

The Referential Structure of the Affective Lexicon

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A set of approximately 500 words taken from the literature on emotion was examined. The overall goal was to develop a comprehensive taxonomy of the affective lexicon, with special attention being devoted to the isolation of terms that refer to emotions. Within the taxonomy we propose, the best examples of emotion terms appear to be those that (a) refer to *internal, mental* conditions as opposed to *physical or external ones*, (b) are clear cases of *states*, and (c) have *affect* as opposed to *behavior or cognition* as a predominant (rather than incidental) referential focus. Relaxing one or another of these constraints yields poorer examples or nonexamples of emotions; however, this gradedness is not taken as evidence that emotions necessarily defy classical definition.

INTRODUCTION

What should a theory of emotion be a theory of? What is to count as an emotion? Emotions have been widely viewed as intimately tied to facial expressions (e.g., Ekman, 1982), action tendencies (e.g., Frijda, 1987), physiological activity (e.g., Ax, 1953), and subjective experience (e.g., de Rivera, 1977). Yet the question remains, what are these things that have these facets? One reason for wanting an answer to this question is that an answer would serve to identify a common set of entities (i.e., emotions) that should be of concern to any theory of emotion. Thus, in this paper, we try to address the question in a way that is not specific to our own theory of emotion (Ortony, Clore, & Collins, in press) or to any other particular theory.

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The determination of what an emotion is, is a notoriously difficult problem. Emotions, of course, are not linguistic things. However, the most convenient nonphenomenological access we have to them is through language. Thus one reasonable way to separate emotions from nonemotions is to consider what are the referents of putative emotion words. Even in the absence of a generally accepted definition of emotion, it is apparent that many of the hundreds of words that have been included in studies of affect and emotion do not refer to emotions at all. Our goal, therefore, is to develop a principled way of isolating from the larger pool of affective words, words that refer specifically to emotions. To accomplish this goal, we examined the structure of the affective lexicon as a whole. Beginning with a list of approximately 500 words, many of which have at one time or another been used by psychologists and others in their studies of emotion (including Averill, 1975; Bush, 1973; Dahl & Stengel, 1978; Davitz, 1969; Russell, 1980, and others), we undertook an analysis of the reference of each term. From this effort a system of distinctions gradually emerged. We shall discuss these distinctions, and try to show how they relate to the structure of the affective lexicon more generally. The words that were examined are listed in the Appendix, which shows how they were assigned to the different categories in the taxonomy that we shall describe.

We should emphasize that the research we describe, the development of a taxonomy of affective conditions, is not empirically based but is better considered as an exercise in componential analysis (e.g., Goodenough, 1956; Lounsbury, 1956). The focus is on classes of words for the purposes of devising a general taxonomy of the conditions referred to by terms in the affective lexicon, rather than on detailed analyses of individual concepts. Our analysis is intended as a kind of conceptual brush-clearing that we think should precede attempts to build systematic accounts of the emotions. The taxonomy of the affective lexicon that we shall propose has also been investigated using empirical methods (see Clore, Ortony, & Foss, in press), some of the results of which are mentioned in passing in the Conclusion. However, our focus in this article is on the logic of the taxonomy that we propose and on the psycholinguistic justification for it. First, however, we shall discuss three preliminary issues. One of these concerns the question of why some sort of conceptual analysis of the kind we are proposing is needed at all. The second issue concerns the question of whether or not it is necessary to view emotions as prototypes that resist conventional definitions. Finally, we shall consider the effect of different linguistic contexts on the perceived emotional content of words in the affective lexicon.

The Need for Conceptual Analysis

Psychologists have generally approached the task of specifying the structure of emotion by collecting data. Frequently they have applied multidimensional scaling or factor analysis to judgments about emotion words or other

affective terms in their attempts to discover the underlying structure (e.g., Averill, 1975; Davitz, 1969; Russell, 1980). However, there are dangers in the premature use of such approaches. Valid conclusions from scaling studies require that the items in the stimulus set do indeed belong to the domain being studied, and are appropriately sampled. Yet, in scaling studies of emotions, one rarely finds justifications of item selection procedures with respect to these requirements. For example, Russell (1980) concluded from a multidimensional scaling analysis of 28 terms that Arousal is one of two dimensions of affective states (the other being a Pleasantness-Unpleasantness dimension). We do not for a moment doubt the truth of this conclusion. But, even a casual perusal of the words used by Russell raises serious questions about whether or not they really are emotion terms at all (many people do not consider *sleepy* to be an emotion). Furthermore, the disproportionate representation of terms such as "excited," "aroused," "relaxed," "droopy," and "tired" in the stimulus set virtually guarantees that a dimension of Degree of Arousal will be discovered, regardless of its diagnosticity in the domain as a whole.

One of the most extensive examinations of affective words undertaken in recent years is that of Averill (1975) (although see also, for example, Bush, 1973, and Dahl & Stengel, 1978). Averill focused his attention on nearly 600 words judged to have "emotional connotations," selected on this basis primarily from the approximately 18,000 person descriptors classified by Allport and Odbert (1938). One of Averill's goals was to develop a "semantic atlas" in order to map the domain that any comprehensive theory of emotion must cover. We too are motivated by this goal. The words that Averill and other researchers have investigated comprise what we call the "affective lexicon." The affective lexicon includes not only words that *refer* directly to emotions, but many other words, which, while not referring to emotions, implicate them in a variety of ways. In this article we suggest some components that may allow the imposition of a richer structure on the affective lexicon, and that provide, as a by-product, a principled way of distinguishing words that refer to emotions from words that in fact refer to other kinds of affective conditions. We should note here that although the terms "affect" and "emotion" are often used synonymously in the psychological literature, we think it important to make a distinction between them. Affect is a broader construct than emotion. Any valenced judgment or condition implicates affect, whereas emotions are more specific. Consequently, our use of the word "affect" entails that all emotions are affective conditions, but not that all affective conditions are emotions. So, for example, we consider a person's preferring one restaurant over another to be an affective judgment, although not necessarily an emotional one. Similarly, the judgment that a person is unfriendly is affective, although neither the judgment that a person is unfriendly nor the unfriendliness itself is an emotion.

Averill acknowledges that not all of the words included in his analysis refer to emotions, arguing that "any dividing line between emotional and unemotional concepts is necessarily vague and somewhat arbitrary" (Averill, 1975, p. 6). We think it possible, however, that while subjects' judgments may not reveal sharp boundaries between emotional and non-emotional states, one can articulate nonvague and nonarbitrary criteria, even though the application of these criteria to particular cases may sometimes be difficult. For example, we agree with Averill that words such as "angry," "fearful," and "grieving" denote emotional states. On the other hand, we think that words like "tearful," "suicidal," "violent," "weeping," and "blushing," all of which were rated as very "emotional" by Averill's subjects, do not denote emotions, although certainly they have obvious connections to emotions. But, if words like "tearful," "violent," and "blushing" are not emotions, why did subjects in Averill's study rate them as such? One possibility is that because subjects were not sensitive to the distinction between referring to an emotion and implicating an emotion, they may have responded to terms like "blushing," which strongly implicate emotions, as though they denoted emotions.

Emotions as Prototypes

The argument has been made (Fehr & Russell, 1984) that it is more profitable to view individual emotions and the concept of emotion in general as fuzzy sets rather than as concepts classically definable in terms of necessary and sufficient features. This may or may not be true, but certainly it is not self-evident. It therefore seems worthwhile to evaluate the arguments for the conclusion that emotions are not classically definable. The reasons for this claim are several. First, Fehr and Russell observe that neither philosophers nor psychologists have been able to adduce satisfactory classical definitions, an outcome that would be expected if in fact such definitions were not possible. Second, they argue that experimental results reveal that emotion concepts show graded membership functions, with some instances appearing to be better examples than others. Finally, they report experimental results showing that people do not agree about whether certain cases (peripheral examples) are or are not members of the category to which they allegedly belong.

These arguments, however, are far from compelling. First, the observation that philosophers and psychologists have so far failed to specify adequate definitions of emotion(s) does not establish that the goal is impossible. It does support the contention that the problem is very difficult, but such a conclusion is as uninteresting as it is undeniable. In fact, there have been serious attempts to provide definitions for a number of emotions, most notably by Wierzbicka (1972, 1973). Although there has been some criticism of her analysis of the word "afraid" (Pulman, 1983), we are unaware of

any systematic rebuttal of her proposals, either by those advocating the impossibility of such definitions, or by anyone else. The two empirically-based arguments in favor of the fuzzy concept view of emotion are equally unconvincing in establishing the impossibility of defining emotions. The first of these is that subjects tend to judge some examples as being better than others (the *gradedness* argument). The second is that subjects often cannot agree as to whether some particular (putative) examples are or are not members of the category of which they are supposedly members (the *adjudication* argument). These arguments are the standard approach of cognitive psychologists seeking to establish that certain common concepts cannot be classically defined, but each argument is suspect. As far as the demonstration of a graded membership function is concerned, Armstrong, Gleitman, and Gleitman (1983) have shown that in fact this is also a characteristic of some classically definable concepts such as "odd number," and Barsalou (1987) has argued persuasively that it is a characteristic of all concepts. Accordingly, the fact that subjects in experiments judge, for example, *fear* to be a better example of an emotion than, say, *inspired* does not entail that emotions cannot be defined in classical terms.

Nor need the fact that subjects sometimes have a problem adjudicating instances commit us to such a conclusion either. In order to decide whether some putative exemplar is or is not a member of some category, two important pieces of information are needed. First, if there *do* exist necessary and sufficient conditions of category membership, one needs to know what they are, that is, one needs to know by virtue of what properties something qualifies as a member of the category in question. Second, in addition to knowing what the criteria for category membership are, one needs to know whether or not the putative example *has* the relevant properties. Failure to agree that something is a member of some category, therefore, does not establish that the category does not have defining features. It could just as well be taken as establishing different degrees of ignorance between judges, or different beliefs about what properties the putative examples possess. This is obvious if one considers a somewhat different domain. Suppose, for example, that subjects are required to decide whether the number 356,489,132,017 is or is not a prime number. Failure to agree would not entail that the category of prime number cannot be defined. It would merely establish that subjects did not know (and could not compute within a reasonable time) whether or not the candidate had the properties that are required for its inclusion in the set of primes.

The point of these arguments is to show that the absence of an accepted definition and the existence of gradedness data and adjudication disagreements does not mean that we have to conclude that emotions are not susceptible to classical definitions—maybe they are, maybe they are not. But the arguments and empirical results that have been marshaled in favor of the

claim that they are not classically definable simply fail to lead to their intended conclusion. In our attempt to organize emotions, mental states, and other conditions into some kind of coherent structure, we readily admit that people usually judge some emotions to be better examples than others, but this does not preclude the possibility that there exist criteria for category membership, even though such criteria may be difficult to specify or to apply. While we see no compelling reason, as yet, to embrace the prototype view, we do not necessarily want to accept the classical view of necessary and sufficient conditions with which it is usually contrasted. It may be that ultimately some hybrid account of category representation will prove capable of accommodating the central aspects of both accounts (Medin & Ortony, in press).

Effects of Linguistic Context

There is an important difference between the two principal linguistic contexts in which putative emotion words commonly appear—those of *being* something and of *feeling* something. The difference is that the *feeling* context can endow nonemotion words with emotional import whereas the *being* context does not affect the emotional import of words. For example, a nonemotion term like “abandoned” (understood in the sense of “forsaken”) can be used to refer to an emotional state when employed in the context of *feeling* (“feeling abandoned”), whereas in the context of *being* (“being abandoned”), it can not (see also, Ortony, in press; Ortony & Clore, 1981).

Failure to notice the difference between the *feeling* and *being* contexts has tended to lead to overinclusive lists of emotion terms. *Being angry* is an emotion, but *being abandoned* is not, yet most of the larger lists of emotion words include both “angry” and “abandoned.” We should emphasize that we do not want to deny that “*feeling* abandoned” refers to some kind of emotional state. Our point is that “*being* abandoned” does not. Moses was abandoned but this was not a fact about a psychological state of Moses at all, let alone about an emotional one. What the linguistic context *feeling* does is to smuggle in psychological and affective properties that do not necessarily belong to the state in question, so that words are more likely to seem to refer to emotions when considered in the *feeling* form than when considered in the *being* form. For adjectives that are good examples of emotions, both forms clearly refer to emotions (for example, both “*feeling* angry” and “*being* angry” unequivocally refer to emotions).

The problem is that the *feeling* form is an elliptical way of expressing a more complex idea. Words and phrases referring to nonpsychological conditions such as *being abandoned* can be used to refer to emotional states such as *feeling abandoned* because language users employ inference rules to get from one to the other. One of these is a general rule for ellipsis that has something like the following form:

(1) to feel *x* = to experience the feelings typically associated with being *x*

This rule suggests that *feeling* something or other focuses attention on the phenomenological experience of being in certain sorts of situations. Thus references to *feeling* something or other are particularly informative when the situation in question is not itself an emotional state. This is because terms that refer directly to emotions already embody, at least implicitly, some reference to the phenomenological experience, so that the application of the rule is largely redundant. In contrast, when the underlying state is not an emotion (for example, when it is a state such as being abandoned), the rule serves to capture the experiential (often emotional) implications of being in that state, implications that the context of *feeling* helps to make salient. In such cases, a second, emotion-specific, rule of metonymy is required:

(2) the feelings typically associated with being *x* = the emotions one has when
 (a) one believes that one is *x*, and
 (b) one cares that one is *x*.

Thus, Rule (1) tells us that to *feel abandoned* is “to experience the feelings typically associated with being abandoned,” and by Rule (2), this is “to experience the emotions one has when one believes that one is (has been) abandoned and cares that one is (has been) abandoned.” And this suggests that the emotional content of *feeling abandoned* is contained not in the *abandoned* part, but in the *feeling* part, presumably by virtue of the inferences about *caring* that it licenses.¹

What we have said so far suggests that when a person reports feeling abandoned, the function of the word “abandoned” is not to identify an emotion of abandonment but rather to report the occasion or cause of some emotion or emotions of the kind that one might expect an abandoned person who cared about it to experience. Exactly what emotions people who feel abandoned typically experience is not the issue. They might experience anger, fear, hurt feelings, resentment, sadness, or a phenomenologically unique experience for which the language offers no alternative to *feeling abandoned*. In the latter case, it might be that what is experienced is a unique pattern of other emotions. But, whatever it is, the general point is that whereas with adjectival forms of genuine emotion words, one can report an emotion by saying “I am *x*,” this is not possible with words like “abandoned.”

¹ It is relatively easy to specify similar rules that cover other cases such as *looking x* and *acting x*, as well as accommodating other senses of “feel” and “feel like,” as in “feeling hungry” or “feeling like going to the movies.” However, the specification of such rules is not relevant to the present undertaking.

A TAXONOMY OF AFFECTIVE CONDITIONS

Our discussion to this point has tried to establish that words like “abandoned” do not refer to emotions. This conclusion was arrived at by considering the *kind* of condition that being abandoned is. The expression “being abandoned” refers not to a fact about the inner life of the implicated person, but to a fact about the outside world, or at least, about the status of the person in relation to the outside world. This focus on the *kind* of states or conditions referred to by putative emotion words is a central aspect of the general procedure employed in developing the taxonomy that we shall describe. Each word in the corpus was considered in various sentence contexts, examples of which appear in various places in the discussion that follows as well as in Ortony and Clore (1981). Words appearing to behave in substantially the same way were classified together, and components in terms of which the resulting categories could be succinctly represented were then extracted. The result of this enterprise was the taxonomic structure presented in Figure 1 below. The labels that we have assigned to the different categories appear in boxes as the terminal nodes in the Figure. The procedure used to derive the taxonomy, which is essentially that of componential analysis (e.g., Goodenough, 1956), is analogous to that used by, for example, linguists when they attempt to make explicit (aspects of) the grammar of a language that underlies native speakers’ linguistic performance, or by “knowledge engineers” attempting to render explicit the principles underlying various other kinds of expertise.

External Conditions

The first main division to emerge from our analysis is one between what we call “Internal” and “External conditions.” Terms that refer to External conditions do not refer directly to inner states. However, many of them have strong affective content. Although there are several sources of this affect, none of them is directly and necessarily in the person to whom the condition is ascribed. Thus, not only do External condition terms not refer to affective states, they do not even refer to internal states. This is why we refer to them as *External* condition terms.

Within the class of External conditions, there are two main subcategories, one for Subjective Evaluations and one for Objective Descriptions. While it is not always easy to make a clear distinction between the two, the idea is to capture the intuition that Subjective Evaluations, that is, words like “attractive,” “horrible,” “petty,” “strange,” and “wonderful” do not refer directly to states of the person to whom they are attributed, even though they often invite inferences about such states. Such words describe the person only insofar as they reflect the opinions, evaluations, or reactions that the person elicits in others, rather than by directly referring to psychological or physical states of the person.

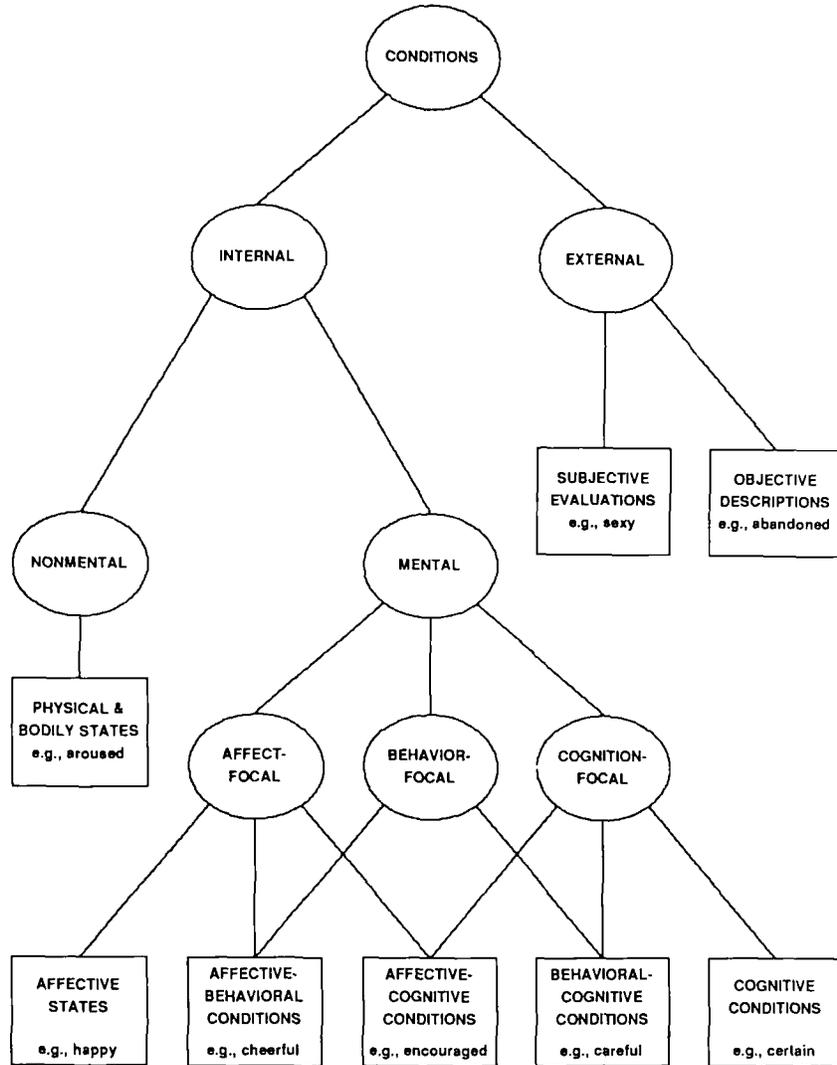


Figure 1.

The right-hand half of the External conditions branch, the Objective Descriptions, differ from Subjective Evaluations in that they refer, not to (individual or collective) opinions of ascribers but to facts about the described person in relation to the world. In such cases, disagreements can in principle be resolved by reference to facts, if they are available. If we describe someone as being safe or abandoned (as opposed to feeling safe or abandoned) we are making an objectively verifiable (at least, in principle)

truth claim about the world or about the described person's state of being in the world, rather than expressing an objectively unverifiable opinion or evaluation of the person. Again, Objective Descriptions do not refer directly to inner states, although they constitute particularly good candidates for the application of the metonymy rule, Rule (2), discussed in the previous section, because they often constitute causes of emotional states. Thus, as already suggested, if a person is abandoned by another this is often a cause of emotional states. However, *being abandoned* neither refers to nor entails an emotion.

Before leaving this discussion of External conditions, a general point needs to be made about some of the guidelines we adopted in trying to classify the various terms. First, rather than assuming that all terms in the affective lexicon refer to one or another kind of state, we have started with the more neutral assumption that they refer to various kinds of *conditions*, some of which may be states, and some not. Second, many terms in the affective lexicon can be used to refer to traits. Consider in this connection the term *aggressive*. Certainly a person can be characterized as being an aggressive person. However, if one takes this trait reading it is difficult to avoid the conclusion that an ascriber who attributes this trait to someone is expressing an opinion, and that the term should therefore be classified as a Subjective Evaluation. The problem with this course of action is that it runs the risk of relegating to the Subjective Evaluation category a number of terms that can in fact be used to refer to Internal conditions, and hence, possibly, to emotions. To overcome this difficulty, we construed words as referring to momentary rather than dispositional characteristics wherever possible. Thus, words like "aggressive," and "proud," which have both a state reading and a trait reading, were considered in their non-trait sense, as in "You were very aggressive just then," or "You must have been proud when you heard about the award." In such contexts the words "aggressive" and "proud" are not being used to refer to traits, but to states. It turns out that the words in the sample we analyzed vary in what might be called their "dispositional potential." Some words refer only to trait-like dispositions and resist any state reading at all (e.g., "competent," and "trustworthy"); these we frequently classified as Subjective Evaluations (although there are also some emotional dispositions, such as "warmhearted"). Other words can never be given trait readings (e.g., "gratified"), and yet others are ambiguous, having both a trait reading and a state reading (e.g., "happy"). In classifying terms, the state reading was always taken in preference to a trait reading when such a choice was possible.

Internal Conditions

We introduced our discussion of External conditions by noting that they were conditions not directly related to the "inner life" of the person of whom they are predicated. We turn now to a discussion of Internal condi-

tions, in which are distinguished two basic kinds, namely those that roughly correspond to physical conditions of the body and those roughly corresponding to conditions of mind. We refer to these as "Nonmental" and "Mental" conditions, respectively.

Many terms in the affective lexicon refer primarily to physical or nonmental rather than to psychological or mental conditions. Of course, many mental conditions have accompanying physical aspects (e.g., *fear*), but the focus of words referring to Mental conditions is not on the physical state as such. In contrast, words such as "exhausted," "sleepy," and "thirsty" refer more directly to Physical and Bodily states, and these are Nonmental conditions. Just as many emotions have a physical aspect, so these bodily states can have a mental or psychological aspect (Tomkins, 1980). "Hunger," for example, refers not only to a physiological state associated with a biological need, but also to a concomitant motivation, or mental reaction of wanting. Nevertheless, we have classified such conditions as Physical and Bodily states rather than as Mental conditions because, regardless of their mental aspect, they are bodily in origin. One characteristic of nonmental conditions is that they tend not to be susceptible to voluntary control. It makes little sense to tell someone to try to be less tired, less dizzy, or more revived.

Mental Internal Conditions. So far we have described a series of binary distinctions such as Internal versus External, Objective versus Subjective, and Mental versus Nonmental. These are fairly innocuous distinctions, and they have no unique relation to the question of what is an emotion. Depending on what one's goal is, one might find it helpful to take any of these categories and subdivide them further. If, for instance, one was interested in personality traits one could start off with the same set of distinctions that we have introduced, and then make further subdivisions within particular categories, separating, for example, Subjective Evaluations pertaining to behavior (which would be candidates for trait descriptors) from those pertaining to physical appearance (which would not). Our primary interest, however, is in emotions, for which reason we undertook a more fine-grained analysis of the Mental conditions category in the belief that emotions are a subset of Mental conditions. When one does this, it becomes apparent that Mental conditions always have either a significant Cognitive component or a significant Affective component, and sometimes both. In addition, some have a significant Behavioral component. It may be that truly psychological conditions generally implicate all of these facets to some degree. However, many of the words in the affective lexicon, while of course having affective overtones, do not have affect as a significant part of their referential focus.

This notion of referential focus on affect, cognition, and behavior, on which is based our more fine-grained classification of the Mental conditions category, is grounded in the traditional distinction in philosophy and psy-

chology between Affection, Conation, and Cognition (Hilgard, 1980; Klein, 1970). The main difference between the traditional trichotomy and our own is that we interpret "Conation" in a slightly more restrictive way and call it "Behavior." It must be emphasized that we use the trichotomy to identify predominant or *significant* referential focus so that when, for example, we claim that "proud" only has affect as a significant component, we do not mean to deny that it has a cognitive component and (possibly) even a behavioral one. Rather, we mean to say that *being proud* is primarily concerned with affect, rather than with ways of knowing or behaving, just as *being confused* is primarily concerned with an aspect of knowing and believing rather than with affect. It is important to note that the fact that pride (and, in our view, almost every emotion) necessarily involves cognition does not mean that it has a *significant* cognitive focus. The issue is not whether cognition is involved (it nearly always is), but whether or not the terms in question *refer* to the cognitions that are involved. While we acknowledge that the use of affect, behavior, and cognition as criteria for finer discriminations among Mental conditions is a more intuitive matter than the use of criteria such as internal versus external, it is possible to apply them with a fair degree of reliability. Indeed, across all categories, there was a mean agreement of 89% between the independent ratings of two of the authors on a random sample of 10% of the words. Thus, it is fairly easy to get agreement to the effect that the referential focus of words such as "alert," "confused," "confident," and "uninterested" is more or less solely on Cognition. These words clearly refer to aspects of knowing, believing, or thinking. Specifically, they refer to such things as readiness, success, and desire to deal with new information. For such words, which we put in the category of Cognitive conditions, affect is not focal. Similarly, words like "cooperative," "adventurous," "cautious," "obstinate," and "vigorous" do not have a predominant referential focus on affect, whereas they do have significant components of cognition and behavior. Accordingly, we classify such words as Cognitive-Behavioral conditions because they refer both to how one is *thinking* about a situation as well as to how one is *acting*. These two categories (Cognitive conditions, and Cognitive-Behavioral conditions) comprise the two categories of Mental conditions for which affect is non-focal. Words in these categories can be contrasted with a word like "glad," which is more or less purely affective, or with a word such as "optimistic" in which a cognitive focus is added to an affective focus, or to a word like "gleeful" in which a behavioral or expressive aspect is combined with a focus on affect.

As can be seen from Figure 1, terms were assigned to all pairwise combinations of affect, cognition, and behavior, thus creating categories of Affective-Cognitive conditions, Affective-Behavioral conditions, and Cognitive-Behavioral conditions. In addition, we found it necessary to utilize

two single categories, one for Affective conditions and one for Cognitive conditions. However, we did not find it necessary to include a category for behavior alone. The reason for this is that none of the words in the sample warranted a purely behavioral category, perhaps because such words generally refer simply to actions and thus are not likely to have found their way into lists of words thought to denote emotions and feelings. The other possible category that is missing is the one that would result from a significant referential focus on all three components. This omission was quite intentional, designed to force us to discriminate, even at the expense of error, between the *major* referential components of affect, behavior, and cognition. If we had allowed ourselves the luxury of admitting items to a category characterized by a comparable focus on all three components, it would have become much more difficult to make any distinctions at all. Such a category would have become a hopper for all difficult-to-decide cases. Its inclusion seemed strategically unwise, and theoretically unnecessary.

Of the five classes of Mental conditions that we identified, the ones of greatest interest to us are those for which, of the three possible semantic foci, affect, behavior, and cognition, affect is always either the sole focus, or one of two predominant foci. This is because most of the words in them refer to emotions (although some are better examples than others), while very few words that we consider to be examples of emotions lie outside them. One of these categories comprises terms whose principal referential focus is solely on affect, labeled Affective states. The vast majority of words that appear in this category are unequivocal examples of emotion words (e.g., "broken-hearted," "miserable," "contented," "thrilled"). The second category in this group consists of words such as "encouraged," "self-conscious," and "troubled." Such words are well characterized as Affective-Cognitive conditions. They have a significant affective *and* a significant cognitive component. Most of the conditions referred to by words in this category are emotional in nature, but many are poorer examples of emotions than the (relatively) pure Affective category. Finally, we have a category in which the primary focus is not on affect and cognition but rather on affect and behavior. This category includes terms such as "affectionate," "cowardly," "jubilant," "solemn," and "warm" and is labeled Affective-Behavioral conditions. It seems that when a strong affective component is coupled with behavior, the resulting behaviors often seem to be *expressive* in the sense that they represent behavioral expressions of emotions.

The difference between words in the pure affective category, those in the Affective-Cognitive category, and those in the Affective-Behavioral category is really only one of degree. The point of distinguishing these categories can best be illustrated by comparing some examples. For instance, "despondent" is classified as purely Affective, whereas "pessimistic" is

classified as Affective-Cognitive. This is because “despondent” lacks the cognitive focus that “pessimistic” has on beliefs and expectations (about the impossibility of remedying the distress-inducing situation). Thus, whereas both have a significant affective component, “pessimistic” also has a significant cognitive component that “despondent” does not. Similarly, “affection” is classified as purely Affective, whereas “affectionate” is classified as an Affective-Behavioral condition because it has a behavioral and expressive element as an important part of its meaning that “affection” does not.

States and Other Conditions. Earlier we suggested that one of the virtues of talking about “conditions” was that it was neutral as to whether or not we were dealing with states. In the context of External conditions this vagueness was helpful—it obviated the need to address questions such as “If a person is alone, does *alone* refer to a state?” However, when we come to Internal conditions, and especially when we come to ask which of these might appropriately be considered to be emotions, or at least emotional in nature, we can no longer easily finesse the question of whether or not a particular term refers to a mental state. Accordingly, it is useful to consider which words in the corpus refer to states and which not, quite independently of the proposed taxonomic classification. The general question of what constitutes a state is a difficult one. The boundary between states and other mental conditions, such as dispositions, is murky, particularly when, as in the case of many moods, the mental condition is a disposition to get into certain kinds of emotional states. Such moods might be called *reactive* in that they represent a greater-than-usual propensity to experience certain emotional states (e.g., *a depressed mood*). These can be contrasted with what might be called *active* moods, which are more like motivations in that they represent inclinations to engage in certain kinds of activities (e.g., *an energetic mood*). Because of the vagueness of the boundary between states and nonstates, there are some cases for which a categorical decision cannot be readily made. As a result, three categories of “stateness” were developed. The first category comprises words that clearly refer to states; words in this group are labeled, simply, *states*. The second category comprises cases for which we found it difficult to decide whether or not the words clearly refer to states, even though there may be something distinctly state-like about them. Words in this group we call *state-like conditions*. Finally, there are words that cannot possibly be construed as referring to states, but which refer rather to dispositions, traits, ways of behaving and so on. This motley assortment we refer to as *frames of mind*. This classification into types of conditions certainly leaves much to be desired. Ideally, we would have specified the criteria upon which these classifications were based. To do this, however, would require a level of philosophical analysis well

beyond the scope of this report. We can only say that our goal here was somehow to capture intuitions such as that *being alarmed* is clearly a state, whereas *being devoted* is not. While these seem to us to be clear cases, something like *being hostile* is not so clear. It has some state-like properties while lacking others, which is why we call it a “state-like condition.”

Although many of the categories of Internal conditions include words that refer to all three kinds of conditions—states, state-like conditions, and frames of mind—there are definite tendencies for different categories to be associated with some kinds of conditions but not others. It can be seen from the Appendix that the Cognitive conditions consist mainly of states (e.g., “alert,” “disillusioned,” and “uncertain”) with some frames of mind (e.g., “earnest,” “rigid,” and “vain”). In contrast, the Cognitive-Behavioral conditions are all frames of mind (e.g., “adventurous,” “critical,” “reckless,” and “virtuous”)—none are states. A moment’s reflection reveals that his last result is not altogether surprising. The Cognitive-Behavioral conditions all refer to *ways* or *styles* of behaving, and as such are hardly likely to refer to states, which tend to be relatively brief and temporally bounded. The Affective category is composed primarily of states. A few of the approximately 150 words in this category are classified as state-like conditions (e.g., “affection,” “despise,” “soothed,” and “vengeful”), but none are classified as frames of mind (i.e., nonstates). This is why we label the category “Affective *states*” (as opposed to *conditions*). The Affective-Cognitive category, while having only about half as many terms in it as the purely Affective category, also comprises predominantly states, with only six terms (“devoted,” “fulfilled,” “intimate,” “sensitive” [in the sense of easily hurt], “unfulfilled,” and “warmhearted”) being classified as nonstates. Finally, in the Affective-Behavioral category the tendency is in the other direction, with 17 or the 29 words in it being classified as nonstates (i.e., as frames of mind). This is not surprising if one recalls that this category comprises words that have a heavy emphasis on behavior as well as affect. Behaviors are typically not state-like things but are better thought of as process-like. Thus, for example, *being affectionate* is better construed as a kind of activity rather than as a kind of state. On the other hand, there do seem to be some cases in which one can speak of Affective-Behavioral states (one might think of them as expressive states). Examples of these include “cheerful,” “glum,” and “triumphant.” It may be that the difference between the cases that lend themselves to being characterized as states and those that are better conceived of as processes lies in the relative contributions made by affect and behavior. Perhaps the state cases have their principal focus on affect but have definite behavioral components, whereas the process cases have their principal focus on behavior but have a definite affective component. We leave it to the reader to judge whether this explanation is adequate, or whether some other explanation is more compelling.

SOME LINGUISTIC CONSIDERATIONS

The taxonomy we have proposed was developed using a list of words having a variety of syntactic forms, most often adjectives and nouns, but occasionally verbs or forms derived from verbs (e.g., participles). This lack of uniformity raises a number of important questions.

In many cases the conditions of interest manifest themselves linguistically in more than one syntactic form. Often these different forms are not associated with any corresponding semantic differences and thus can be regarded merely as different linguistic manifestations of the same underlying condition (cf. "optimistic" versus "optimism"). In such cases, especially if the different forms are morphologically very close, only the adjectival form is listed in the Appendix. In all cases, the classification was based on the most emotion-like reading that could be obtained from any of the syntactic forms considered.

Some of the more difficult cases arise when morphological variants of words having the same etymological origins do make a semantic difference. In such cases, we attempted to classify each semantically distinct word. So, for example, there is a considerable difference between "affection" and "affectionate," a difference which is reflected in the taxonomy by the classification of the former as an Affective state and the latter as an Affective-Behavioral condition.

A related general problem concerns ambiguity. Ambiguity arises in one of two ways. A word can be ambiguous in the conventional sense of being a homonym, or it can be ambiguous in the sense that there is both a physical and a psychological interpretation, in which case the psychological interpretation is usually a metaphorical extension of the physical one. An interesting example of the first kind is provided by the psychological (as opposed to physical) readings of the word "sensitive." "Sensitive" can either mean *easily hurt* as in "John is very sensitive about his recent divorce," or *considerate or concerned about the feelings of others*, as in "It was kind of John to be so sensitive to Mary's needs." While there is clearly some complex semantic connection between these two readings of the word (the first meaning focuses on the recipient of potentially thoughtless behavior, while the second focuses on the agent of potentially thoughtful behavior), the two meanings are quite distinct. In fact, the first sense is classified as an Affective-Cognitive condition, while the second is classified as a Cognitive-Behavioral condition. In other cases of ambiguity, only the clearly affective meaning was considered, since ultimately the main concern is with emotions. For example, "tender" was classified using the sense in which it means something like *gentle*, but not in the sense in which it means something like *painful*. The cases of physical/psychological ambiguity were handled by classifying either the psychological reading only (e.g., "hurt,"

“stunned,” and “weak”) or by classifying both readings (e.g., “uncomfortable”).

Antonyms can sometimes lead to another kind of classification problem. In many cases, the classification of antonym pairs is quite straightforward—both terms can be readily accommodated in the same category. For example, “friendly” and “unfriendly” are both classified as Affective-Behavioral conditions. However, it is not possible to assume without question that both members of all antonym pairs belong to the same category. Consider, for example, the terms “troubled” and “untroubled.” “Troubled” is classified as an Affective-Cognitive state, whereas “untroubled” is classified as an Objective Description. This is because we consider “untroubled” to refer not to a particular internal state, but, like “alone,” to a state of the person in the world. People are often untroubled without knowing it. They can lie asleep in bed untroubled by an approaching tornado, of which they might even be ignorant. Members of antonym pairs like “troubled” and “untroubled” represent two positions on a *unipolar* dimension as opposed to representing the ends of a true *bipolar* dimension. In other words, “untroubled” lies at the zero point on a *troubled* scale, so that one can have varying degrees of being troubled (e.g., very, or somewhat troubled), but not varying degrees of being untroubled (one cannot be very, or somewhat untroubled). In general, a term, (e.g., “untroubled”) that refers to the *absence* of some particular condition, C, is likely to be classified in a different category than C. In contrast, with bipolar scales in which the term represents the contrary of C, C and its antonym are more likely to be classified together. Thus, neither “friendly” nor “unfriendly” lie at the zero point of a scale—there can be degrees of both (it is possible to be both very, or somewhat friendly, and very, or somewhat unfriendly). The zero point is when one is neither friendly nor unfriendly. So, to put the matter succinctly, terms near the end points of bipolar scales are likely to be classified together, whereas terms near the end points of unipolar scales are not, because one of the terms in such pairs refers merely to the absence of some particular property rather than to the presence of some contrary property. All this, of course, is from a *semantic* perspective. Pragmatic considerations often permit inferences to be drawn from the use of a word like “untroubled” in particular contexts so as to imply more than the mere absence of a state or property.

English affective *verbs* are interesting in that they fall into at least two distinct classes, causatives and noncausatives (see, for example, Shibatani, 1976). The causatives are verbs that in their active forms refer to an affective state not in the person who is the referent of the subject of the verb, but in the person who is the referent of the *object*. Examples of causative verbs include “anger,” “annoy,” “frighten,” “enrage,” and “offend.” Thus, in “John angered Mary,” it is the angered person, Mary, who is the experimenter

and must be in an affective state, not John, the person who makes her angry. Conversely, for noncausative affective verbs the experiencer is the referent of the *subject* of the verb rather than the referent of the object. These include verbs like "admire," "hate," and "love." In such cases, for example, "John hates Mary," it is John, the person who does the hating, who is the experiencer in the affective state, not Mary, the hated person. Generally, because with causative verbs the experiencer is the referent of the object one would expect only the past participles (e.g., "angered," and "offended") to have an affective component. On the other hand, with non-causatives, the experiencer is the person referred to by the subject of the verb, so that they will appear to be affective in the active form (e.g., "admire," "hate"). In fact, the linguistic issues surrounding emotion and other psychological verbs is complex, with a proper analysis requiring a number of other distinctions to be brought into play. A fuller analysis of these issues can be found in the linguistics literature (e.g., Keyser & Roeper, 1984; Pesetsky, 1987; Postal, 1971).

It is difficult to know whether we devoted adequate attention to subtleties such as these in classifying the terms in the sample. Nevertheless, we have made some progress in uncovering potential problems, and, if nothing else, attention to such issues serves to alert one to the dangers of uncritically collecting data on items in the affective lexicon without due regard at least to the crude ambiguities that exist.

CONCLUSION

We can return now to the question raised in the introduction having to do with whether or not emotions resist definition. The taxonomy we have proposed suggests that it is possible to specify criteria for something's being an emotion. The best examples of emotions appear to be those that are classified simply as Affective states, although most of the words falling into any of the three categories of Mental conditions for which affect is focal (Affective states, Affect-Cognitive conditions, and Affective-Behavioral conditions) are reasonable examples of emotions. At the same time, words classified as states appear to be better examples of emotions than words classified as state-like conditions, which in turn are better examples than those classified as frames of mind. This amounts to saying that the best examples of emotions are ones that possess the following components: (a) they are internal, *mental*, as opposed to physical or external, conditions, (b) they are good examples of *states*, and (c) their predominant *referential focus* is on *affect*, as opposed to behavior, cognition, or some combination of these. Our claim that emotion words have a predominant referential focus on affect is not circular. Whereas all words in the affective lexicon *implicate* affect, our

claim is that emotion words involve affect in a more specific way, namely, they refer to that subset of mental states that have a predominant, rather than incidental, focus on affect. As we relax the constraints, (a), (b), and (c) above, we move into the territory of poorer examples, or even nonexamples. If we relax only the *Mental condition* constraint we get nonexamples (e.g., “peculiar,” a Subjective Evaluation from the group of External conditions). This suggests the not very surprising conclusion that being a *Mental* condition is a necessary (although not sufficient) condition for something to be an emotion. If we relax only the *state* constraint we get poorer examples. So, for instance, terms in the Affective states category (e.g., “affection”) that refer to state-like conditions as opposed to states, are poorer examples, but are still arguably examples of emotions. And if we relax the *focus on affect* constraint, the goodness of exemplar deteriorates as the dominance of the affective component of meaning is reduced or disappears. It is reduced in Affective-Behavioral conditions (e.g., “glum”)—where the behavior component is a strong competitor with the affective component, and in Affective-Cognitive conditions (e.g., “pessimistic”)—where the cognitive component is. In other cases the affective component appears to compete less successfully. This can be seen in the frames of mind (e.g., “apologetic,” an Affective-Behavioral frame of mind), for which we have proposed that the behavioral component starts to dominate the affective component.

What we are seeing here are two reasons why some conditions are judged to be better examples of emotions than others. First, the more of the components that some particular condition possesses, the more like a full-blown emotion that condition will be, and consequently, the more likely is it to be judged a good example of an emotion. Second, graded membership can be due, not to the impossibility of specifying the components of the category, but to the fact that some of the components are not binary.² This is particularly true of the significant focus on affect feature. The strong position to take, therefore, would be that for something to be an emotion it must be a mental state (the problem here is that we do not know exactly how to char-

² It is perfectly coherent to claim that a necessary condition for an A to be an X is that it have property P, even though property P may be graded (indeed, that is one way in which classical definitions can accommodate typicality effects). For example, it is a necessary condition (by convention) that an operative stop light be red. The fact that redness is graded is a separate issue. As Wierzbicka (1987) puts it: “Components such as ‘similar to the colour of blood’ (in ‘red’) or ‘thought of as someone who could marry’ (in ‘bachelor’) are vague, and this vagueness is mirrored in the referential indeterminacy of the corresponding words. . . . It is not the Aristotelian notion of necessary and sufficient features which causes troubles in semantic analysis; it is the tacit behaviourist assumption that the necessary and sufficient features should correspond to measurable, objectively ascertainable aspects of external reality.”

acterize a mental state, which is a different problem), and it must have a significant focus on affect (the problem here is that we do not know exactly how to quantify the degree to which a word refers to one component of meaning or another, but that too is a different problem).

Our proposals have been made in an attempt to bring some degree of order to the affective lexicon. They certainly should not be viewed as representing an irrevocable commitment to the placement of each individual word within each category. We are, however, committed to the general principle that a meaningful classification can be constructed, and we think that the one we have proposed has some value. Partly this is because the words in each major category cohere as a group; the within-group similarity of items is generally higher than the between-group similarity, a fact that is characteristic of "natural" categories. We have, in fact, collected data designed to help examine the validity of the taxonomy. Since a detailed formal account of this study is presented elsewhere (Clare, Ortony, & Foss, in press) we shall mention the results here only in passing. The basic idea of the study was to compare the degree to which words were judged to refer to emotions in the context of "feeling something" versus "being something." Results of discriminant analyses confirmed predictions that the eight categories could be discriminated by the patterns of these scale values. The centroids of the eight group were significantly different from each other ($p < .001$) in all but three of the possible 28 pairwise comparisons. The fact that the different categories are empirically discriminable, and that the structure of the taxonomy is based on fairly well-accepted and relatively uncontentious distinctions, suggests that the taxonomy we have proposed is not an arbitrary one.

We should note that Shields (1984), motivated by concerns similar to ours, undertook to separate emotions from nonemotions using only empirical techniques. Her findings were not inconsistent with ours. However, they were based on an examination of only about 60 words. In addition, Mees (1985) presents an interesting discussion of words denoting emotions in which he notes, as we do, the need to distinguish between words that refer to emotions and words that refer to other kinds of psychological states. The difference between the work of Mees and our own is that Mees focuses on *classifying* emotions, whereas in this paper we focus on classifying words in the affective lexicon with a view to *identifying* emotions. This also characterizes the basic difference between what we have proposed here and the analysis of emotions and emotion words proposed by Johnson-Laird and Oatley (1986). Our own efforts to deal with the structure of emotions are represented in a cognitive theory of emotions that we are developing (Ortony, Clore, & Collins, in press), but as mentioned at the beginning of this paper our goal has been to present an analysis that is not dependent upon any particular theory of emotion, for which reason we have not presented our own.

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APPENDIX

EXTERNAL CONDITIONS

Subjective Evaluations

attractive awful bad contemptible despicable disagreeable dreadful dreary
dull fine glorious good hateful hopeless horrible inadequate inferior lousy
lovable marvelous odd pathetic peculiar phony pitiful pleasant ridiculous
rotten self-destructive sexy strange strong (psychologically) superior terrible
terrific trustworthy unattractive unlovable unpleasant untrustworthy use-
less weak (psychologically) weird wonderful

Objective Descriptions

abandoned abused alone beaten beloved bereft cheated competent defeated
degraded dependent (physically) deprived disgraced dominated guiltless
guilty helpless ignored impotent ineffective insulted isolated lucky mis-
treated neglected oppressed persecuted powerful quiet safe slighted successful
thwarted uncared-for unfaithful unimportant uninterested unprotected un-
troubled unworried welcome vulnerable

INTERNAL CONDITIONS—NONMENTAL

Physical and Bodily States

aroused breathless comfortable (physically) dazed dizzy droopy drowsy
exhausted faint fatigued feverish hungry ill itchy jittery nauseous numb
pain refreshed relaxed (physically) rested revived sick (physically) sleepy
sluggish thirsty tingly tired uncomfortable (physically) weary well

INTERNAL CONDITIONS—MENTAL**Affect Non-Focal****Cognitive Conditions**

Frames of Mind: aware conceited conscientious cynical earnest hung-up indifferent patient prejudiced rigid self-centered serious sincere tolerant trust vain

States: accept alert amazed astonished baffled bewildered bored certain complacent confident confused convinced curious determined disillusioned doubtful expectant fascinated flabbergasted hazy hopeful impressed incredulous inspired interested lost (befuddled) mixed-up overconfident perplexed resigned self-confident skeptical startled stunned (psychologically) sure surprised suspicious uncertain

Cognitive-Behavioral Conditions

Frames of Mind: adventurous aggressive aloof antagonistic argumentative arrogant bold brave careful careless cautious charitable competitive cooperative courageous crazy critical cruel daring defensive defiant dependent (psychologically) energetic faithful foolish friendly funny generous gentle greedy hesitant inhibited lazy lively meek mischievous modest nonchalant obstinate petty playful protective purposeful rebellious reckless restless sarcastic selfish sensitive (considerate) silly stubborn stupid submissive uncooperative unfriendly vigorous violent virtuous willful

AFFECT FOCAL**Affective States**

State-like Conditions: affection aversion carefree despise detest dislike fond lighthearted like on-edge soothed vengeful

States: adore afraid aggravated agitated agony angry anguished annoyed anxious apprehensive ashamed at-ease attracted awestruck bitter blue brokenhearted calm charmed cheered cheerless comfortable (psychologically) contented crushed deflated dejected delighted depressed despondent disappointed discontented disgusted displeased dissatisfied distressed downhearted dread ecstatic elated embarrassed enjoyment envious euphoric exasperated excited (psychologically) fear fed-up frightened frustrated furious glad gratified grief grief-stricken guilt happy hate heart-stricken heartbroken heartsick heartsore heavy-hearted high homesick horrified hurt (psychologically) ill-at-ease in-love incensed intimidated irate irked irritated

jealous joyful joyless livid loathe lonely lonesome longing love lovesick low mad melancholy miserable mortified moved nervous outraged overjoyed overwhelmed pained panic peeved petrified pining pissed-off pleased pleasure proud rage regret relaxed (psychologically) relieved remorse resentful sad satisfied scared self-pity serene shaken shame shook-up sick-at-heart sickened sore sorrow sorry suffering tense terrified threatened thrilled tormented touched (psychologically) uncomfortable (psychologically) uneasy unhappy upset uptight woe-stricken yearning

Affective-Cognitive Conditions

Frames of Mind: devoted fulfilled intimate sensitive (easily hurt) unfulfilled warmhearted

State-like Conditions: appreciation approve-of disapprove-of forgive hostile insecure malicious nostalgic reassured repentant respect reverence secure sentimental spiteful

States: admiration aggrieved alarmed amused apathetic at-peace awe burdened compassionate concerned consoled contempt contrite desire despair desperate discouraged disenchanting disheartened dismayed disturbed eager empathy encouraged enthusiastic grateful heartened hope hopelessness humble humiliated impatient indignant infatuated lust offended optimistic peaceful pessimistic pity self-conscious self-satisfied shocked smug suspense sympathetic thankful troubled want wonder worried

Affective-Behavioral Conditions

Frames of Mind: affectionate apologetic benevolent bitchy cowardly crabby grouchy irritable kind loving placid scornful shy solemn tender timid warm

States: cheerful emotional gaiety gleeful gloomy glum joyous jubilant merry mournful passionate triumphant