjects without brain damage generated skin conductance responses upon being shown "disturbing" pictures but not upon being shown "bland" ones, while subjects with certain types of brain damage did not generate skin conductance responses for any of the pictures (DE 208-210). These results might be used to determine that skin conductance is part of some emotions. But this then returns to the issue of knowing which pictures should evoke emotions (and which emotions those pictures should evoke).

themselves. From Damasio's definitions, if someone truly feels sadness, that is, if the subject has mental images of the type that constitute feelings of sadness, then that seems to be all there is to it. Yet it makes a difference in the language game whether someone is happy because he just won the lottery, if he is happy because he is remembering winning the lottery five years ago, or if he is an actor on stage who has elicited happiness in himself (in order to make his character more realistic) by recalling an event that made him happy in real life. For instance, depending on the different reasons for the emotion, we have certain expectations for the people's future emotional states.[155] So Wittgenstein would probably assert that Damasio is in fact studying emotion/feeling *in a very specific context*, and hence it must be remembered that Damasio's results apply to emotions/feelings in that context, not necessarily in all contexts.

This is not to say that the scientists are not cognizant that there may, empirically, be effects of context introduced into their results (e.g., that the subjects feel a little nervous, in addition to feeling the "target" emotion, simply because of the unfamiliar environment and the presence of the scientists).[156] Rather, the point is again a conceptual one: Emotions cannot (conceptually) be separated from context; it is, in a way, always the context *plus* an emotional response that determines which emotion someone feels or if they even feel any emotion at all. This idea is a subtle one, but it is the one that §2.3 above, for example, attempts to convey. The discussion of phenomena and phenomena *of* ... advances the idea that in the language game, our behaviors (or the other phenomena we exhibit) are intrinsically tied to the context in which they occur in order for them to be understood *as* certain behaviors (or phenomena). The conceptual importance of context with respect to emotion is also brought out by the argument given by Bennett and Hacker that is mentioned in §2.4.4 above. Specifically, Bennett and Hacker maintain that context (e.g., the circumstances in which the emotion occurs; the intentionality of the emotion; the subject's reasons, motives, beliefs) is needed to individuate different emotions.

The conceptual relevance of context in experimental settings is perhaps best brought out by considering an extreme case, such as that of the woman who unexpectedly started to cry and say how unhappy she was when doctors applied electrical current to a particular area of her brain.[157] In this case, Wittgenstein would likely disagree that the woman felt *sadness* at all.

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[155]We would be surprised if the man who just won the lottery suddenly became sad. But if the actor's happiness departed immediately after leaving the stage, we would probably not be surprised.

[156]Damasio addresses a similar "empirical" contextual issue when he discusses the gambling experiments. He specifically notes that these experiments were designed to avoid the "artificial nature of most experimental neuropsychological tasks" (DE 212). Instead, they mimic real-life games, and hence, real life (DE 215).

[157]See §3.2 above for a description of this case.

She obviously exhibited characteristic expressions of sadness. But was the context one in which these were phenomena *of sadness*? From a conceptual perspective, the features of the context differ so dramatically from a typical context in which we would use the word "sadness" that it does not seem grammatically correct to ascribe that emotion to the woman. For example, her behavior changed as soon as the current was started or stopped (from exhibiting characteristic expressions of sadness to not exhibiting characteristic expressions of sadness, respectively). Also, although the thoughts that she conveyed while crying (e.g., that everything is useless, that she felt worthless) are ordinary reasons for being sad, she did not seem to have such reasons prior to the application of the current. For after the current was stopped, she was puzzled as to why she had felt as she did, which indicates that without the electrical stimulation, she did not think that everything was worthless.[158] These features run counter to our concept of sadness. For sadness does not start and stop in well-defined intervals, and likewise, if someone has a reason to be sad, that reason "persists" to some extent (i.e., it does not make sense for someone to have a reason to be sad and then *not* have a reason to be sad in well-defined intervals).[159] So the experimental findings may indicate a biological cause of behaviors that are conceptually related to sadness. Hence, they may be important with respect to studying biological causes of sadness.[160] But if the woman was not sad (according to the ordinary conception of sadness), then they do not themselves probe a cause of ordinary sadness.

This woman's case also suggests a final comment about the relation between Wittgenstein's work and Damasio's work. The notion of an emotionally competent stimulus, or ECS, is introduced within the framework of Damasio's account of emotion and feeling. Damasio does little to specifically explicate the notion of an ECS, yet he remarks that there were no

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[158]Damasio mentions this as well. From his point of view (in which thoughts can be emotionally competent stimuli that cause emotions), "She had no thoughts causative of sadness or any feelings of sadness prior to having an emotion called sadness" (LS 70). He then asks, "Why would this patient's brain evoke the kind of thoughts that normally cause sadness considering that the emotion and feeling were unmotivated by the appropriate stimuli?" (LS 70-71). His answer is that emotions can evoke the kind of thoughts that normally cause emotions, just as those kind of thoughts can evoke emotions. Hence, the electrical current caused emotion (i.e., the woman's crying, her body posture, etc.) that led to feelings of sadness *and* to the kind of thoughts that can cause sadness.

[159]See §2.4.3 above for a discussion of ascription of sadness.

[160]Biological causes of emotion are something Wittgenstein as a philosopher does not investigate, but that he seems to think science can (see the remarks in §2.4.1 above). Bennett and Hacker may disagree with this assessment of Wittgenstein's view, however. For in discussing causes of sadness, none of the examples they give are (or conceptually can be) biological. They say, for instance, that a casual remark may cause an emotion; also, the cause of one's fear is what one is frightened *by* (PFN 206, 220). Hacker (2004) uses these types of examples as well (pp. 12-13). Bennett and Hacker also say, "Unquestionably, the appropriate functioning of the brain is a *causal condition* of feeling emotions," and they specifically distinguish a causal condition from a cause of emotion (PFN 208).

"appropriate stimuli" that initially caused the woman's sadness and feelings of sadness.[161,162] In other words, although he seems to view the electrical current as a cause of her sadness, he does not view it as an ECS. Damasio makes other comments that indicate that thoughts can be ECSs (LS 69, 70). His hypothesis about (i.e., his definition of) emotions and feelings implies that ECSs can be objects or events; he also says that some ECSs are such innately while others are ones that we learn (LS 53). ECSs can be visual or auditory (LS 60). Further, in discussing social emotions, he gives examples of ECSs like "weakness in the individual's own behavior," "another individual's violation of norms," and "recognition (in others or in self) of a contribution to cooperation" (LS 156). Since ECSs are central to Damasio's hypothesis, and there is this diverse variety of possibilities of what can be an ECS, it might be useful to conceptually analyze the concept of an ECS. It would in addition be interesting to ascertain in what ways and to what degree the concept of an ECS includes various elements of context. That is, for something to be an ECS, are there certain requirements regarding the circumstances in which it occurs? In particular, how exactly do the subject's thoughts, beliefs, prior experiences, etc. relate to this (i.e., what justifies an ECS *being* an ECS)? Such a dedicated analysis would provide Damasio with a more unified position from which to make claims about the triggers and/or causes of emotions and feelings.

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[161]This assumes, as Damasio does, that she was sad. But that assumption in itself is not relevant here.

[162]Damasio alternatively refers to ECSs as "causing" emotions and as "triggering" or "evoking" emotions (cf., LS 53, 60, 69-71). It is unclear whether he in fact wants to distinguish between what *causes* an emotion and what *triggers* an emotion.

5   Summary and Conclusions

This thesis has reviewed two very different frameworks within which emotion is studied. Or in Wittgenstein's terminology: He and Damasio are engaging in two different practices, the practice of conceptual analysis and the practice of (neuro)science, respectively. This language game in which Wittgenstein participates focuses on concepts, and its method of inquiry is to describe the grammar of ordinary language users. The research therefore appeals only to what we (as language users) already know, namely, how certain words are used. The ultimate aim of such philosophical investigation is to gain a synoptic view of everyday language use, and hence, of our concepts. The goal of a conceptual analysis of emotion is to develop a perspicuous representation of the use (i.e., grammar) of the word "emotion." Wittgenstein's work yields understanding regarding the concept of emotion, including how emotion is linked to other concepts, and it helps eliminate philosophical confusion (such as that which arises when philosophers try to determine a non-grammatical essence of emotion by asking "What is emotion?").

The language game that Damasio plays is, in contrast, rooted in empirical discovery. Investigations follow the scientific method, which (broadly construed) consists of forming and testing hypotheses based on observations and experimentation. Damasio proposes definitions of emotions and feelings that would explain an observed correlation between impaired emotion/feeling and damage to certain brain regions that are linked to sensing body states. In addition, his somatic-marker hypothesis attempts to explain an observed correlation between impaired emotion/feeling and impaired decision-making. As this indicates, a neuroscientist does not come to understand emotion by investigating concepts and the connections between them, but rather by examining the associations between emotion and biological systems.

Given that such fundamental differences exist between the two studies, §4 uses a comparative approach in order to highlight differences and similarities between Wittgenstein's and Damasio's results with respect to emotion. That comparison suggests that some of Wittgenstein's ideas (e.g., the contextuality inherent in emotion) might be relevant when interpreting outcomes of experiments. Further, Wittgenstein's analyses indicate ways that Damasio's hypotheses could be sharpened (e.g., by clarifying how emotion-patterns are identified, how emotions are ascribed, and what detailed characteristics mental images and ECSs have). Likewise, Damasio's work can provide information about aspects of emotion that Wittgenstein's work cannot (e.g., biological causes of emotion).

Bennett and Hacker also argue for a way that, in general, philosophical conceptual analysis relates to neuroscience. Namely, philosophers can expose conceptual confusion in neuroscience. Bennett and Hacker argue as well (although their full argument is not presented in this thesis) that Dama-

sio's definitions are indeed conceptually confused. If Bennett and Hacker are correct about Damasio, then looking back to the material presented in §1.4 above, it seems that Damasio's case would fall into the following category: Damasio's definitions of emotions/feelings, and the somatic-marker hypothesis that is based on them, are hypotheses (which Bennett and Hacker claim lack meaning, that is, do not make sense); hence, it is impossible to empirically verify or refute Damasio's hypotheses. But if that is so, what is the significance of the observations and experiments that Damasio conducts in order to test his hypotheses? Bennett and Hacker suggest, for instance, that Damasio's subjects who do not feel emotions may have impaired decision-making because their brain damage has affected their ability to care about, or persist in caring about, goals (not because relevant somatic-markers are missing for them) (PFN 216).[163],[164]

Another possibility would be to accept the somatic-marker hypothesis but without the identification of somatic-markers as emotions or feelings of emotions. So although there is a correlation between impaired emotion/feeling and impaired decision-making, it is impaired somatic response (not impaired emotion/feeling) that causes or leads to the impaired decision-making. In conjunction with this, one might also want to suggest that experiencing emotion (or in Damasio's terms, feeling emotions) does include "sensing" (i.e., via neural maps) changes in somatic state. Then the subjects with impaired emotion not only in fact lack some somatic responses (such as skin conductance in the gambling experiments), but it would be hypothesized that they also do not have a sense of some/any somatic responses that they *do* have.[165] This would still explain why subjects without brain damage who felt emotions showed increased activity in the somatosensory regions of their brains (cf., LS 99-101). Yet it would not take the step of *equating* emotions with somatic responses.

Regardless of whether Bennett and Hacker's arguments against Damasio's definitions are accepted, however, and regardless of whether the above proposal is empirically viable, an important issue is raised. Science can investigate phenomena, like brain activity, that philosophy cannot. If science makes discoveries about neural processes that underlie or cause or are, at least, correlated with emotion, at what point would or should that information become part of the "everyday" concept of emotion that conceptual analysts study? For example, at what point would or should our everyday understanding of emotion include the idea that someone who is feeling an

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[163]Hacker (2004) makes the same suggestion (pp. 19-20).

[164]Interestingly, Damasio seems to have already considered this when he describes one of the brain-damaged subjects in the gambling experiment: "Clearly, [the subject] was engaged in the task, fully attentive, cooperative, and interested in the outcome. In fact, he wanted to *win*. What made him choose so disastrously?" (DE 215).

[165]That is, these subjects might *have* some somatic responses (that Damasio calls "emotions"), but these body changes might not be represented in neural maps.

emotion also has a heightened sense of his or her body states (which are, perhaps, represented in neural maps)? This complex question ties back in with material from §1.2 above, where it was pointed out that Wittgenstein sees the possibility of change as being inherent in our language games. Admittedly, Wittgenstein was not addressing the topic of science influencing language in his remark covered in §1.2, and unfortunately, the issue of language change will not be explored here. But the question that was raised serves nevertheless as a reminder that language games can and do change, and it further illustrates that the relationship between philosophical conceptual analysis and scientific research is itself complex, with each discipline having the potential to affect work carried out within the other.

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List of Abbreviations

AWL   Ambrose, A. (ed.): 1979, *Wittgenstein's Lectures: Cambridge, 1932-1935*, University of Chicago Press, Chicago

BB   Wittgenstein, L.: 1969, *The Blue and Brown Books*, Barnes & Noble, New York, second edition

DE   Damasio, A. R.: 1994, *Descartes' Error: Emotion, Reason, and the Human Brain*, Avon Books, New York

FWH   Damasio, A. R.: 1999, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*, Harcourt, New York

LPP   Geach, P. T. (ed.): 1989, *Wittgenstein's Lectures on Philosophical Psychology 1946-47*, University of Chicago Press, Chicago

LS   Damasio, A. R.: 2003, *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*, Harcourt, New York

LW   Wittgenstein, L.: 1982, *Last Writings on the Philosophy of Psychology*, Vol. 1, University of Chicago Press, Chicago

OC   Wittgenstein, L.: 1969, *On Certainty*, Harper & Row, New York

PFN   Bennett, M. R. and Hacker, P. M. S.: 2003, *Philosophical Foundations of Neuroscience*, Blackwell Publishing, Oxford, England

PI   Wittgenstein, L.: 2001, *Philosophical Investigations*, Blackwell Publishing, Oxford, England, third edition

RPPI   Wittgenstein, L.: 1980, *Remarks on the Philosophy of Psychology*, Vol. 1, Basil Blackwell, Oxford, England

RPPII   Wittgenstein, L.: 1980, *Remarks on the Philosophy of Psychology*, Vol. 2, Basil Blackwell, Oxford, England

Z   Wittgenstein, L.: 1970, *Zettel*, University of California Press, Berkeley, CA