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### The language of emotions: An analysis of a semantic field

P. N. Johnson-laird<sup>a</sup> & Keith Oatley<sup>b</sup>

<sup>a</sup> MRC Applied Psychology Unit, 15 Chaucer Road, Cambridge, UK

<sup>b</sup> Department of Psychology, Glasgow University, Glasgow, UK

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## **The Language of Emotions: An Analysis of a Semantic Field**

P. N. Johnson-Laird

*MRC Applied Psychology Unit, 15 Chaucer Road, Cambridge, U.K.*

Keith Oatley

*Department of Psychology, Glasgow University, Glasgow, U.K.*

This paper uses a theory of the emotions to motivate a semantic analysis of English words referring to emotions. The theory assumes that emotions have a two-fold communicative function, both externally amongst members of the species, and internally within the brain so as to bypass complex inferences. It implies that there is a small number of basic signals that can set up characteristic emotional modes within the organism, roughly corresponding to happiness, sadness, fear, anger, and disgust. In human beings, these modes can be modulated by the propositional content of the cognitive evaluation that caused the emotion signal, or else, if this content fails to impinge on consciousness, these modes can be experienced as emotions that have occurred for no apparent reason. According to this "communicative" theory, there should be a set of terms that refer to basic emotions, and these terms should have no internal semantics, since they cannot be analysed into anything more basic, such as a prototype or a set of semantic features. Other terms should refer to states that combine a basic emotion with a propositional content. Finally, the theory implies that any emotional term should devolve upon one of the five basic emotion modes, or some subset of them, and that there will be no need to invoke any other emotional states. These predictions were borne out by the semantic analysis of 590 emotion words.

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## INTRODUCTION

William James (1890, p. 485) argued that no single coherent outcome is likely to be produced by the analysis of words referring to emotions:

If one should seek to name each particular one of [the emotions] of which the human heart is the seat, it is plain that the limit to their number would lie in the introspective vocabulary of the seeker, each race of men having found names for some shade of feeling which other races have left undiscriminated. If we should seek to break the emotions, thus enumerated, into groups, according to their affinities, it is again plain that all sorts of groupings would be possible, according as we chose this character or that as a basis, and that all groupings would be equally real and true.

We will advance an alternative proposal: Not only are there naturally occurring groups of emotions, but these naturally occurring groups form the basis of the meanings of English emotion terms. They are the subjective experiences that emotion terms denote.

We can discern two different kinds of alternative to our conjecture. The first is well represented by the quotation above from James, and in more recent times by Mandler (1962, 1984). On this view, emotion partly depends on a heterogeneous set of events that occur to the person having the experience. In James's theory, these events are internal. In Mandler's theory, they are meaningful external events that are used to label arousal. As, in either case, such events are heterogeneous, and often idiosyncratic, there is no reason to suppose that analyses of emotion terms will tell us anything substantial. This view fits well with the ethnographic thesis that emotions are culturally variable and reflect the rudimentary theories and taxonomies of folk psychology. Ordinary language refers to a wide variety of different ideas about an assortment of experiences, and provides no basis for a unified theory. These naïve accounts will be ultimately replaced by a scientific understanding that will retain little or nothing of folk intuitions or terminology.

The second view is that an emotion is a sequence that includes an eliciting condition, a cognitive evaluation, physiological activation, a change of action readiness, and finally an action (e.g. Frijda, 1986). Emotion words may refer to all or any part of this sequence of events—which part of the sequence they do refer to may well be culturally and individually idiosyncratic. The conclusion is, again, that emotion terms are largely heterogeneous, and that no coherent classification of them is possible.

Nevertheless, some recent work analysing the emotion lexicon from the sequential standpoint has been carried out by Fehr and Russell (1984), and by Shaver et al. (in press). These investigators argue that the concept of

emotion depends on a prototype, rather than a set of necessary and sufficient conditions. Different emotions are more or less good exemplars of the core concept, much as different exemplars of categories such as bird or fruit are more or less good exemplars of their respective categories (see e.g. Rosch, 1973). Because semantic analysis primarily concerns the tacit grasp of concepts, not an understanding available to introspection, it is not easy to demonstrate which particular concepts are prototypical—precisely because we lack conscious access to them. Prototypicality is often claimed to have been demonstrated by showing that subjects rate instances of a concept as varying in typicality and are faster to verify good exemplars than poor exemplars. Armstrong, Gleitman, and Gleitman (1983) point out that such phenomena are not decisive, because they may occur, as these authors show, with concepts that do have necessary and sufficient conditions.

Part of the purpose of this paper is to test whether an orderly semantics of English emotion terms is possible. If so, it questions these two alternative positions, and makes our theory of emotion more plausible. Two lines of work are close to our own in that they too analyse the meaning of emotion terms and specify their contribution to the truth conditions of sentences in which they occur. One analysis is due to Wierzbicka (e.g. 1972, 1987). She goes further than we do, and proposes that all emotion terms can in principle be analysed. We have benefitted from her work, but we shall argue that only some emotion terms have a semantic analysis, whereas others denote unanalysable primitives.

The other work closely related to ours is that of Ortony, Clore, and Foss (1987) and Clore, Ortony, and Foss (1987). In their initial work, they gathered together a large corpus of mental and affective words, and carried out a componential analysis of them in order, in part, to distinguish between those words that referred to emotions and those that did not. The analysis was based on as few assumptions as possible, in a way that was not specific to any particular theory of emotion including their own. Their first distinction was between internal and external conditions (Ortony et al., 1987). External conditions include descriptions of behaviour or objective states of affairs, such as “Moses was abandoned in the bullrushes”. The terms that occur in these cases may have emotional connotations, but they do not necessarily refer to emotional states. Within the terms denoting internal conditions, Ortony et al. distinguish mental conditions from non-mental conditions, such as “hungry” and “thirsty”. Next, they divide mental terms up into those that focus on affects, those that focus on behaviour, and those that focus on cognition. They propose, as we do, that emotions are mental states (not sequences that include eliciting conditions, actions, etc.), but these states, they claim, are valenced in that they imply moving towards or away from something.

Clore et al. (1987) have discovered that not just they, but also their undergraduate subjects, could distinguish between emotional and non-emotional states on the basis of a simple linguistic test. Their test for a genuine emotional term, such as "happy", is that subjects rate both "feeling happy" and "being happy" as emotions. A term such as "ignored", however, is not a genuine emotional term, because subjects rate "feeling ignored" as an emotion, but not "being ignored". Thus, Clore et al. provide us with a helpful initial clarification concerning which terms are truly part of the emotional lexicon.

The feature that differentiates our analysis from those of Wierzbicka, and Ortony, Clore, and their colleagues, is that their approaches did not start with any strong commitment to a particular theory of emotions. Wierzbicka views her work as part of a general semantic analysis that ranges over the entire lexicon, and so she is equally concerned with the meaning of "red" and "cup". Ortony, Clore, and their colleagues have committed themselves to the idea that emotions are mental states, but their main aim is to derive a computationally tractable calculus of the kind from which a language understanding programme would be able to derive inferences. In contrast, we shall examine the consequences of our communicative theory of emotions for the semantics of emotion words.

### A COMMUNICATIVE THEORY OF EMOTIONS

The theory of emotions that motivates our semantic analysis has been presented in detail elsewhere (see Oatley & Johnson-Laird, 1987). Its central assumption is that emotions serve a communicative function both within the brain and within the social group. In both cases, emotions are simple signals that propagate pervasively within the system. Unlike the signals of a natural language, these signals do not have a propositional structure. The meaning of a propositional signal depends on combining the meanings of its parts according to its syntactic structure, whereas the meaning of a non-propositional signal is not composed out of the meanings of its parts. Its parts have no meaning in themselves. A good example of a non-propositional signal is an alarm call: It has a structure that enables it to be easily recognised, but its significance does not depend on combining the meanings of its parts according to the overall structure of the signal.

The theory assumes that there is a small set of non-propositional signals that arise at recognisable junctures in plans. The signals govern the management of plans, particularly those that are concerned with multiple goals. They enable an organism to react in a general preparatory way rather than either with the stereotyped response of a "fixed action pattern" or with intricate behaviours that depend on costly inferential processing. Hence, each emotional signal is associated with a specific physiological

pattern, which perhaps has its own neurochemical basis. It acts within the cognitive system to set the modules of the system into a co-operative mode appropriate to the juncture in the plan. The organism is thus prepared to act in certain ways and to communicate emotional signals to others. An awareness of this "action readiness" can contribute to the experience of an emotion, but one can experience some emotions without any consciousness of a propensity towards certain actions. Those actions that can communicate emotions include facial expressions, movements and gestures, and tone of voice. As with the internal system, the external signals can set the community of individuals into an appropriate emotional mode.

A major assumption of the theory is that mental architecture consists in a hierarchy of separate processors, or modules, that carry out computations in parallel, and that an emotion can be set up by a cognitive evaluation occurring at any level in this hierarchy. The evaluation can set the processing modules into one of only a small number of emotion modes. These modes constitute the fundamental elements out of which all subjective experiences of emotion are constructed, and, from our analysis of the junctures at which they arise, we take them to correspond to those experiences that have in English as their closest labels: *happiness*, *sadness*, *anger*, *fear*, and *disgust*. Around each mode, there may cluster a family of related emotional experiences, e.g. if the mode of happiness has an object, then it constitutes a feeling of attachment. Consciousness depends on the processing module at the top of the computational hierarchy (see Johnson-Laird, 1983). In human beings, the normal subjective experience of an emotion accordingly depends on consciousness receiving both the emotional signal and a propositional message encoding the cognitive evaluation that caused the signal to propagate in the first place. The theory allows, however, that the emotion can be consciously experienced in the absence of a propositional message. The system as a whole may be in a particular mode for a relatively short period of time, in which case the state is ordinarily referred to as an emotion, or it may remain in a particular mode for some time and often in the absence of any propositional information about its cause, in which case the state is ordinarily referred to as a mood. Certain personalities may even be constitutionally biased towards one mode rather than others.

Bodily sensations are another form of mode, but they are distinct from emotions in their causation, termination, and communicative consequences. Bodily sensations have physical causes, e.g. deprived of food one feels hungry. They can be terminated by other physical causes, which in turn produce further bodily states. They have bodily and behavioural consequences that have a direct purpose. Emotions, however, have psychological causes. They are created by cognitive evaluations, e.g. the perception of a predator makes one fearful, its disappearance reduces the

fear. They have consequences that include ritualised, or symbolic, behaviours that no longer serve any function other than the communication of the emotion, e.g. an alarm cry, or a laugh. These behaviours can communicate an emotional state to other members of the species, and sometimes to members of other species.

Basic emotions often have bodily sensations accompanying them. According to our theory, a distinctive physiological state is associated with each emotion mode, and one can be aware of its bodily and somatic consequences—sweating, and a racing pulse, say, as a result of fear. Yet, these consequences are dissociable from the emotion; one can experience the bodily sensations without the emotion; one can experience the emotion without the bodily sensations. Of course, the cognitive evaluation of such sensations may in turn lead to emotional consequences. Lust is an interesting case in point, because it depends on both a bodily state—sexual arousal—and an emotion of desire. The sensation can be produced by physical stimuli, and pleasure can be experienced in this way without the normal concomitant emotion. When one is touched on the skin, it makes a great difference who is doing the touching. Different evaluations may induce love, fear, or repulsion. Pain is another bodily sensation that is intimately associated with emotion, and indeed the word “pain” and its cognates can be used to denote either the sensation or the emotion of sadness. Emotions may be both aroused by, and modify, the experience of bodily sensations.

Finally, the theory allows that there is a special category of complex emotions. They emanate from consciousness, because they arise from cognitive evaluations that depend on access to the model of the self, e.g. embarrassment, jealousy, and regret. These emotions are inextricably bound up with the propositional message that captures their cause: They cannot be experienced without some awareness of the circumstances that occasioned them.

### THE SCOPE OF THE PAPER

Our theory of emotions receives empirical support from a range of empirical observations concerning both somatic and behavioural phenomena (see Oatley & Johnson-Laird, 1987). It also yields many predictions that we have yet to test, e.g. the possibility of a dissociation between feeling and propositional content for only certain classes of emotion. Our aim in this paper is to follow-up the consequences of the theory for the semantics of emotion words. If the theory is correct in its essentials, then three main predictions follow. First, emotional terminology should be analysable into coherent categories. Second, all terms denoting emotions ultimately depend on just the five basic families of emotion modes, roughly speaking:

happiness, sadness, anger, fear, and disgust. This prediction allows that a word may denote disjunctively more than one of these modes; its essential claim is that the emotional component of any word's meaning never goes outside them. Third, words referring to emotions will reflect the structure of emotional experience as posited by the theory, and so some words may be used to refer to basic emotions, which can be experienced without the individual experiencing them being aware of their cause or their object, whereas other words will designate emotions that can be experienced only with a known cause or a known object. There should also be words designating complex emotions that have a highly specific propositional content that cannot be divorced from their subjective experience.

It may turn out that there is no coherent or useful classification of emotion words. This eventuality would show that the position adopted by James, and other more recent psychologists, such as Mandler and Frijda, is the correct one. It may turn out that emotion words refer to subjective states other than those that depend on the five basic modes. If there is any such word—as evinced by, say, the judgements of subjects or the entries to be found in dictionaries, then the theory is false in its current formulation. It may turn out that emotional words cannot be analysed in terms of the sorts of experience postulated by our theory. If so, then the theory is radically false. We have either proposed an erroneous account of emotions or the terminology of daily life is wholly remote from the real nature of emotions (or both).

The remainder of our paper is organised in five main sections. First, we describe the corpus of emotion words that we have collected, and clarify certain conceptual, morphological, and syntactic matters. Second, we consider the vexed question of whether or not basic emotion words have a semantic analysis. Third, we outline the sort of structure that is typically to be found in any semantic field as a guide to what we might expect for emotional words. Fourth, we describe each of the different classes of emotional words and summarise their semantic analyses. The corpus itself, along with our semantic analyses for each word, is presented in Appendix 1, and a set of related terms that do not denote emotions is presented in Appendix 2. Finally, we draw some conclusions about our analyses.

### THE CORPUS OF EMOTION WORDS

We collected a representative sample of words denoting emotions (see Appendix 1) by inspecting a number of sources. First, we examined the set of 196 words which Fehr and Russell (1984) had obtained when they asked 200 subjects to write down instances of emotions. Many of the subjects' responses denoted, not emotions *per se*, but expressions of emotions (e.g. laughter, smiling, crying, tears, frown), bodily states associated with



emotions (e.g. strong, tiredness), properties of emotion (e.g. deep, positive, negative, expressive, mixed, disturbed, uncontrollable, turbulent), characteristics of behaviour motivated by emotion (e.g. sincerity, giving, helping, sharing, violence), personality traits related to emotion (e.g. outgoingness, gentleness, sensitive, stubbornness, hardness, vulnerability, hyperactive), states of mind associated with emotions (e.g. confusion, uncertainty, arousal, control, conflict, thinking, meditating, alert), and cognates and superordinates of emotion (e.g. reactions, responsive, state, communication, expression). None of these words refer to emotions according to the “feeling X” and “being X” test devised by Clore et al. (1987). Hence, we excluded them from our sample (but see Appendix 2, which lists many such words). Second, we included in our sample all the words that occurred in the Clore et al. (1987) corpus that the experimenters or the subjects (or both) considered to contain an affective component. Third, we included the words of Tiller’s (1988) corpus. These three corpora provided us with a total of 327 words. Finally, as a result of scouring thesauruses, dictionaries of synonyms, previous psychological studies based on emotional terminology (e.g. Davitz, 1969, 1970; de Rivera, 1977), and an unpublished list devised by Richard Beckwith as part of George Miller’s WordNET project, we were able to add a further 263 words. They either passed the “feeling and being” test, though they were not included in either the Fehr and Russell or Clore et al. corpora, or else they denoted causes of emotions, which we included for reasons that will become clear presently. Almost certainly, we have inadvertently omitted some English words denoting emotions, but our sample of 590 words is certainly representative and extends previous corpora.

### Syntax and Morphology

In order to present an analysis of emotion words as economically as possible, we shall try to avoid analysing all the different morphological variants of the same underlying root. The vocabulary of emotions does indeed contain words from all the main open-class categories: nouns, verbs, adjectives, and adverbs. Many root morphemes take appropriate suffixes to allow them to serve in all four categories. For example, “fear” is both a noun and a transitive verb, but it is also the root of certain adjectives, “fearful”, “fearless”, and “fearsome”, and their corresponding adverbs, “fearfully”, “fearlessly”, and “fearsomely”. These adverbs have also been turned into nouns: “fearfulness”, “fearlessness”, and “fearsomeness”. At the root of all of these words is the same morpheme denoting the same basic emotion. The interpretation of the suffixes is straightforward. They attribute the emotion or its denial to an individual, or they attribute the power of causing it to an individual; they map these notions into a

manner of performance; and finally they convert these manners of performance into abstract properties. Hence, in general, we shall treat only one or two forms of a word, and we shall not attempt to deal with all the other morphological variants into which the same root enters.

In some cases, however, there are changes in the interpretation of words formed from the same underlying root. In its emotional sense, for example, the verb “affect” and its participle “affecting” denote the power of moving the emotions, but the noun “affection” denotes the narrower concept of an attachment towards someone or something. There are other shifts of this sort. Compare the following pairs for instances of the phenomenon: “lovable”–“lovely”, “dread”–“dreadful”, “awe”–“awful”. The second member of each pair does not denote an emotional state. Likewise, there is no guarantee of the productivity of a particular suffix, e.g. “hate” yields “hateful” but not “hatesome”. Where a root yields different words with different emotional meanings, we will analyse both of them.

The etymology of emotional terms is complicated, and lies outside the scope of this paper. We shall instead approach the semantic field synchronically, justifying this strategy on the following grounds. The words that continue to be used frequently serve a useful semantic function, and hence our task should be to show that their meanings can be elucidated by our theory.

### Experience, Concept, Word

Before undertaking any semantic analysis, it is important to be clear about certain fundamental distinctions, which can be illustrated by the following predicament: You can be in the grip of a particular emotion, but it may be hard for you to conceptualise your experience and thus to describe it in words. This situation enables us to distinguish three important entities: an emotion, a concept of an emotion, and a description of an emotion. An emotion such as embarrassment is what you feel; a concept is a mental construct that enables you to categorise your experience as one of embarrassment; and a description is a way of putting your experience, presumably by way of its categorisation, into words. The meanings of words are concepts—those concepts that have been dignified by a word for the purposes of communication. Hence, when words refer to things in the world, such as clouds or cuckoos, they do so by way of their meanings—the concepts that people entertain about those things. But, because emotions are experienced directly, the linkages between experience, concept, and word, are different, as we shall see.

The meanings of emotional words are not immediately available to conscious inspection, and their analysis is complicated by several factors. In particular, emotional vocabulary is not the result of parsimonious

planning. Many words referring to emotions have other meanings too; many words are near synonyms and differ only in their connotations and usage; and in English and other languages, some emotional words are systematically ambiguous because they can be used to refer either to an immediate subjective feeling or to a general predisposition. For example, you can assert “I am frightened of her” either to refer to a feeling that currently grips you or else to refer to your general attitude towards the relevant individual, i.e. how you are disposed towards her even though you are not actually feeling frightened at the moment of your utterance. Another kind of ambiguity, as Clore et al. (1987) have pointed out, arises in the use of words that do not, strictly speaking, refer to emotions but that can be used to convey an emotional state, e.g. “feeling ignored”. As we have mentioned, we have tried to exclude the latter sort of words from our corpus.

#### DO BASIC EMOTION WORDS HAVE AN ANALYSABLE MEANING?

According to our theory, there is a set of basic emotion modes that correspond to internal signals that can impinge on consciousness. These modes—happiness, sadness, anger, fear, disgust—should be universally accepted as discriminable categories of direct experience. Basic emotion signals have no internal structure that is parsed and interpreted within the system. Hence, it follows from our theory that there is no way in which words that refer to the subjective experiences corresponding to these modes can be analysed semantically: The modes are *primitive* subjective experiences that the words denote. They are, as philosophers say, unanalysable *qualia*.

If you were “emotion-blind” and unable to experience emotions, then you would have no idea what it was like to feel, say, sadness. Words that can be analysed semantically, whether based on a prototype or on necessary and sufficient conditions, can be communicated to people who are not familiar with them. Although there are studies that have explored the analysis of emotions in terms of prototypes (see e.g. Fehr and Russell, 1984; Shaver et al., 1987), there are no concepts which, if taken for granted, will enable us to communicate the contribution that the word “sad” makes to the truth conditions of sentences. If you are emotionally blind, we cannot convey the meaning of the word “sadness” to you. One brave attempt in the literature to define its meaning (Wierzbicka, 1972, p. 61) offers the following analysis:

X feels sad = X feels as one does when one thinks that what one has desired to happen has not happened and will not happen.

But, as Wierzbicka (p. 59) herself remarks:

Thoughts have a structure which can be rendered in words, but feelings, like sensations, do not. All we can do, therefore, is to describe in words the external situations or thoughts which are associated in our memory or in our imagination with the feeling in question and to trust that our reader or listener will grasp what particular feelings are meant.

This procedure may be the best we can do, but it is not good enough for someone who cannot experience the emotion of sadness. Such an individual will not know how one *feels* when one thinks that what one has desired to happen has not happened. Likewise, the following sentence:

John feels sad even though he does not think that what he has desired to happen has not happened and will not happen.

uses the term in a way that explicitly violates the definition. Yet the assertion is entirely sensible, because a basic emotion such as sadness can be felt for no known reason—a phenomenon that our theory elucidates.

We agree with Wierzbicka (1987) that one of the aims of semantic analysis is to uncover the set of universal semantic primitives, and that it is possible to analyse the meanings of certain emotion terms, such as the ones denoting complex emotions, into more basic components. Thus, for example, the meaning of “regret” can be analysed along the following lines:

*Regret*: sadness as a result of evaluating one’s past action as harmful or wrong in relation to one’s current standards.

Where we disagree is over the status of words that denote basic emotion modes, such as sadness. Wierzbicka’s strategy is reminiscent of the account of emotion in Frijda (1986): She defines an emotion by recounting a brief scenario of a possible cause of the feeling. But, this analysis conveys only the conditions in which someone is likely to feel sad; it does not convey anything about what it feels like to be sad.

Why, then, not accept that the meaning of “sad” is given by a universal semantic primitive corresponding to one of the five basic emotion modes? One answer is that there is a link between “sadness”, “anger”, and “disgust”—they all denote negative emotions—and so they cannot correspond to semantic primitives (see Wierzbicka, 1972; Frijda, 1987). As we have argued elsewhere (see Johnson-Laird & Oatley, 1988), it may be fallacious to assume that because several words fall into a superordinate category, their meanings necessarily decompose into components, at least one of which is common to all. We would argue, for example, that the meanings of “red”, “green”, “blue”, etc. do not each contain a component equivalent to COLOUR, plus some other component that distinguishes the

particular nature of each colour (see also Fodor, 1977, who uses the implausibility of such an analysis to argue against the whole enterprise of decomposition into semantic primitives). On the contrary, we believe that the correct analysis is, not to decompose the meaning of "red", but rather to treat the meaning of "colour" as a disjunction: if something is coloured, it is red, or green, or blue, etc. Likewise, we claim that there are superordinate categories of emotion, such as "upset", that are based on disjunctions, and indeed that the term "emotion" itself ultimately depends on a disjunction of semantic primitives corresponding to the emotion modes.

Mees (1985) has offered a semantic analysis of emotional terms in which he argues that it is important to distinguish between the necessary and the contingent aspects of an emotional term—if only because no observations can falsify a necessary component. Thus, there is no need for any observations in order to confirm that "surprise" presupposes that something unexpected happened. The distinction is well-taken, but we do not accept that words that characterise the basic emotion modes contain any necessary components. For example, Mees argues that the correct usage of the word "fear" presupposes that some danger is, or seems to be, imminent, and that one's resources are not sufficient to cope with this danger or to prevent it. Once again, if such an analysis were correct, then it would be impossible to make sensible assertions that violate it. Yet, the following assertions seem entirely acceptable:

John feels fear but he doesn't know why.

When John contemplates meeting his parents-in-law, he always feels fear even though he knows he can avoid them, and in fact enjoys meeting them.

If there are no components underlying the meaning of a word referring to a basic emotion, then the only way a person can grasp the meaning of the word is to have experienced the emotion and to know that the word refers to such an experience. As emotionally blind people, if they exist outside science fiction, would be forever denied the subjective experience, they could never really understand basic emotion terms.

The acquisition of emotional vocabulary depends on more than the experience of basic emotions. You need the experience, but also an awareness of what caused it, and a knowledge of its consequences. You learn, for instance, that separation from an individual to whom you are attached elicits a particular subjective feeling, and that as a concomitant of that feeling you are likely to have certain bodily sensations and to express the feeling in crying and other behaviours. You learn that the subjective

experience that goes along with these observable eliciting conditions and concomitants is called “sadness”. Hence, when you observe other people in similar situations displaying similar signs, you can attribute the same subjective experience to them. Your attribution may be wrong: They may be feigning the emotion, or they may be emotionally blind and lack the subjective experience, but in general you will be right.

Although observable eliciting causes and concomitants are necessary for you to learn how to use emotional terms (cf. Wittgenstein, 1953), they are not part of the meaning of basic emotion words. If they were, it would be anomalous to make such assertions as:

I feel sad but I don’t know why.

I feel sad even though I don’t show it in any way.

Are causes and concomitants part of a prototype of the emotion? This is a difficult question, but one that can be answered by considering some further examples. If a speaker asserts:

The person I love has left me.

it is reasonable to infer the speaker feels sad. Indeed, the apparent absence of the feeling in the case of patients suffering from *encephalitis lethargica* is remarked upon by clinicians (e.g. Meyer-Gross, Slater, & Roth, 1960). Likewise, the inference is even stronger if someone asserts:

The reason I am weeping is because the person I love has left me.

Conversely, when a speaker asserts:

I am sad

one can infer by default that if the remark is true, then something has happened to cause the feeling of sadness—there is a variety of possible explanations. One can also infer that the sadness is likely to be expressed in the speaker’s demeanour and behaviour. However, the reader should note how we described these default inferences: We said that something has happened to cause the sadness and that some behaviour will express the sadness. We did not say that the eliciting condition is *part* of the sadness or that the concomitant expression is *part* of the sadness. In short, the members of a culture have a prototype for the sorts of events that cause an emotion such as sadness, and for the sorts of events that ensue; but they do not have a prototype for the subjective feeling itself. It is an unanalysable primitive experience. Hence, we conclude that a basic emotion, such as sadness, has causes and consequences, but is itself only a part of a prototypical sequence. Complex emotions, as we shall see, are rather different in this respect.

### THE STRUCTURE OF THE SEMANTIC FIELD

Given a basic concept, such as the notion of movement, Miller and Johnson-Laird (1976, sec. 7.5.1) show how the concept underlies an entire semantic field, that is, a set of words with meanings that depend on the concept. They also describe four principal ways in which the concept can be elaborated in the meaning of a particular word in the semantic field:

1. The word may presuppose a more restricted range of application of the basic concept, e.g. "leave" presupposes that its subject is at a particular location.
2. The word may depend on a particular modification of the concept, such as an adverbial modification or manner, e.g. "lurch" is a particular way of moving.
3. The word may signify a causal relation into which the basic concept enters, e.g. to "shift" something is to cause it to move.
4. The word may introduce an intentional component into which the basic concept enters, e.g. "chase". You can accidentally shift something, but you cannot accidentally chase it.

Emotional words ought likewise to denote different elaborations of the basic emotion modes. In order to outline the general structure of this semantic field, we will follow Miller and Johnson-Laird's procedure (1976, sec. 6.3.1) and use a series of diagnostic questions in which to capture our intuitions, and, we hope, those of the reader. A similar procedure is employed by Keil (1979) to delineate the ontology of physical objects. The use of intuitions can, of course, be backed up by data obtained from informants, but the first stage must be to formulate a theory based on intuitions about the clear cases (see Chomsky, 1965).

The questions that organise our taxonomy arise directly from our theory of the emotions. The first question to be asked about any abstract term is whether it can be used to refer to a feeling. If it can, then one can ask whether it is a purely bodily sensation, such as an itch or thirst, or a subjective feeling, such as happiness or fear, which may include some somatic elements—see also Clore et al. (1987), who use the same initial question. There is, of course, a small class of *generic* terms, such as "emotion" and "passion", which can be used to denote emotions in general. If a word denotes an emotion, then one can ask whether or not it is possible to experience the feeling without knowing its cause or object. Terms denoting feelings that can be experienced without knowing their cause or their object correspond to our category of *basic emotions*. (These terms can also be used to describe feelings with known causes; the point is

that they need not be used in this way.) Of course, an emotion can be experienced in different ways and in differing degrees of intensity, and so we can ask whether a term denotes such a modification, e.g. “elation” refers to an intense form of happiness, and so it counts as a simple modification of a basic emotion.

If a word denotes a feeling that must have a known cause or object, then its analysis calls for a combination of a basic emotion mode with a cognitive evaluation. The questions that distinguish these words concern the nature of that evaluation. We can ask whether a word concerns the object or source of an emotion. Thus, if “James fears Joan”, then she is the object or source of his fear. He is in a particular emotional relation to her, and we categorise these words as denoting emotional *relations*. The relation can often be experienced for no known reason, e.g. “love”.

Another question we can ask is whether the word denotes an emotion that must have a known cause, e.g. a person can be *glad* because a friend has recovered from an illness. A word such as “glad” does not specify anything about the particular nature of the event eliciting the emotion, but it does demand some event causing happiness. Hence, one cannot sensibly assert, “I feel glad but I don’t know why”. We shall refer to these words as denoting *caused emotions*.

An important class of words in many semantic domains (see Miller & Johnson-Laird, 1976) are so-called *causatives*. Such verbs exist for emotions, and their use in the passive voice provides another way of referring to caused emotions, e.g.

I was saddened by his death.

We have included these verbs (and also some causative adjectives, such as “poignant”) in our corpus. They are identified by asking whether a word concerns the cause of an emotion, e.g. to sadden someone is to cause them to feel sad.

A particular form of caused emotions that we shall separate from the rest are those that concern goals, e.g. “desire”. We distinguish these words by asking whether, given the relevant emotional state, there is something that one has as a goal. We refer to these words as denoting *emotional goals*.

Finally, there are words denoting emotions that combine an emotional mode and a propositional evaluation that concerns some aspect of the self. These words can be identified by asking whether an emotion results from evaluating oneself in some situation, e.g. “belonging” denotes the feeling that one is happy in relation to others and vice versa. Because these complex emotions depend on the model one has of oneself—a model that is accessible only by way of consciousness—they arise in consciousness and so cannot be experienced without an awareness of the circumstances occasioning them. We refer to words denoting these emotions as *complex*.



Words denoting emotions therefore fall into seven main categories according to our semantic classification. They can denote:

0. Generic emotions, e.g. "emotions" and "feelings".
1. Basic emotions, e.g. "happiness" and "elation".
2. Emotional relations, e.g. "love" and "hate".
3. Caused emotions, e.g. "gladness" and "horror".
4. Causatives, e.g. "irritate" and "reassure".
5. Emotional goals, e.g. "desire" and "avarice".
6. Complex emotions, e.g. "embarrassment" and "pity".

We shall say no more about the generic terms, but turn to a more detailed exploration of each of the remaining categories.

## THE SEMANTIC ANALYSES OF EMOTION WORDS

### 1. Basic Emotional Terms

Our theory posits five basic emotion modes, and so we can predict that there should be words referring directly to these emotions or to simple modifications of them. These words should accordingly denote emotions that can be experienced without the experiencer knowing their cause, though obviously they can also be used to refer emotions experienced for a known cause.

How can we determine that a word is semantically related to one of the five modes designated by "happiness", "sadness", "fear", "anger", and "disgust". One method is to use the so-called "but" test (Bendix, 1966; Miller & Johnson-Laird, 1976, sec. 6.3.1). If two words have nothing in common, they and their negations can be freely combined with the conjunction "but":

He was tired, but he was happy

and

He was tired, but he was not happy.

Thus, there is no semantic component in common to both "tired" and "happy". If two words are semantically related, however, then the results of one or both of the combinations will be odd. For example, "apprehensive" and "petrified", which are both *caused emotion* terms, share a semantic component, because although it is acceptable to assert:

He was apprehensive but not petrified

it is anomalous to assert:

He was petrified but not apprehensive.

Both words, of course, denote fear, but “apprehensive” denotes *mild fear about possible future events* whereas “petrified” denotes *intense and paralyzing fear*. Hence, the oddity of the following sentences:

He was apprehensive, but he felt fear.

He was petrified, but he felt fear.

Similarly, there is a semantic relation between “distressed” and “petrified”, because it would be odd to say:

He was petrified, but not distressed.

According to our analysis, “distress” has a disjunctive denotation: *Sadness or fear for a known reason*, and so the two words have fear as a common component. The “but” test can be helpful in exploring close semantic relations, but, as Miller and Johnson-Laird remark, it should be used with caution especially for more distant relations.

One modification of the basic modes, which the “but” test helps to reveal, concerns the intensity of the mode. Thus, to be “joyful” is to feel considerable happiness, whereas to be “ecstatic” is to feel intense happiness. In general, the more intense an emotion, the less likely it is to be experienced acausally, because it verges on the pathological to feel extreme emotions without knowing the reason why. Yet it seems that basic emotions can be experienced intensely for no apparent reason, as in the case of joy, irritation, or free-floating anxiety.

Another aspect of a basic emotion mode is its temporal duration. Certain terms refer to a currently experienced emotion, others refer to a prolonged state or mood, and still others refer to an even longer-term state—a disposition of the personality towards feeling that emotion. Thus, an individual can be described as irritable if he or she is currently angry, or in an angry mood, or has a general disposition to be angry. What our theory predicts is that basic emotion terms can be used to refer to moods or to emotional types of personality, because moods and personality types, often do not have a discernible cognitive cause. Both depend on emotion modes, and it follows that the vocabulary of basic emotions should provide descriptions of moods and personalities. Likewise, it should be possible to use generic emotion terms to refer to moods and personalities. They too do not require a discernible cognitive cause because they can be used to refer to any emotion including basic emotions. Where a word designates a caused emotion, i.e. one where the cause is known but does not have to fit a particular propositional recipe, then it will not in general be appropriate to use it to refer to a mood, still less to a personality type. These predictions are corroborated, as the reader can verify by consulting Appendix 1. Thus, for example, it would be unusual to describe a person as having a personality that was jubilant, grief-stricken, terrified, furious, or disgusted. It is only when we come to the complex emotions, such as

TABLE 1

Basic Emotions: A sample of words denoting basic emotions of differing intensities, which can occur in the absence of any known propositional content. These words can also be used to refer to moods and to personality types

<i>Basic Modes</i>				
<i>Happiness</i>	<i>Sadness</i>	<i>Fear</i>	<i>Anger</i>	<i>Disgust</i>
Light-hearted	Wistful	Timid	Grouchy	
Carefree	Gloomy	Tense	Touchy	Queasy
Happy	Sad	Anxious	Irritable	Nausea
High	Melancholic	Fearful	Angry	
Euphoric	Depressed	Panicky	Irascible	
Ecstatic	Wretched	Craven	Splenetic	

jealousy and shyness, that we again encounter words that are suitable to describe dispositions.

As there are 109 words in Appendix 1 that can be used to denote basic emotions, we cannot consider them all here, but Table 1 presents an illustrative subset. As the table shows, basic terms generalise naturally to moods and personalities. The labels at the head of the table—"happiness", "sadness", and so on—are not unique names for the five emotion modes, but rather those words of everyday English that seem most closely to refer to the modes in their unmodified forms. The table includes words denoting mild, ordinary, and intense emotions. None of these states necessarily depends on a conscious awareness of its cause.

## 2. Emotional Relations

Emotions are typically *about* someone or something; they are more likely to be experienced in relation to individuals or their actions than merely in a vacuum. Hence, one should expect there to be words that refer to the relation between someone who experiences an emotion and its object, e.g. "James fears Joan".

There is nothing problematical about the idea that fear and anger can have objects. Love and hate must likewise have objects, and our theory implies that they too depend on a combination of emotional mode—happiness and disgust, respectively—with the cognition identifying the person or entity towards whom, or which, the emotion is felt. This source of the emotion can be treated as its cause, but there are some subtleties to be ironed out. One can experience an emotion towards someone without knowing why they engender the feeling. Thus, just as one can be happy for

TABLE 2  
 Emotional Relations: A sample of words that express an emotional relation between the subject, who experiences the emotion, and the object of the emotion

<i>Basic Modes</i>				
<i>Happiness</i>	<i>Sadness</i>	<i>Fear</i>	<i>Anger</i>	<i>Disgust</i>
Like	Miss	Afraid of	Aggrieved with	Dislike
Love	Mourn	Fear	Angry with	Hate
Adore	Grieve for	Dread	Scorn	Loathe

no known reason so, too, one can love, hate, or fear someone without knowing the reason why. As theorists, we do not doubt that there is a cause of such emotions, but that cause may have little or nothing to do with the object of the emotion, and may not have entered the consciousness of the person experiencing the emotion.

Hatred is often expressed in displays of anger, but this connection is a contingent rather than a necessary one: you can hate someone, or something, without feeling anger; you can be angry with someone you do not hate. Sadness can also have an object, as when you miss someone from whom you are separated. Sympathy and pity depend on the same emotional mode but they are complex feelings that we will come to presently. Table 2 presents some examples of the 76 terms in our corpus that can be used to refer to emotional relations.

Of the terms denoting emotional relations, there is only one subset that might be taken not to correspond to a basic mode, namely, bravery, courage, boldness, and their cognates. In our view, to be brave is not to feel fear—or at least not to manifest it—in circumstances likely to provoke it. Bravery does not have a particular phenomenology other than perhaps a slight feeling of being pleased with oneself, or a particular physiology other than, perhaps, that of some conflicting symptoms of fear. It is a lack of an emotion rather than the positive presence of one. Similarly, serenity, peacefulness, and their cognates, refer to the mildly pleasurable sensation associated with a lack of dysphoric emotion in circumstances that might have provoked it.

### 3. Caused Emotions

Certain words denoting emotions normally signify a feeling that has a cause known to the individual experiencing it. For instance, if you say, “I am glad”, then, as the “but” test shows, you feel happy, but you cannot

TABLE 3  
 Caused Emotions: A sample of words denoting emotions that have causes known, in part, to the person experiencing the emotion

<i>Basic Modes</i>				
<i>Happiness</i>	<i>Sadness</i>	<i>Fear</i>	<i>Anger</i>	<i>Disgust</i>
Cheered	Dejection	Apprehension	Disgruntled	
Enjoyment	Sorrow	Consternation	Miffed	
Glad	Heart-broken	Afraid	Indignant	Disgust
Delight	Inconsolable	Panic	Cross	Sick
Overjoyed	Desolate	Terror	Furious	

properly disclaim all knowledge of what has occasioned the feeling. Thus, we can modify the “but” test to have as its second clause: “but I don’t know why”, or “but I know why”. The test shows that words referring to basic emotions (see e.g. Table 1) do not necessarily contain a cognitive component. It is perfectly sensible to assert, for example:

I am happy but I don’t know why

or

I am happy but I know why.

However, it would be odd to claim:

I am glad but I don’t know why

because the term is normally used to relate an emotion to a reason or cause, e.g. “I feel glad because the winter is over”, or to express an attitude towards a proposition (a “propositional attitude” in philosophical parlance), e.g. “I am glad that winter is over”. Hence, the language makes the distinction predicted by our theory: Some emotions are experienced without knowing their cause or reason, and others—those we refer to as *caused emotions*—are experienced for a known reason. Of course, all emotions have a cause, and so our label is meant to imply merely that some aspects of it are known to the experiencer. The five basic emotional modes ought to underlie the caused emotions, too, and this prediction is borne out by the analyses of the terms referring to caused emotions. There are 101 words in our corpus that can be used to denote caused emotions, and we present a set of typical examples from them in Table 3.

#### 4. Causatives and Emotions

One common form of discourse about caused emotions relies on causative verbs. These verbs, as we have noted, express the relation between the cause of an emotion and the person who experiences it, e.g. “The news

annoyed the President". The passive form of the verb can accordingly be used to refer to a caused emotion: "The President was annoyed by the news". In general, the description of the cause of an emotion is the converse of the description of a caused emotion: The two run along together in parallel. But there are some exceptions to this principle: some causative verbs denote the cause of a complex emotion (e.g. humiliate); and some have passive forms that do not denote emotions (e.g. to chafe someone is to cause them to feel anger, but speakers do not ordinarily refer to being chafed). A few adjectives also denote properties that cause emotions (e.g. poignant, tragic, dreary).

Although we have not marked the distinction in the analyses in Appendix 1, it is worth noting that some causatives refer to causes that are not the objects of the emotion. For example, it may be true that:

Joan frightened James

but Joan as such may not be the object of James's fear, because he may have been frightened by something that she did. Indeed, he may not even realise that it was she who was responsible. Other causatives, however, refer to both the cause and the object of an emotion. For example, if it is true that:

Joan intimidated James

then something that she did, or something about her, caused him to fear her.

Over 180 words in our corpus can be used as causatives, and they divide up into a number of families. As we expected, there are verbs that denote causes of each of the five main emotion modes, and we present some examples in Table 4. In addition, however, some denote causes of any

TABLE 4  
Causatives: A sample of words that can be used to denote the causes of emotions. Their passive forms can accordingly be used to denote caused emotions

<i>Basic Modes</i>				
<i>Happiness</i>	<i>Sadness</i>	<i>Fear</i>	<i>Anger</i>	<i>Disgust</i>
Content	Deflate	Disquiet	Irk	Putoff
Please	Disillusion	Perturb	Peeve	Alienate
Amuse	Dampen	Worry	Irritate	Estrange
Delight	Depress	Scare	Annoy	Repel
Transport	Sadden	Frighten	Enrage	Nauseate
Enthrall	Disappoint	Terrify	Incense	Sicken
Exhilarate	Desolate	Petrify	Infuriate	Revolt

emotion (e.g. excite, provoke, stir, overwhelm), some denote generically the causes of negative emotions: sadness, anger, fear, or disgust (e.g. upset, disturb, bother, trouble, distress), and some denote the causes of complex emotions (e.g. humiliate, embarrass, and encourage). Certain causative verbs denote the restoration of emotional equilibrium after sadness (e.g. cheer up, console, solace), fear (e.g. hearten), or anger (e.g. mollify, appease, placate). Only one set of causative verbs appears to fall outside the domain of the basic modes, and these verbs concern surprise (e.g. amaze, astonish, flabbergast). We have argued, however, that surprise is not a distinct emotion, but a reaction to an unexpected event that can be the precursor to any of the five emotion modes (Oatley & Johnson-Laird, 1987).

### 5. Emotional Goals

Emotions often function as motives that lead to characteristic behaviours designed to achieve goals. Love may lead to approach, sadness to withdrawal and inaction, fear to flight, anger to aggression, and hatred to avoidance. The achievement of a goal produces happiness, and certain words denote the state of having a goal (e.g. inclination, desire, need, want). Other terms denote specific sorts of goals (e.g. avarice, curiosity, greed, lust). Unfulfilled goals may lead to sadness or to anger, and some words denote these states (e.g. discontent, disappointment, frustration). There are still other verbs that express the sadness that results from thwarted love or desire (e.g. long for, pine for, lovesick). There are 42 words denoting emotional goals in our corpus (see Appendix 1).

### 6. Complex Emotions

Words that denote basic emotions can be used to refer to complex emotions too. Thus, someone can say:

I felt anxious because I was aware that I had made a fool of myself in front of those people

and then agree that the experience was one of embarrassment, which is a mild fear or shame brought on by a self-conscious assessment of oneself in a social situation. As terms that refer to basic emotions can also be used to refer to complex emotions, the structure of the language must not be confused with the underlying structure of emotions. The words in Table 1 can refer to both basic and complex emotions. This possibility is to be expected given our analysis, because we claim that all complex emotions devolve on the basic emotion modes. Where a particular complex emotion occurs frequently in a culture, and is perhaps of special significance in

social relations, then, as in other domains of discourse, appropriate terms are likely to have entered the language to refer to it. However, there is an important asymmetry: A term referring explicitly to a complex emotion is restricted to it, and is not interpretable as referring solely to the underlying basic emotion. Thus, for example, the word “embarrassment” denotes a complex emotion, and it cannot be used merely to refer to a basic underlying emotion. The reason for this asymmetry is that terms which explicitly designate complex emotions possess a complex semantic structure. Knowing how to use them properly, that is, knowing their contribution to truth conditions, depends on a grasp of the propositional content of the cognitive evaluation that creates the complex emotion. The word could not have been coined, or maintained in the language, unless this propositional information is available to members of the language community. It is part of the subjective experience of the complex emotion.

The preceding argument provides us with a powerful linguistic tool for identifying terms that refer to complex emotions (and not to basic emotions). Given that any complex emotion depends on a basic emotion mode, it follows that there will be a term referring to a basic emotion that renders true an implication of the following form:

If you feel complex emotion C, then you feel basic emotion B.

Here is an example of such an implication:

If you feel regret then you feel sad.

However, the converse implication is not necessarily true:

If you feel basic emotion B, then you feel complex emotion C.

Indeed, the implication:

If you feel sad then you feel regret

is not generally true, though it may be true on occasion.

The same pattern of inferences can be generated for terms that refer to different degrees of a basic emotion, but a further step in the argument eliminates these cases. Complex emotions depend on a propositional content reflecting the high-level cognitive evaluation giving rise to them. Hence, a paraphrase of an assertion about a complex emotion can always be provided by using a basic emotion term in a context that captures this content. For example:

If you feel regret then you feel sad as a result of evaluating a past action as harmful or wrong in relation to one’s current standards.

Our theory accordingly implies that a word specifically denoting a complex emotion should be analysable in terms of a basic emotion and



other concepts concerning the model of the self, which together correspond to the propositional content of the experience. We have examined this prediction in relation to our corpus, and 81 words clearly denote complex emotions.

Complex emotions are experienced as a result of high-level self-evaluations. Katz (1980) proposed and tabulated an analysis based on such self-evaluations and the idea that emotions can refer to past, present, or future events. We extend this analysis for complex emotions by assuming that a self-evaluation can be made either about your own state or about how you stand in relation to others (cf. Ortony, Clore, & Collins, 1988). Those emotions that concern your own state may concern your past actions, your current situation, or your goals. Thus, there are retrospective feelings such as regret or remorse. To feel regret is to feel sad because you judge that your past action, or inaction, was wrong; to feel remorse is similar except that you judge your action to be morally wrong. Emotions such as pride or boredom concern your current situation. To be suffused with pride is to feel pleasure as a result of having a high opinion of some aspect of yourself; to be bored is to be mildly depressed by your lack of purpose or goals. Emotions such as hope and despair are prospective and arise from evaluations of the likelihood of achieving your goals.

Emotions that depend on relating the self to others may be feelings that you have about yourself, e.g. to feel a sense of belonging is to feel happy that one fits in with a group, whereas to feel lonely is to feel sad because one has no company. Embarrassment and shame are similarly emotions that depend on a self-evaluation in relation to other people. However,

TABLE 5  
Complex Emotions: A sample of words that denote emotions experienced as a result of cognitive evaluations in relation to the model of the self

<i>Basic Modes</i>				
<i>Happiness</i>	<i>Sadness</i>	<i>Fear</i>	<i>Anger</i>	<i>Disgust</i>
<i>In relation to self</i>				
Hope	Hopelessness			Self-disgust
Complacent	Despair			Shame
Pride	Remorse			Self-hatred
Conceit	Self-pity			
<i>In relation to others</i>				
Closeness	Sorry for	Shy	Bitter	Resentment
Intimacy	Sympathy	Self-conscious		Envy
Belonging	Pity	Embarrassment		Jealous

there are feelings engendered by a comparison with others that are feelings about them, e.g. various forms of sympathy and empathy, and the more bitter feelings of envy and jealousy. The latter is instructive: If you feel jealous, then you judge yourself likely to be supplanted by a third party in an attachment, and in consequence you feel hatred for the third party. Of course, you may be angry, sad, or fearful, too, but you can experience the pangs of jealousy without feeling anything but cold hatred for the third party. And if you have this feeling for the relevant reason, it would be wrong to deny that you felt jealous. A representative set of terms denoting complex emotions is summarised in Table 5, which shows the basic mode for each of them.

There are no cases in which the meaning of a complex term appears to lie outside the basic modes. Other highly specialised complex emotions reflect a cultural influence on their propositional content that differs from one society to another. They include aesthetic, religious, sexual, and other transcendental feelings. Examples of words referring to such emotions include piety and accidie (i.e. spiritual torpor), and words that have been imported into English to make up lexical gaps, e.g. masochistic, *Schadenfreude*, and *Weltschmerz*.

## CONCLUSIONS

Emotions function as two-fold communications that enable a repertoire of behaviours to be produced with a minimal load on the information-processing system within an organism and on the communicative system between organisms (see Oatley & Johnson-Laird, 1987). Human beings can experience basic emotions for no apparent reason, but they can also experience emotions that have an object, a cause, or a goal, and complex emotions that depend on high-level cognitive evaluations. All these types of emotion depend on a small set of emotional modes.

We have approached the everyday language of emotions armed with this theory, which rests on empirical evidence from outside the linguistic domain, and we have shown how the different components of the theory are reflected in the words that are used to describe emotional experiences. This language and its underlying conceptual apparatus is intimately related to the real nature of emotions, and the meanings of emotional terms are neither arbitrary nor unanalysable but do indeed relate to experience. The folk psychology embedded within the language is essentially correct though radically incomplete and seldom articulated. The semantic field is based on the five emotional modes, and words that refer solely to them have no internal semantic structure—the modes are primitive and unanalysable states, at least from the standpoint of normal mental processing. Other words do refer, as we expected, to emotional experiences that combine a

basic mode with a knowledge—often partial, and perhaps often erroneous—of the cognitive evaluation that led to the mode or that concerns the object of the emotion. Likewise, there are terms that denote complex emotions that depend on cognitive evaluations concerning the model of the self.

What obscures the relatively simple structure of the semantic field is the diversity of terms that contain an emotional component. Likewise, the divergent analyses of emotional terminology to be found in the literature are a consequence, not of the absence of underlying order, but of the use of different methodologies lacking any common theory of emotions. Previous studies have also erred by including components that are not truly emotions, such as characteristics of behaviour like cruelty, aggression, and vehemence (see e.g. Frijda, 1970; Plutchik, 1962; Schlosberg, 1954).

Although some of the details of our account may have to be revised, we have corroborated our three major predictions. (1) Emotional terms relate to an organised semantic field, and are not an incoherent assemblage of terms. (2) Their meanings depend on the five basic emotional modes. (3) They divide up into coherent categories containing words denoting basic emotions, emotional relations, caused emotions, causes of emotions, emotional goals, and complex emotions.

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## APPENDIX 1

### A Corpus of 590 Emotional Words and their Analyses in Terms of the Five Families of Emotional Modes

The aim of this list is to establish that any word denoting an emotion can be analysed semantically as based on one of five basic families of underlying emotions, which for convenience we label as: happiness, sadness, anger, fear, and disgust.

The corpus was compiled from three main sources: those collected by Fehr and Russell (1984); Clore et al. (1987); and Tiller (1988). We considered all the words that Clore et al. or their subjects judged to contain an emotional component, and all the words in the other two corpora. Of the resulting words 76 do not, in our opinion, denote emotions, and so we have listed them separately in Appendix 2: None of them implicates any emotion outside of the five modes. The remaining 327 words are presented here together with a further 263 words not included in any of these corpora.

In general, we have used the morphologically simplest term, e.g. "happy" rather than "happiness", but, where different forms of the same root differ in meaning, we have sometimes used the more complex, e.g. "exhaltation" is a state of happiness whereas "to exalt" is to praise in order to cause happiness. Where a word has more than one meaning, we have proposed only an analysis of its emotional meaning(s), e.g. "worship" can refer either to a feeling or, more often perhaps, to the forms and rituals associated with that feeling. Likewise, we have not indicated specifically that a word can refer to a personality trait if it can also be used to refer to an emotional state or mood.

Our semantic theory, which can be found in the body of this paper, distinguishes seven main types of emotion words, which can denote generic emotions, basic emotions, emotional relations, caused emotions, causatives, emotional goals, or complex emotions. Each entry consists of four components:

1. An emotion word.
2. Its type: generic, basic, relation, etc.
3. A paraphrase of its meaning in terms of the five basic emotion modes (happiness, sadness, anger, fear, disgust). The paraphrase either directly uses a basic emotion word or else, for convenience, a word that is analysed into one of the five modes in its own entry. The latter is indicated by italicising the word, and the reader is referred to that word's analysis in order to find the underlying basic emotion. For example, "conceit" is paraphrased as "*pride* that the speaker regards as unmerited", and "pride" in turn is paraphrased as "happiness with self as a result of a high opinion of self in relation to others".
4. A code indicating which of the three corpora, if any, the word is to be found in: F = Fehr and Russell's corpus; C = Clore et al's corpus; and T = Tiller's corpus.

Finally, we have not included information about parts of speech since it can be found in any good dictionary. Sometimes a word receives two analyses, one appropriate to its use as one part of speech and another appropriate to its use as another part of speech.

### Words Denoting Emotions

Abandon	Generic: uncontrolled emotion.
Abashed	Complex: <i>ashamed</i> .
Abhor	Relation: to <i>hate</i> .
Abominate	Relation: to <i>hate</i> intensely.
Admire	Relation: to take <i>pleasure</i> from another's achievements or characteristics (or to think that one ought to). (F, C)
Adore	Relation: to <i>love</i> . (C)
Affect	Generic: <i>emotion</i> .
Affection	Relation: <i>liking</i> or <i>love</i> . (F, C)
Affinity	Relation: mutual <i>liking</i> .
Afraid	Caused emotion: fear for a known reason. (F, C, T)
Afraid of	Relation: fear in relation to someone or something. (F, C, T)
Affront	Causative: to <i>offend</i> .

Aggravate	Causative: to anger. (C)
Aggrieve	Causative: to anger. (C)
Agitate	Causative: to cause fear. (C, T)
Agony	Caused emotion: intense <i>pain</i> . (C)
Alarm	Causative: to <i>frighten</i> . (C)
Alienate	Causative: to cause to cease to <i>like</i> . (T)
Alienated	Complex: mild <i>anxiety</i> or <i>depression</i> as a result of an evaluation of self as not in emotional relation with others. (T)
Alleviate	Causative: to reduce <i>pain</i> .
Amaze	Causative: to <i>surprise</i> . (F, C)
Ambivalent	Generic: an uncertainty about which emotion one feels. (F)
Amorous	Emotional goal: <i>desiring love</i> . (T)
Amuse	Causative: to <i>entertain</i> , perhaps by way of humour. (F, C)
Anger	Basic emotion. Causative: to cause anger in someone. (F, C, T)
Angry	Basic emotion. (F, C, T)
Angry with	Relation: to feel angry towards someone or something. (F, C, T)
Anguish	Caused emotion: intense <i>pain</i> . (F, C)
Animosity	Relation: <i>hatred</i> for someone that may be expressed in anger. (F, C)
Annoy	Causative: to anger. (F, C, T)
Antagonism	Relation: <i>hatred</i> , or its expression.
Antipathy	Relation: <i>dislike</i> .
Anxious	Basic: fearful, mood. (F, C, T)
Apathy	Basic: mild <i>depression</i> or lack of response. (C)
Aplomb	Complex: <i>self-confident</i> .
Appal	Causative: to <i>horrify</i> .
Appease	Causative: to <i>calm</i> anger by <i>satisfying</i> a demand.
Appreciate	Relation: to <i>enjoy</i> . (F, C)
Apprehension	Caused emotion: mild fear about possible future events. (F, C)
Approbation	Relation: <i>approval</i> .
Approve of	Relation: to <i>admire</i> or <i>respect</i> . (C)
Ardour	Relation: <i>love</i> for someone.
Ashamed	Complex: <i>self-disgust</i> as a result of evaluation of self in relation to own and others' standards. (C, T)
Assuage	Causative: to <i>relieve</i> .
Assured	Complex: <i>confident</i> .
Astonish	Causative: to <i>surprise</i> . (C)
At-ease	Basic: <i>relaxed</i> . (C)
At-peace	Basic: <i>peaceful</i> . (C)
Attached to	Relation: <i>liking</i> or <i>love</i> .
Attract	Causative: to cause to <i>desire</i> . (F, C)
Avarice	Emotional goal: intense <i>greed</i> for money.
Aversion	Relation: <i>dislike</i> . (C)
Awe(-struck)	Caused emotion: <i>astonished admiration</i> . (C, T)
Bad blood	Caused emotion: angry for a known reason.
Bad-tempered	Basic: <i>irritable</i> .
Beguile	Causative: to <i>charm</i> or <i>entertain</i> .
Belonging	Complex: evaluation that self is happy in relation to others and vice versa. (F)
Bewilder	Causative: to cause mental confusion and perhaps <i>anxiety</i> . (C)
Bewitch	Causative: to <i>charm</i> intensely.

Bitchy	Basic: <i>irritable</i> or <i>hateful</i> . (C)
Bitter	Complex: suppressed anger as a result of evaluation that one has been wronged. (F, C, T)
Bleak	Basic: <i>depressed</i> . Causative: causing <i>depression</i> .
Blessed	Caused emotion: happiness for a known reason.
Bliss	Basic: intense happiness. (F, T)
Blithe	Basic: <i>cheerful</i> .
Blue	Basic: sad, mood. (C)
Boldness	Relation: <i>courage</i> .
Bore	Causative: to cause <i>boredom</i> . (F)
Boredom	Complex: mild <i>depression</i> as a result of feeling that one has no goals. (F)
Bother	Causative: to <i>upset</i> .
Brave	Relation: having <i>courage</i> .
Broken-hearted	Caused emotion: <i>heart-broken</i> . (C)
Browned off	Caused emotion: angry or <i>depressed</i> for a known reason.
Buck up	Causative: to <i>cheer up</i> .
Bug	Causative: to <i>irritate</i> .
Buoy up	Causative: to increase <i>confidence</i> or <i>hope</i> .
Burdened	Caused emotion or mood: <i>anxious</i> or <i>depressed</i> for known reasons. (C)
Calm	Generic: not in extreme state of emotion. Causative: to reduce intensity of emotion. (F, C, T)
Caprice	Emotional goal: sudden <i>wish</i> .
Captivate	Causative: to <i>charm</i> .
Care	Caused emotion: fear or sadness for a known reason. (F, T)
Care for	Relation: to have <i>affection</i> for. (F, T)
Carefree	Basic: <i>cheerful</i> . (C)
Careworn	Basic: fearful or sad, mood.
Chafe	Causative: to <i>irritate</i> .
Chagrin	Caused emotion: sadness or anger for a known reason.
Charge	Caused emotion: <i>excitement</i> .
Charm	Causative: to <i>please</i> or to <i>attract</i> . (C)
Cheer up	Causative: to cause happiness in someone previously sad.
Cheered	Caused emotion: to experience happiness, where previously sad, for a known reason. (C)
Cheerful	Basic, happy, mood. (F, C, T)
Cheerless	Basic: sad, mood. (C)
Cherish	Relation: to have <i>affection</i> for. [to look after]
Chill	Causative: to <i>frighten</i> intensely.
Choleric	Basic: angry, mood.
Closeness	Complex: evaluation of oneself as feeling mutual happiness and <i>empathy</i> in relation to someone. (F)
Comfort	Causative: to reduce <i>pain</i> . (C)
Comfortable	Complex: <i>belonging</i> . (C)
Compassion	Complex: <i>pity</i> . (F, C)
Complacent	Complex: happiness from evaluation of one's current state, and, from speaker's point of view, ignoring dangers or difficulties. (F)
Composed	Basic: <i>calm</i> and <i>unworried</i> .
Compunction	Complex: <i>guilt</i> that inhibits action.
Conceit	Complex: <i>pride</i> that the speaker regards as unmerited.
Concern	Caused emotion: fear for a known reason. (F, C)

Concern for	Complex: <i>anxiety</i> or <i>sympathy</i> for someone else. (F, C)
Confident	Complex: a mild happiness as a result of evaluating that one can cope with a situation. (F)
Conscience-stricken	Complex: <i>guilt</i> . (T)
Console	Causative: to reduce someone's <i>sorrow</i> by expressing <i>sympathy</i> . (C)
Consternation	Caused emotion: <i>anxiety</i> for a known reason.
Contempt	Relation: <i>hatred</i> for a known reason. (F, C, T)
Content	Causative: to <i>satisfy</i> . (F, C)
Contentment	Caused emotion: happiness for a known reason, not <i>desiring</i> more. (F, C)
Contrite	Complex: to feel or to express <i>regret</i> about one's actions. (C)
Convivial	Caused emotion: happiness caused by the company of others.
Covet	Emotional goal: to <i>want</i> something that belongs to someone else.
Courage	Relation: control, or lack, of fear in relation to danger. (C) [a lack of an emotion]
Cowardice	Relation: inability to control fear, or actions motivated by it, in relation to danger. (C)
Crabby	Basic: <i>irritable</i> . (C)
Cranky	Basic: <i>irritable</i> .
Crave	Emotional goal: to <i>want</i> .
Craven	Basic: intensely fearful.
Cross	Caused emotion: angry for a known reason. (T)
Crotchety	Basic: <i>irritable</i> .
Crush	Relation: intense immature <i>desire</i> or <i>love</i> .
Curiosity	Emotional goal: <i>desire</i> to know.
Dampen	Causative: to reduce happiness or <i>enthusiasm</i> .
Dander	Basic: anger.
Dash	Complex: <i>self-confident</i> .
Daunt	Causative: to <i>frighten</i> .
Defeated	Complex: <i>depression</i> from an evaluation of oneself as unable to cope. (F)
Deflate	Causative: to cause to feel less happy or less <i>confident</i> . (C)
Degrade	Causative: to <i>humiliate</i> .
Dejection	Caused emotion: <i>depression</i> for a known reason (F, C, T)
Delectation	Caused emotion: <i>pleasure</i> .
Delight	Caused emotion: happiness for a known reason. Causative: to cause to feel happy. (F, C)
Demoralise	Causative: to cause to have less <i>courage</i> or <i>enthusiasm</i> . and to feel <i>apprehension</i> . (T)
Depress	Causative: to cause <i>depression</i> . (C, T)
Depression	Basic: sadness and lack of responsiveness, or psychopathological state including sadness (C, T)
Desire	Emotional goal: to have a goal, which may be sexual, and which if attained causes happiness. (F, C, T)
Desolate	Caused emotion: intense sadness for a known reason. Causative: to cause intense sadness.
Despair	Complex: intense sadness and lack of <i>hope</i> as a result of inability to achieve goals. (F, C, T)
Despise	Relation: to <i>hate</i> . (C)
Despondent	Basic: <i>depressed</i> . (C)
Determined	Emotional goal: having a <i>desire</i> with no intention of allowing oneself to be prevented from achieving it. (C)



Detest	Relation: to <i>hate</i> . (C)
Devoted to	Relation: to <i>love</i> . (F, C, T)
Disaffected	Complex: <i>alienated</i> as a result of <i>dissatisfaction</i> .
Disappoint	Causative: to sadden someone by failing to do something that they <i>wanted</i> (or doing something that they did not <i>want</i> ). (F, C, T)
Disappointment	Emotional goal: sadness caused by failure to achieve goal. (F, C, T)
Disapprobation	Relation: <i>disapproval</i> of.
Disapprove of	Relation: not to <i>approve</i> of. (C)
Discomfit	Causative: to <i>discomfort</i> .
Discomfort	Causative: to cause sadness or <i>embarrassment</i> .
Discomposure	Caused emotion: mild <i>anxiety</i> for a known reason.
Discontent	Emotional goal: mild <i>frustration</i> . (C)
Discourage	Causative: to cause to lose <i>hope</i> or <i>courage</i> . (C) [to try to persuade not to do something]
Disdain	Relation: to lack <i>respect</i> for.
Disenchant	Causative: to cause to lose <i>desire</i> or happiness. (C)
Disfavour	Relation: <i>disapprove</i> of.
Disgrace	Complex: <i>shame</i> . Causative: to <i>shame</i> . (C)
Disgruntled	Caused emotion: <i>irritation</i> for a known reason.
Disgust	Basic emotion. Causative: to cause disgust in someone. (F, C, T)
Dishearten	Causative: to <i>discourage</i> . (C)
Disillusion	Causative: to <i>dampen</i> by revealing the truth. (C)
Dislike	Relation: not to <i>like</i> , or to <i>hate</i> . (F, C)
Dismay	Causative: to <i>discourage</i> . (F, C)
Dispirited	Caused emotion: <i>depressed</i> . (T)
Displease	Causative: to anger. (C)
Disquiet	Causative: to cause <i>anxiety</i> .
Dissatisfied	Emotional goal: <i>frustrated</i> . (C, T)
Distaste for	Relation: <i>dislike</i> .
Distraught	Caused emotion: intense <i>grief</i> , or <i>anxiety</i> for a known reason. (T)
Distress	Caused emotion: to feel sadness or fear for a known reason. Causative: to cause someone to feel sadness or fear. (F, C, T)
Disturb	Causative: to <i>upset</i> . (F, C)
Divert	Causative: to <i>please</i> by distracting from sources of sadness or <i>anxiety</i> .
Doldrums	Basic: sad, mood.
Doleful	Basic: sad, mood.
Dolour	Basic: intense sadness.
Dote on	Relation: to <i>love</i> .
Down	Basic: sad. [also "down in the dumps"]
Downcast	Basic: sad.
Downhearted	Basic: sad. (C)
Dread	Relation: intense fear of someone or something (F, C)
Dreary	Causative: causing <i>boredom</i> or <i>depression</i> .
Dudgeon	Caused emotion: anger for a known reason.
Dull	Causative: causing <i>boredom</i> .
Eager	Emotional goal: strongly <i>desiring</i> to do something (C)
Ease	Causative: to make less <i>anxious</i> .
Ecstatic	Basic: intensely happy. (F, C, T)
Edgy	Basic: <i>anxious</i> . (F)

Elation	Basic: intense happiness. (F, C, T)
Embarrassment	Complex: mild <i>fear</i> or <i>shame</i> as a result of evaluating self in relation to others. (F, C, T)
Embolden	Causative: to cause to feel <i>courage</i> .
Emotional	Generic: feeling or causing emotions. (T)
Empathy	Complex: sharing and understanding the same emotion as someone else as a result of imagining oneself in their situation. (F, C)
Enamour	Causative: to cause <i>love</i> or <i>desire</i> for.
Enchant	Causative: to <i>charm</i> intensely.
Encourage	Causative: to increase <i>courage</i> or <i>hope</i> . (C)
Endear	Causative: to cause <i>liking</i> or <i>love</i> .
Engaging	Causative: causing <i>pleasure</i> or <i>attraction</i> .
Enjoy	Relation: to take <i>pleasure</i> in an activity (F, C)
Enjoyment	Caused emotion: <i>pleasure</i> for a known reason, as a result of an activity. (F, C)
Enliven	Causative: to make happier.
Enmity for	Relation: feeling or expressing <i>hatred</i> . (F, C)
Ennui	Complex: <i>boredom</i> .
Enrage	Causative: to anger intensely.
Enraptured	Caused emotion: intense happiness or <i>attraction</i> for a known reason. (T)
Entertain	Causative: to <i>please</i> someone by an activity.
Enthrall	Causative: to <i>attract</i> or cause intense <i>pleasure</i> . (T)
Enthuse	Causative: to cause to feel <i>enthusiasm</i> . (F, C, T)
Enthusiasm	Emotional goal: strong <i>desire</i> to do things. (F, C, T)
Entice	Causative: to <i>attract</i> , or to get someone to <i>desire</i> to do something.
Entrance	Causative: to <i>attract</i> or to make intensely happy.
Envy	Complex: <i>hatred</i> of someone because one <i>desires</i> some of their properties or possessions. (F, C, T)
Equanimity	Generic: <i>calm</i> in a difficult situation.
Esteem	Relation: to <i>admire</i> .
Estrange	Causative: to cause people to cease to <i>like</i> one another.
Euphoric	Basic: intensely happy. (F, C, T)
Exaltation	Caused emotion: intense happiness for a known reason.
Exasperate	Causative: to anger or <i>frustrate</i> . (C)
Excite	Causative: to cause an emotion or excitement. (F, C, T)
Excitement	Caused emotion: intense happiness in anticipation or experience of events. (F, C, T)
Execrate	Relation: to feel or express <i>hatred</i> .
Exhilarate	Causative: to cause intense happiness. (F)
Exuberant	Basic: happy, mood. (F, T)
Exultant	Caused emotion: feel or express intense happiness for a known reason. (T)
Fancy	Emotional goal: to <i>desire</i> .
Fascinate	Causative: to <i>attract</i> .
Favour	Complex: to <i>prefer</i> .
Fear	Basic emotion. Relation: to feel fear of someone or something. (F, C, T)
Fed up	Basic: sad, mood. Relation: anger in relation to object, or person. (C, T)
Feel for	Complex: to have <i>sympathy</i> for.
Feelings	Generic: emotions or bodily sensations. (F)
Felicity	Basic: happiness.

Fervent	Generic: intense emotions. (T)
Fire	Causative: to <i>inspire</i> .
Flabbergast	Causative: to <i>surprise</i> intensely. (C)
Flush	Generic: sudden feeling of <i>anger</i> or <i>pleasure</i> .
Fluster	Causative: to cause to be <i>nervous</i> .
Fond of	Relation: to <i>like</i> . (C)
Foreboding	Caused emotion: <i>apprehension</i> .
Forgive	Complex: to cease to <i>resent</i> someone who has wronged one. (C)
Forlorn	Complex: sadness from evaluation of self as alone in relation to others.
Fractious	Basic: <i>irritable</i> .
Freak out	Basic: intense <i>excitement</i> or <i>anxiety</i> . [perhaps caused by drugs]
Frenzy	Generic: intense emotion to the point of losing control or of madness. (T)
Fret	Caused emotion: <i>worry</i> .
Friendly	Relation: feeling or expressing a <i>liking</i> for someone. (C)
Frighten	Causative: to cause fear. (F, C, T)
Frisson	Caused emotion: brief experience of <i>excitement</i> or fear.
Frustrate	Causative: to anger someone by preventing a goal or <i>desire</i> from being achieved. (F, C, T)
Frustration	Emotional goal: anger as a result of inability to achieve goal or <i>desire</i> .
Fulfil	Causative: to <i>satisfy</i> . (F, C, T)
Furious	Caused emotion: intensely angry for a known reason. (C)
Gall	Causative: to anger.
Gay	Basic: happy, mood. (F, C)
Glad	Caused emotion: happiness for a known reason. (F, C)
Glee	Caused emotion: happiness for a known reason. (C)
Gloomy	Basic: sad, mood. Causative: causing sadness or <i>depression</i> . (C, T)
Glum	Basic: sad, mood. (C)
Good-humoured	Basic: happy, mood.
Good-tempered	Basic: happy, mood.
Gratify	Causative: to <i>satisfy</i> . (C)
Greed	Emotional goal: an intense <i>desire</i> for something, more than one needs to be <i>satisfied</i> . (F)
Grief(-stricken)	Relation: to feel sadness as a result of loss of someone to whom one is <i>attached</i> . (F, C, T)
Grouchy	Basic: <i>irritable</i> . (C)
Grudge	Complex: <i>resentment</i> for someone, and <i>desire</i> to harm them.
Guilt	Complex: <i>shame</i> as a result of evaluating one's past performance as morally wrong. (F, C, T)
Gusto	Caused emotion: <i>eager enjoyment</i> .
Hanker	Emotional goal: to <i>wish</i> for something.
Happy	Basic emotion. (F, C, T)
Hard feelings	Relation: <i>dislike</i> or <i>hatred</i> .
Hassle	Causative: to <i>annoy</i> .
Hate	Relation: to feel intense disgust towards someone or something. (F, C, T)
Hatred	Relation: intense disgust towards someone or something. (F, C, T)
Heartache	Caused emotion: <i>grief</i> .
Heart-broken	Caused emotion: <i>grief</i> . (C)
Hearten	Causative: to <i>encourage</i> . (C)
Heartsick	Caused emotion: <i>grief</i> . (C)
Heartsore	Caused emotion: <i>grief</i> . (C, T)

Heart-stricken	Caused emotion: <i>grief</i> . (C)
Heated	Caused emotion: angry for a known reason.
Heavy-hearted	Basic: sad. (C)
Helplessness	Complex: <i>depression</i> from evaluation that one is unable to cope with events. (F).
High	Basic: happy, mood. (F, C)
Hilarity	Caused emotion: <i>mirth</i> .
Hold dear	Relation: to be <i>attached</i> to.
Homesick	Emotional goal: <i>longing</i> for home. (C, T)
Hope	Complex: <i>optimism</i> in relation to one's goals. (F, C, T)
Hopelessness	Complex: sadness from evaluation that events in relation to one's goals will not occur. (F, C, T)
Horrify	Causative: to cause <i>horror</i> . (C)
Horror	Caused emotion: intense fear or disgust for a known reason. (C)
Hostile	Relation: feeling <i>enmity</i> for. (F, C, T)
Hubris	Complex: <i>pride</i> which the speaker regards as unmerited.
Huff	Caused emotion: brief anger for a known reason.
Huffy	Basic: <i>irritable</i> .
Humble	Complex: lacking <i>pride</i> as a result of having a low opinion of oneself in relation to others. Causative: to cause to feel <i>humble</i> . (C)
Humiliate	Causative: to cause to feel <i>shame</i> . (C, T)
Humility	Complex: lack of <i>pride</i> from a low opinion of oneself in relation to others. (F).
Hurt	Causative: to cause <i>pain</i> . (F, C)
Hysterical	Generic: intense and uncontrollable emotion. (T)
Idolise	Relation: to <i>love</i> as a result of evaluating other's achievements or characteristics.
Ignominy	Complex: <i>shame</i> .
Ill-at-ease	Basic: <i>anxious</i> , mood. (C)
Ill-humoured	Basic: angry, mood.
Ill-tempered	Basic: angry, mood.
Ill-will	Relation: <i>hatred</i> .
Impassioned	Caused emotion: feeling or expressing intense <i>excitement</i> , anger, or <i>hatred</i> .
Impassive	Generic: without emotion.
Impatient	Emotional goal: <i>irritable desire</i> to do something. (C)
Impulse	Emotional goal: sudden <i>wish</i> .
In love	Relation: <i>love</i> . (C, T)
Incense	Causative: to anger intensely. (C)
Inclination	Emotional goal: <i>wish</i> .
Inconsolable	Caused emotion: having intense sadness for a known reason and that cannot be <i>consoled</i> . (T)
Indifferent	Relation: not <i>caring</i> for.
Indignant	Caused emotion: angry for a known reason. (C, T)
Infatuate	Causative: to <i>attract</i> intensely. (C, T)
Inflame	Causative: to cause intense anger, <i>desire</i> , or <i>hatred</i> .
Infuriate	Causative: to make <i>furiously</i> .
Injure	Causative: to <i>hurt</i> .
Insecure	Basic: <i>anxious</i> , mood. (F, C, T)
Insouciance	Basic: happy, mood.

Inspire	Causative: to <i>enthuse</i> . (T)
Intimacy	Complex: evaluation that self and other feel mutual <i>empathy</i> in relation to one another. (C, T)
Intimidate	Causative: to <i>frighten</i> . (C, T)
Irascible	Basic: intensely angry, mood.
Irate	Basic: angry. (C)
Irk	Causative: to <i>irritate</i> . (C)
Irritable	Basic: mild anger, mood. (F, C, T)
Irritate	Causative: to cause mild anger. (F, C, T)
Jealousy	Complex: <i>hatred</i> for someone who is evaluated as supplanting oneself in relation to an <i>attached</i> person. (F, C, T)
Jittery	Basic: <i>anxious</i> . (C)
Jocund	Basic: happy, mood.
Jolly	Basic: happy, mood.
Jovial	Basic: happy, mood.
Joy	Basic: intensely happy. (F, C, T)
Joyless	Basic: sad. (F, C, T)
Jubilant	Caused emotion: intense happiness for a known reason. (F, C)
Keen	Emotional goal: strongly <i>desiring</i> to do things.
Keen on	Relation: to <i>like</i> .
Kick	Caused emotion: <i>excitement</i> .
Languor	Basic: relaxed mild happiness, mood.
Letcherous	Emotional goal: <i>feeling or expressing lust</i> .
Let down	Causative: to <i>disappoint</i> .
Libidinous	Emotional goal: <i>feeling or expressing lust</i> .
Lighten	Causative: to make less sad or <i>worried</i> .
Light-hearted	Basic: happy, mood. (C)
Like	Relation: to feel happiness in relation to someone or something. (F, C)
Livid	Caused emotion: intensely angry for a known reason. (C)
Loathe	Relation: to <i>hate</i> intensely. (C)
Lonely	Complex: sadness from evaluation of self as not in emotional relation with others. (F, C, T)
Longing for	Emotional goal: feeling sad as a result of <i>unfulfilled desire</i> for someone or something. (F, C, T)
Lovable	Causative: causing <i>love</i> . (F, C, T)
Love	Relation: to experience intense happiness in relation to object, or person, who may also be object of sexual <i>desire</i> . (F, C, T)
Lovesick	Emotional goal: state of <i>longing for attached</i> person, with possible adverse effect on health. (C, T)
Low	Basic: sad, mood. (C)
Lust	Emotional goal: intense <i>desire</i> for sex. (F, C, T)
Mad	Caused emotion: angry for a known reason. (F, C)
Madden	Causative: to anger. (F, C)
Malice	Emotional goal: <i>desire</i> to harm someone. (F, C)
Mawkish	Caused emotion: intensely <i>sentimental</i> .
Meekness	Relation: lack of anger or aggression in situations likely to cause them.
Melancholic	Basic: sad, mood. (F, C)
Merry	Basic: happy, mood. (C, T)
Miserable	Basic: sad, mood. (F, C, T)
Miffed	Caused emotion: mild anger for some reason.
Mirth	Caused emotion: happiness caused by humour.

Miss	Relation: to feel sadness as a result of separation from <i>attached</i> person or thing.
Mollify	Causative: to make less angry.
Moody	Generic: sad or <i>irritable</i> moods. (F)
Mope	Basic: to be in a sad mood.
Mortify	Causative: to cause intense <i>shame</i> . (C)
Mourn	Relation: to feel or to express <i>grief</i> . (F, C)
Mournful	Basic: sad, mood. (F, C)
Move	Causative: to cause to feel an emotion. (C)
Nark	Causative: to <i>irritate</i> .
Nausea	Basic: disgust. (C)
Nauseate	Causative: to disgust. (C)
Need	Emotional goal: to have a goal which if attained causes happiness (or makes good deficiency). (F)
Needle	Causative: to <i>irritate</i> .
Nervous	Basic: <i>anxious</i> . (F, C, T)
Nettle	Causative: to <i>irritate</i> .
Nostalgia	Complex: to feel mildly sad as a result of remembering one's happiness in past situation. (C, T)
Nuisance	Causative: cause of <i>irritation</i> .
Obnoxious	Causative; causing disgust or <i>hatred</i> .
Odium	Relation: <i>hatred</i> .
Offend	Causative: to anger or disgust. (C)
On-edge	Basic: <i>anxious</i> .
Oppress	Causative: to <i>depress</i> or <i>worry</i> .
Opprobrium	Complex: <i>shame</i> .
Optimism	Complex: <i>happiness</i> from positive evaluation of events in relation to one's goals. (C, T)
Outrage	Causative: to <i>offend</i> intensely. (C, T)
Overconfident	Complex: <i>confident</i> to a degree judged to be excessive by the speaker. (C)
Overjoyed	Caused emotion: intense happiness for a known reason. (C, T)
Overwhelm	Causative: to cause an intense and uncontrollable emotion. (C, T)
Pacify	Causative: to make <i>peaceful</i> .
Pain	Caused emotion: sadness or fear for a known reason. [also bodily sensation] Causative: to cause sadness or fear. (F, C)
Panic	Caused emotion: intense uncontrollable fear for a known reason. Causative: to cause intense uncontrollable fear. (C, T)
Panicky	Basic: intense fear, mood. (C, T)
Partial to	Relation: <i>liking</i> .
Passion	Generic: emotion. (F, C)
Passionate	Generic: feeling or expressing intense emotions. Emotional goal: <i>amorous</i> . (C)
Patience	Emotional goal: lack of <i>frustration</i> in a situation likely to cause it. [lack of an emotion]
Patriotic	Relation: <i>love</i> of country. (T)
Peaceful	Basic: mild happiness, mood; not in an intense state of emotion. (F, C, T)
Peeve	Causative: to <i>irritate</i> . (C)
Penitent	Complex: <i>repentant</i> .
Pensive	Basic: sad, mood, having sad thoughts. (F)
Perk up	Causative: to <i>cheer up</i> .
Perplex	Causative: to <i>worry</i> as a result of confusion.

Perturb	Causative: to <i>frighten</i> .
Pessimism	Complex: lack of <i>hope</i> from negative evaluation of events in relation to one's goals. (C)
Pester	Causative: to <i>irritate</i> by continual requests, etc.
Petrify	Causative: to cause intense and paralysing fear. (C)
Petulant	Basic: angry, mood.
Pine for	Emotional goal: to <i>long</i> for, with possible adverse effect on health. (C)
Pique	Causative: to <i>irritate</i> .
Pissed	Caused emotion: to feel angry for a known reason (in American English)
Pissed-off	Caused emotion: to feel angry or sad for a known reason (C)
Pity	Complex: sadness for someone from an evaluation of their situation in relation to one's own. (C)
Placid	Basic: <i>peaceful</i> . (C)
Plague	Causative: to <i>pester</i> .
Please	Causative: to cause happiness. (F, C, T)
Pleasure	Caused emotion: happiness for a known reason. (F, C, T)
Poignant	Causative: causing sadness or <i>pity</i> . (T)
Prefer	Complex: evaluation that someone or something is more satisfying than other instances.
Pride	Complex: happiness with self as a result of a high opinion of self in relation to others. (F, C, T)
Provoke	Causative: to cause emotion.
Put off	Causative: to cause mild disgust.
Qualm	Caused emotion: brief feeling of <i>anxiety</i> or disgust.
Queasy	Basic: mild disgust.
Quiet	Basic: <i>peaceful</i> . (F)
Radiant	Basic: intense happiness. (T)
Rage	Caused emotion: intense anger for a known reason. (F, C)
Rancour	Relation: <i>hatred</i> or anger for someone.
Rankle	Causative: to cause (to be recalled with) anger.
Rapture	Basic: intense happiness. (F)
Ravish	Causative: to cause intense <i>pleasure</i> .
Reassure	Causative: to reduce <i>apprehension</i> . (C)
Regale	Causative: to <i>entertain</i> .
Regard for	Relation: to <i>like</i> .
Regret	Complex: sadness as a result of evaluating one's past action as harmful or wrong in relation to one's current standards. (C, T)
Rejoice	Caused emotion: to feel (or to express) intense happiness for a known reason.
Relax	Causative: to cause to cease being <i>tense</i> . (F, C)
Relief	Caused emotion: happiness as a result of something that brings to an end fear or sadness. (F, C, T)
Relieve	Causative: to cause <i>relief</i> . (F, C, T)
Relish	Caused emotion: to experience happiness as a result of an activity.
Reluctance	Emotional goal: lacking <i>enthusiasm</i> .
Remorse	Complex: sadness as a result of evaluating one's past performance as morally wrong. (F, C)
Repel	Causative: to cause disgust.
Repentant	Complex: <i>remorse</i> with <i>desire</i> to make amends. (C)
Repose	Basic: <i>composed</i> .
Repugnance	Relation: <i>hatred</i> .

Resent	Complex: to feel anger or <i>hatred</i> for someone from a belief that they have harmed one. (F, C, T)
Resignation	Complex: sadness as a result of accepting future <i>pain</i> to oneself, and deciding either not to pursue its avoidance or that such a goal is impossible.
Respect	Relation: to judge that someone deserves to be <i>admired</i> (F, C)
Revel in	Caused emotion: to take intense <i>pleasure</i> in an activity.
Revere	Relation: to <i>admire</i> intensely. (C)
Revolt	Causative: to cause intense disgust.
Rile	Causative: to <i>irritate</i> .
Roil	Causative: to <i>irritate</i> .
Romantic	Emotional goal: <i>amorous</i> . (T)
Rueful	Caused emotion: feeling sadness for a known reason.
Sad	Basic emotion. (F, C, T)
Sadden	Causative: to cause sadness. (F, C, T)
<i>Sang-froid</i>	Complex: <i>courage</i> and <i>self-confidence</i> in dangerous or difficult situations.
Sanguine	Complex: having <i>optimism</i> .
Satisfy	Causative: to <i>please</i> someone by an action that meets their <i>desires</i> . (F, C)
Scandalise	Causative: to cause intense anger or disgust in someone by violating their standards.
Scare	Causative: to <i>frighten</i> . (F, C)
<i>Schadenfreude</i>	Caused emotion: <i>pleasure</i> from observing others' misfortunes.
Scorn	Relation: to feel (or to express) anger. (C)
Secure	Complex: <i>confident</i> .
Seethe	Caused emotion: to be intensely angry for a known reason. (T)
Self-assured	Complex: <i>self-confident</i> .
Self-confident	Complex: <i>confidence</i> in self as able to cope.
Self-conscious	Complex: <i>anxiety</i> caused by awareness of one's self in relation to others. (C)
Self-disgust	Complex: disgust with self as a result of a low evaluation of self.
Self-esteem	Complex: <i>pride</i> . (F)
Self-hatred	Complex: <i>self-disgust</i> .
Self-love	Complex: <i>pride</i> .
Self-pity	Complex: <i>pity</i> for self, judged to be excessive by speaker. (C, T)
Self-possessed	Complex: <i>self-confident</i> .
Self-satisfaction	Complex: <i>conceited</i> . (C)
Sensuous	Caused emotion: <i>pleasure</i> in sexual behaviour. Causative: to cause sexual <i>desire</i> . (T)
Sentiment	Generic: emotion.
Sentimental	Caused emotion: excessive <i>pleasure</i> in observing mildly <i>poignant</i> situations. (F, C, T)
Serene	Basic: <i>peaceful</i> . (F, C)
Settle	Causative: to <i>calm</i> .
Sexy	Emotional goal: having sexual <i>desire</i> . Causative: causing sexual <i>desire</i> . (F)
Shake	Causative: to cause sudden <i>insecurity</i> . (C)
Shame	Complex: <i>self-disgust</i> as a result of evaluation of self in relation to own and others' standards. Causative: to cause such <i>self-disgust</i> . (F, C)
Shock	Causative: to cause intense <i>surprise</i> . (C, T)
Shook-up	Caused emotion: feeling anger or fear for a known reason. (C)



Shy	Complex: <i>self-conscious</i> and <i>embarrassed</i> . (F, C, T)
Sick	Caused emotion: disgust for a known reason.
Sick-at-heart	Caused emotion: sad for a known reason. (C)
Sicken	Causative: to cause disgust. (C)
Smug	Complex: <i>conceited</i> . (C)
Solace	Causative: to <i>comfort</i> .
Sombre	Basic: sad, mood.
Soothe	Causative: to make less angry or <i>anxious</i> . (C)
Sore	Caused emotion: angry for a known reason. (C)
Sorrow	Caused emotion: sadness for a known reason. (F, C, T)
Sorry	Caused emotion: sad for a known reason. (F, C, T)
Sorry for	Complex: to <i>pity</i> . (F, C, T)
Soulful	Basic: sadness, mood. (T)
Spirits	Generic: happiness or sadness.
Spite	Emotional goal: <i>desire</i> to harm or to <i>annoy</i> someone. (C, T)
Splenic	Basic: intensely angry, mood.
Startle	Causative: to <i>surprise</i> .
Stew	Basic: <i>anxious</i> .
Stir	Causative: to cause intense emotion.
Stress	Causative: to cause extreme <i>anxiety</i> (or bodily sensation such as pain.) (F)
Stun	Causative: to <i>surprise</i> intensely.
Stupefy	Causative: to <i>surprise</i> intensely.
Suffer	Caused emotion: to feel <i>pain</i> . (C)
Sulk	Basic: to be angry (in silence), mood.
Sullen	Basic: angry (in silence), mood.
Surprise	Causative: to cause a sudden unexpected onset of an emotion. (F, C, T)
Suspense	Caused emotion: <i>anxiety</i> prolonged for a known reason. (C)
Sympathy	Complex: sadness for (and understanding of) someone as a result of imagining oneself in their situation. (F, C, T)
Take to	Relation: to come to <i>like</i> .
Tantalize	Causative: to cause an unsatisfiable <i>desire</i> .
Tantrum	Caused emotion: brief intense display of anger for a known reason.
Tease	Causative: to <i>annoy</i> , especially by jokes or by being <i>frustrating</i> .
Tedious	Causative: causing <i>boredom</i> .
Temper	Caused emotion: anger for a known reason.
Tenderness	Relation: <i>love</i> or <i>sympathy</i> for someone. (F, C)
Tense	Basic: <i>anxious</i> . (F, C, T)
Terrify	Causative: to cause <i>terror</i> . (F, C, T)
Terror	Caused emotion: intense fear for a known reason. (F, C, T)
Testy	Basic: <i>irritable</i> .
Tetchy	Basic: <i>irritable</i> .
Thankful	Caused emotion: feeling <i>relief</i> . (C)
Threatened	Caused emotion: to feel fear as a result of a known danger. (C)
Thrill	Caused emotion: intense <i>excitement</i> for a known reason.
	Causative: to cause <i>excitement</i> . (F, C, T)
Timid	Basic: mild fear, mood. (C)
Titillate	Causative: to cause mild <i>excitement</i> or <i>lust</i> .
Togetherness	Complex: <i>closeness</i> .
Torment	Caused emotion: <i>anguish</i> .
	Causative: to cause <i>anguish</i> , anger, or bodily pain. (C)
Tortured	Caused emotion: <i>anguish</i> . (T)

Touch	Causative: to cause someone to feel happiness or sadness. (C, T)
Touchy	Basic: <i>irritable</i> . (C, T)
Tragic	Causative: causing intense sadness. (T)
Tranquil	Basic: <i>peaceful</i> . (F)
Transport	Causative: to <i>delight</i> .
Treasure	Relation: to be intensely <i>attached</i> to.
Trepidation	Caused emotion: <i>apprehension</i> .
Triumphant	Complex: to feel or to express intense <i>pride</i> in achieving a difficult goal. (C, T)
Trouble	Causative: to cause <i>anxiety</i> or <i>annoyance</i> . (C, T)
Try	Causative: to <i>worry</i> or <i>annoy</i> .
Umbrage	Caused emotion: anger for a known reason.
Uncomfortable	Complex: to feel <i>shy</i> or <i>embarrassed</i> . (C)
Unconcerned	Caused emotion: not <i>worried</i> in a situation in which one is likely to be.
Unconfident	Complex: lacking in <i>confidence</i> .
Uneasy	Basic: <i>anxious</i> . (C, T)
Unemotional	Generic: lacking emotion. (T)
Unfulfilled	Emotional goal: sadness or <i>frustration</i> as a result of failing to achieve goals. (C)
Unhappy	Basic: sad. (F, C, T)
Unnerve	Causative: to <i>frighten</i> or to cause to lose <i>confidence</i> . (T)
Unsatisfied	Emotional goal: sadness or <i>frustration</i> as a result of failure to achieve a goal.
Unsettle	Causative: to <i>upset</i> .
Unworried	Basic: not <i>worried</i> .
Upset	Caused emotion: sadness, anger, or disgust for a known reason. Causative: to cause sadness, anger, or disgust. (F, C, T)
Uptight	Basic: angry, mood. (F, C)
Vanity	Complex: <i>conceit</i> .
Vengefulness	Complex: <i>hatred</i> for someone and <i>desire</i> to harm them in return for harm they have done to oneself. (C, T)
Venerate	Relation: <i>idolise</i> .
Venomous	Emotional goal: feeling intense <i>malice</i> .
Vex	Causative: to <i>irritate</i> .
Want	Emotional goal: to have a goal, which if attained causes happiness. (F, C)
Warm(-hearted)	Relation: happy in relation to others. (F, C)
Warm to	Relation: to become happy in relation to someone or something. (F, C)
Weepy	Basic: sad, mood, prone to tears. (T)
Whim	Emotional goal: sudden <i>wish</i> .
Wild	Caused emotion: anger for a known reason.
Wish	Emotional goal: to have a goal, which may be unrealistic but which if attained causes happiness.
Wistful	Basic: mild sadness, mood.
Woe(-stricken)	Caused emotion: sad for a known reason.
Wonder	Caused emotion: <i>surprise</i> , <i>awe</i> , or <i>admiration</i> . (F, C)
Worry	Caused emotion: <i>anxiety</i> for a known reason. Causative: to cause <i>anxiety</i> . (F, C, T)
Worship	Relation: <i>Idolise</i> .
Wound	Causative: to <i>hurt</i> .
Wrath	Caused emotion: intense anger for a known reason.
Wretched	Basic: intensely sad.

Yearn	Emotional goal: <i>long</i> for someone or something. (C, T)
Zealous	Emotional goal: strongly <i>desiring</i> to do things.
Zestful	Basic: happy, mood. (T)

## APPENDIX 2

## Words Included in the Three Corpora, but that do not Denote Emotions

We have listed here those words in the three corpora that are not normally taken to denote emotions. Although most of these words have meanings that embrace much more than emotions, we have given analyses of them to bring out the relations they may have to emotional states.

Accept	To receive someone as a correlate of <i>liking</i> . (C)
Aggression	A form of behaviour produced by anger. (F)
Alert	A mental or bodily state. (F)
Anticipation	A cognitive state that may cause an emotion. (F)
Apologetic	A manner that expresses <i>sorrow</i> . (C)
Argumentative	A state that may be caused by <i>irritability</i> . (C)
Arousal	A mental or bodily state. (F, C)
Benevolent	An aspect of behaviour correlated with <i>liking</i> . (C)
Boisterous	Form of behaviour that may be produced by happiness. (F)
Communication	A form of action that may concern emotion. (F)
Confusion	A state that may create <i>anxiety</i> . (F)
Control	A property of behaviour that may concern an emotion. (F)
Criticise	To communicate a negative judgement, perhaps motivated by an emotion. (F)
Crying	A bodily expression of sadness. (F)
Cynical	A property of behaviour arising from a low view, or <i>hatred</i> of humanity. (F)
Deep	A property of an emotion: intense. (F)
Defiant	A <i>fearless</i> expression of refusal to submit. (T)
Dependent	Inability to do something without help from someone. (C)
Distrust	To lack belief in the sincerity or reliability of others. (F)
Expectation	A cognitive attitude that may cause an emotion. (F)
Expressive	A characteristic of behaviour or personality that often concerns the display of emotions. (F)
Frown	A facial expression of anger. (F)
Fun	An activity causing happiness. (not in F, C, or T)
Gentleness	An aspect of behaviour that may be caused by <i>sympathy</i> . (F)
Giving	An action that may be caused by <i>affection</i> . (F)
Hardness	The property of being incapable of experiencing or expressing emotion. (F)
Heart	Used figuratively to denote the ability to feel emotion. (F)
Helping	A form of action that may be caused by <i>sympathy</i> . (F)
Hyperactive	A property of behaviour or personality. (F)
Kind	An aspect of behaviour caused by <i>sympathy</i> . (F, C)
Laughter	A vocal expression of <i>amusement</i> . (F)

Lively	An aspect of behaviour associated with happiness. (C)
Loyalty	An aspect of behaviour in relation to someone that may be motivated by <i>affection</i> . (F)
Meditative	Thoughtful. (F)
Mixed	A property of emotions. (F)
Mixed-up	A property of a person who is emotionally confused. (C)
Murderous	An intense emotion, as if intending to commit murder. (T)
Negative	A way of characterising emotions other than happiness. (F)
Obsession	An idea that dominates thinking perhaps for emotional reasons. (T)
Outgoing	An aspect of behaviour concerning emotional expression. (F)
Passive	Unresponsive. (F)
Positive	A way of characterising emotions concerning happiness. (F)
Protective	An aspect of behaviour towards someone, perhaps motivated by <i>affection</i> . (F)
Reaction	An action in response to something. (F)
Reject	To refuse to accept, perhaps from <i>dislike</i> . (F, T)
Repulse	To rid from one's presence, perhaps from <i>disgust</i> . (F)
Responsibility	The property of acting according to one's duties and obligations. (F)
Responsive	The property of being affected by events, including those that cause emotions. (F)
Self-concept	A component of the mind (that concerns complex emotions). (F)
Sensitive	The property of being (over-)affected by events, including those that cause emotions. (F, C)
Sharing	An action that may be caused by <i>affection</i> . (F)
Sincerity	The property of expressing one's true feelings and thoughts. (F)
Smiling	A facial expression of happiness. (F)
Softness	The property of too easily experiencing or expressing emotion. (F)
Solemn	Expressing <i>sorrow</i> . (C)
State	Used to refer to a general emotional condition of anger, fear or <i>hatred</i> . (F)
Strong	Able to exert considerable force, to withstand stressful emotions, having <i>courage</i> . (F)
Stubborn	The trait of proceeding on a course of action in the face of reasonable objections to it, unwilling to change one's mind. (F)
Success	A positive outcome, especially in relation to a goal. (F)
Suicidal	Intending to commit suicide. (T)
Suspicious	Regarding people or events with distrust. (C)
Tears	Produced by crying. (F)
Thinking	A cognitive process. (F)
Tired	A bodily state that may be associated with emotion. (F)
Trust	A belief in the sincerity and reliability of others that may arise from <i>attachment</i> or <i>empathy</i> . (F)
Turbulent	A possible property of emotional life, given to intense and rapidly changing emotions. (F)
Uncertain	A cognitive state that may cause <i>anxiety</i> . (F)
Uncontrollable	A possible property of an emotion. (F)
Understanding	A cognitive state that may be associated with <i>empathy</i> . (F)
Unstable	Lacking in emotional equilibrium. (F, T)
Vehement	A forceful manner of expression, as in anger. (T)
Violence	A form of behaviour that may be caused by anger. (F, C, T)
Vulnerable	Susceptible, perhaps to emotion. (F, T)
Weak	Lacking in strength or <i>courage</i> . (F)
Withdrawn	Not entering into emotional relations. (F)