Concepts of Emotion: "Emotionness'', and Dimensional Ratings of Italian Emotion Words

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Italian emotion terms ($N = 153$) were judged by samples of Italian university students in eight studies, two of which were replications. The studies collected normative ratings (a) on the dimensions of Valence, Intensity, and Duration, and (b) on "emotionness" (i.e. prototypicality judgements, frequencies in a spontaneous production task, and reaction times in word categorisation). Two sets of multiple regression analyses showed that Intensity, Duration, and Valence ratings significantly predicted, but to a varying degree, individual "emotionness" ratings, as well as "emotionness" factor scores, a compound index. Intensity appeared to be a dimension that can subsume information about other emotion features, especially duration. Additional predictors included word length, and, less often, frequency of words in the language. The results were interpreted as supporting the hypothesis that "emotionness" judgements are summary-like statements of a complex computation that considers emotional features denoted by a word.

INTRODUCTION

In many Western languages, English and Italian included, several hundred words supposedly refer to emotions (e.g. Averill, 1975; Galati, 1986; Ortony, Clore, & Foss, 1987; Russell, 1983; Scherer, 1984). Can this variety of words tell us how people conceptualise emotions, and/or inform us on the nature of emotions themselves? I shall assume that emotional experiences are multicomponential phenomena (Scherer, 1984), and that most people have a rich knowledge of emotions (i.e. detailed information about aspects such as their typical antecedents and how they are appraised, typical physiological, expressive, and behavioural reactions, etc., e.g. Shaver, Schwartz, Kirson, & O'Connor, 1987, study 2; Zammuner, 1995a–c). If the lexicon is a functional tool, then we might expect emotion words to refer to emotional experiences or states, such as joy, fear, pride, and panic, by denoting: (1) a *specific* feature or component of the emotion (its valence, intensity, duration, action readiness tendency, etc.), or of its causes and consequences; or, more likely (2) a *pattern* of such features (e.g. a state of high unpleasant activation that lasts several minutes; see Frijda, Ortony, Sonnemans, & Clore, 1992; Frijda, Mesquita, Sonnemans, & van Goozen, 1991; Ortony & Turner, 1990; Scherer, 1984; Shaver et al., 1987). This paper will report a set of studies, on the Italian emotion lexicon, that attempted to address the issue of what are some of the dimensions or criteria which underlie what counts as an emotion in people's conceptualisation, and that differentiate among various emotion concepts—the latter issue, however, will be addressed only in passing.

What is Defined as an Emotion?

Several studies in the last two decades or so, have analysed the nature and structure of emotion concepts, as they are "translated" in the emotion lexicon, in an attempt to answer questions such as: Do all emotion words refer to emotions, and to the same extent? Are there criteria, features, or conditions that enable us to define "an emotion", and to specify similarities and differences among emotion concepts? (Hereafter emotion concepts are given in italics.) A semantic analysis of the conditions that emotion words refer to, proposed by Ortony et al. (1987) as a meaningful, nonarbitrary classification method, indicated that "pure" affective conditions are denoted by words that refer to internal rather than to external conditions, to mental states rather than to frames of mind (e.g. *devoted*), or to state-like conditions (e.g. *affection*). Such words—about 150 were categorised (e.g. *happy*, *in love*, *delighted*)—have affect only as their focal attribute, whereas other words focus on affective-behavioural conditions (e.g. *cheerful*), or on affective-cognitive conditions.

A related question is: Are some emotion concepts more clear instances of the emotion category than others? For instance, do *happiness*, *pride*, *anger*, *fear*, and *anxiety* have an equal status? Following Rosch's approach (e.g. 1975), Fehr, Russel and Ward (1982) and Fehr and Russell (1984) proposed that emotion concepts, similarly to other natural language concepts, are prototypically organised, rather than defined in terms of a set of singly necessary and jointly sufficient attributes. How frequently people list concepts, such as *happiness*, *fear*, *anger*, *pride*, or *anxiety*, as instances of the superordinate category *emotion*, or how quickly they recognise them as such (e.g. decide that "Fear is an emotion" is a true statement) indicates how good the exemplar is. Concepts that come most readily to mind, or that are judged faster as being "an emotion", are more central or prototypical exemplars of the category, and are likely to represent a "basic" categorisation level (i.e. carrying the greatest amount of information in the most economical way). Concepts that, for instance, are infrequently listed by people, or not quickly judged as referring to emotions, are peripheral exemplars, likely to represent a detailed-information subordinate categorisation level. Concepts such as *hate*, *sadness*, *fear*, *anger*, *guilt*, and *excitement* were found to constitute central exemplars of emotion, whereas concepts such as *embarrassment*, *anxiety*, *disgust*, *pride*, *calm*, and *worry* were found to be peripheral exemplars (Fehr & Russell, 1984). Basic categories are hypothesised to have first appeared historically and onto-genetically, and to be labelled by the shortest words (Fehr & Russell, 1984, p. 482).

Following the same approach, but on the basis of results obtained in similarity judgements of 135 prototypical emotion words, Shaver et al. (1987; see also Shaver, Wu, & Schwartz, 1992) proposed that *love*, *joy*, *fear*, *anger*, and *sadness* constitute basic categories of emotion; subordinate categories have more specialised meanings (e.g. *pride*, *contentment*, or *zest* in relation to *joy*), or designate a generic form of the emotion in question (e.g. *affection* in relation to *love*). Similar results were obtained by Storm and Storm (1987) in a similar analysis of about 500 words. In sum, emotion concepts have an internal structure that orders them from better to poorer exemplars; moreover, they can be ordered in a hierarchical structure, with some concepts included within others.

Because "a script is to an event what a prototype is to an object" (Russell, 1991b, p. 443), to know the meaning of an emotion word is to know the script of that emotion (i.e. its typical causally ordered event sequence), (see also Shaver et al., 1987, study 2); people will label the actual events, that is, the emotions, using this or that word (*fear*, *anger*, etc.) to the extent that they resemble the ideal case (i.e. the script, Fehr & Russell, 1984). Using a priming paradigm, Conway and Bekerian (1987) showed that a specific emotion exemplar is accessed faster if subjects

activate knowledge about an event sequence that is typical for that emotion. For instance, *misery* was recognised as a word more quickly when the priming sentence referred to an event causally associated with it, such as "He would sit by the bedside and talk to his sick father. One afternoon, as he sat there, his father closed his eyes and died", rather than unrelated to it, such as "The tax official had a very pompous and condescending manner. He felt that the official was treating him like an idiot"—a good prime for *hate*.

Finally, studies of emotion concepts and words in cultures other than the English-speaking ones (e.g. Frijda, Markman, Sato, & Wiers, 1995; Hermann & Raybeck, 1981; Lutz, 1982; Russell, 1983; Scherer, 1984) showed that cultures exhibit conceptualisations that are both similar and different, a result that, according to Russell (1991a), can be explained in terms of how emotions are scripted in a culture.

Valence, Intensity, Duration, and "Emotionness"

As discussed earlier, in a number of languages and cultures many words within the affective lexicon are conceptualised by people, and reliably identified, as referring to emotions; some words, that might vary from culture to culture, have a somewhat privileged status over others because they represent clearer, more prototypical exemplars of the emotion category. But what enters into the computation of prototypicality?

Although the information about the causally ordered event sequence that is typical for a given emotion is important, as shown by the studies mentioned earlier, other features of emotions are likely to play a prominent role as well. In particular, a number of authors, starting with Wundt (1897), have proposed that, both at the level of experience, and at the conceptual level, we differentiate between emotions (and other affective phenomena, such as moods), and emotions from nonemotions, on the basis of two main dimensions, namely valence and level of activation (the latter has been referred to, or operationalised, also as arousal, intensity, or activity). Additional dimensions (e.g. potency, strain-relaxation, control, dominance-submissiveness, social orientation) have also been proposed (e.g. Averill, 1975; Conte & Plutchik, 1981; Galati, 1986; Gotlib & Meyer, 1986; Larsen & Diener, 1991; Nowlis, 1965; Russell, 1983; Reisenzein, 1994; Shaver et al., 1987, study 1; Thayer, 1978).

To avoid a possibly confusing linguistic overlap, let us call "emotionness" the judgement about *membership of a word referent in the emotion category*. Let us define it operationally, for the purposes of the studies reported here, as follows: (1) the likelihood that a word is judged to refer to an emotion on an interval scale (prototypicality ratings); (2) the likelihood that a word is listed spontaneously by subjects as an instance of the

emotion category; (3) the likelihood that a word is quickly judged as referring to an emotion on a dichotomous rating task. The three tasks might be expected to produce somewhat different results because of likely differences in the cognitive processes on which they are based, and the constraints under which they operate (see results and comments in sections A–C). The main hypothesis to be tested is that emotionness is a complex evaluation, arrived at on the basis of a (often implicit) computation that considers *a set of features* of emotions, with each feature contributing its own information in the definition of membership. *Valence* (or *hedonic tone*), *intensity*, and *duration* were selected as constituting core aspects in such a definition. These features are also expected to contribute to the definition of the *quality* of emotions (i.e. differentiating emotion concepts one from the other, e.g. *fear* vs. *anxiety* vs. *terror*).

The salience of valence in defining emotions has long been recognised (e.g. Frijda et al., 1992; Larsen & Diener, 1991; Ortony & Turner, 1990; Ortony et al., 1987; Russell, 1991a). Intensity might be considered a relevant dimension not only because it is often used as a measure of arousal, or conceptualised as such (e.g. Reisenzein, 1994), but also because it appears to be salient in people's spontaneous reports of emotional experiences, as in "I was so proud", "I felt really surprised" (e.g. Scherer, Wallbott, & Summerfield, 1986; Shaver et al., 1987, study 2; Zammuner, 1995a–c). Note, however, that according to Frijda et al. (1992), and as suggested by results obtained in some of the dimensional studies cited earlier, intensity is likely to be a complex dimension in itself, involving both various aspects related to changes in arousal or activation level, such as their duration and peak, and other components of emotional impact, such as the urge to act and the preoccupation with situation-relevant thoughts. In other words, when people judge intensity, they are likely to be making a summary evaluation that includes reference to various components of an emotion. Duration was selected as a salient dimension not only because it is often relevant in how people categorise (felt) emotions (e.g. "For an instant I was petrified", "He felt angry for hours"), but also because, according to Frijda et al. (1992), it might be one of the independent dimensions in judgements of intensity. Despite their potential relevance, and although they are implied by the script/prototype approach (e.g. as attributes of component events of an emotion sequence), the attributes of intensity, valence, and duration were rarely considered in previous studies of *emotion concepts* in an explicit and systematic way (for partial exceptions, see Frijda et al., 1992, 1995; Reisenzein, 1994).

Assuming that emotionness is a graded property, my hypothesis was that the ratings on the three dimensions would predict emotionness judgements, for example, whether emotion words are categorised as central rather than peripheral exemplars of the category, come to mind readily as instances

of the emotion concept, or are quickly judged to be "an emotion". In agreement with the tenets of prototype theory, intensity, valence, and duration were not expected to constitute necessary and sufficient condi- tions for membership in the emotion category. Not all members need possess all the relevant features, or possess them to an equal extent; as suggested earlier, a given word or concept might denote, or focus on, this rather than, or more than, that aspect of the emotional experience (e.g. activation level vs. appraised valence).

THE RESEARCH

As said earlier, dictionaries of most Western languages comprise hundreds of emotion words. Because it seems important to investigate a set of representative terms, and not to overlook the potential variety of emotion concepts denoted by them, the reported studies analysed a relatively large set (i.e. 153 words, see Appendix). The decision to study a large set of concepts was motivated also by the secondary aim of providing normative data for Italian. Such data are necessary in constructing an empirically based classification of the Italian emotion lexicon (other studies are cur- rently being carried out), and might be helpful in cross-cultural, compara- tive analyses of emotion words. Given the potential culture-specificity of many terms that denote emotions (for a review, see Russell, 1991a), the availability of normative data can help in deciding, for instance, to what extent two emotion terms in two languages (or cultures) have the same referent (e.g. is *jealousy* the equivalent of the Italian *gelosia*?), or are appropriate to denote a given basic or subordinate emotion concept.

Selection of the Terms

In order to draw an appropriate, as well as representative, sample of emotion words (i.e. words that indeed refer to emotions and not to other phenomena, and a set that comprises most of the relevant examples of emotion concepts; see Ortony et al., 1987; Russell, 1991a; Shaver et al., 1987), the 153 terms were selected carefully on the basis of previous empirical and theoretical studies both of the Italian and the English lexicon. More specifically (and notwithstanding the problem with trying to draw a one-to-one correspondence between the terms of two languages), the 153 terms comprise: (1) 107 terms analysed in at least one of two available studies of the Italian emotion lexicon that had investigated its variety and structure (Galati, 1986; Gius, Cozzi, Spagnotto, & Villa, 1992); (2) most terms spontaneously listed with some frequency by both Italian- and English-speaking subjects as instances of emotion (van Goozen & Frijda, 1993, and pers. comm., 1992; Fehr & Russell, 1984, study 1); (3)

most of the 135 emotion concepts judged to be prototypical ones by North American subjects (Shaver et al., 1987, study 1); (4) 134 of the terms analysed by Ortony et al. (1987); (5) most of the terms analysed by Johnson-Laird and Oatley (1989); (6) about 100 of the terms analysed by Ortony (pers. comm., 1990; see also Frijda et al., 1992) in terms of typical intensity, and intensity range, of the emotion denoted by each term. The selected terms include, furthermore: (7) many equivalents of the English terms analysed in several dimensional and hierarchical studies (e.g. Averill, 1975; Reisenzein, 1994; Russell, 1983; Storm & Storm, 1987).

When close synonyms or different grammatical forms were available, a term (terms will be hereafter referred to by means of their closest English translation) was selected for inclusion in the final list if it met the following criteria: (a) it had been previously analysed in one or more of the studies quoted earlier; (b) it was a noun rather than an adjective or a verb; (c) it seemed to the author to express most clearly a given emotion (e.g. *affection* and *dismayed*, rather than *affectionate* and *dismay*); (d) it had a higher frequency of usage in Italian (Bortolini, Tavaglini, & Zampolli, 1972; *Corpus di Barcellona*, unpublished)[1]. The frequency of usage of the selected terms ranges from 764 (*love*) to values between 100 and 300 (e.g. *joy, desire, doubt*), to values of 1, 2, or 3 (e.g. *grudge, affliction, shock*, and *startle*). About one-third of the terms have a frequency of less than 10.

Structure of the Research Section

The studies and their results will be reported in three main parts. In part A, I will briefly outline the method (task, rating scale, number of subjects) of seven studies, two of which are replications, that were carried out in order to collect various normative data on the set of 153 Italian emotion concepts described earlier, and report their main results.[2] In part B, I will report in greater detail a reaction time experiment, on the same set of emotion words, the aim of which was to collect categorisation data using an experimental paradigm that has proven to be very sensitive, as well as robust, in studies of mental processes (cf. Meyer, Osman, Irwin, & Yantis, 1988). Values or ratings of each term obtained in each of the six main studies described later, and summary statistics for each study, are reported

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[1] Under these constraints, the final list includes 118 nouns, 33 adjectives, and 2 verbs (*to abandon oneself to*, and *longing to*). *Respect* and *understanding*, and *content, attracted, hurt, rejected, neglected*, and *heart-broken* were presented together with the verb to *feel* (in Italian *provare . . . per*, and *sentirsi*, respectively); *eager, determined*, and *impatient* were followed by a preposition (*bramoso di, determinato a*, and *impaziente di*).

[2] Other results (e.g. those derived from factor analyses and multidimensional scaling of the data obtained in each study) will be reported elsewhere.

in the Appendix, together with the frequency of usage of each term in Italian, and its closest English translation (word length can be deduced from the Italian terms column). In part C, following a brief consideration of the observed correlations among the studied variables (see Table 1), I will present the results of statistical analyses that tested what relationships hold between various measures of "emotionness" and the three emotion features that were considered.

METHOD AND RESULTS

A. Prototypicality, Valence, Intensity, and Duration

Method and Results of Studies 1–7

Subjects, Task, and Procedure.   Independent samples of university students, with about an equal number of men and women, who attended various faculties at several universities of northern Italy, served as subjects. Each of studies 1–2 and 4–7 described later analysed how the previously described set of 153 Italian emotion words (see Appendix) was perceived by subjects in terms of a specific judgement dimension; in each study, subjects answered a questionnaire that presented the 153 terms in one of four different randomised lists. In study 3, a production task was administered.

Study 1. Prototypicality Ratings.   Subjects ($N = 120$) answered the question "To what extent does [the term] refer to an emotion?"; the rating scale, identical to that used by Shaver et al. (1987, study 1), ranged from 1 (I would not say that it is an emotion) to 4 (I would say that it is certainly an emotion). The results [see Prototypicality (Typ.) scores in the Appendix] showed that, on average, Italian terms were rated similarly to their "equivalent" American terms. The correlation with Shaver et al.'s ratings (1987, study 1), computed on a total of 130 words, was .61, $P < .00$ (cf. also the ratings obtained by Fehr & Russell, 1984, study 3). However, Italians often gave lower ratings than Shaver et al.'s subjects (e.g. *affection*, 3.24 vs. 3.72; *compassion*, 2.80 vs. 3.62). Using Shaver et al.'s cut-off point of 2.75 (but American ratings had a wider range, i.e. 1.57–3.94), 61 terms qualified as prototypical exemplars (e.g. *attraction*, *jealousy*, *astonishment*). Of the 23 terms that were included in the Italian list but were not included in Shaver et al.'s (1987) list of prototypical 135 terms, nor in a replication study with Italian subjects (see Shaver et al., 1992), several obtained high ratings (e.g. *moved*, *heart-broken*, *sorry for*).

Study 2. Prototypicality Ratings: A Replication.   In Italy, meaning variations due to differences in local dialects (and subcultures) are to be expected (e.g. D'Urso & Galati, 1990). To test the reliability of the obtained prototypicality ratings, a replication study was carried out with a large sample (N = 358) of students attending various faculties in the Tuscany region. The ratings (M = 2.52, SD = 0.45; range = 1.50–3.54) correlated highly with those obtained in study 1 (r = .94, P < .01), thus showing that, for university students at least, the prototypicality ratings obtained in study 1 are quite reliable. Study 2 confirmed the trend noted in study 1, namely, that on average, Italians are somewhat more "conservative" than their American peers in their ratings of prototypicality.

Study 3. Prototypicality: Free Listing of Emotion Terms.   Concepts that are judged to be prototypical might come to mind more readily when subjects are asked to list exemplars of the emotion category. However, whereas the former is a recognition task, the latter is a production task that might be influenced not only by subjects' knowledge of emotion concepts, but also by such variables as word frequency in the language and subjects' lexical repertoire or motivation level to execute the task. Therefore, although as already stated, the 153 words had been selected taking into account, among other criteria, the results obtained in a production study with *Italian* subjects (N = 80; van Goozen & Frijda, 1993), a replication with a larger sample seemed advisable. Subjects (N = 200) were asked to list all the emotions they could think of in five minutes. Out of a grand total of 2973 terms that were produced, 78% referred to one of 196 distinct proper emotion terms (see column 4 in the Appendix); the remaining words referred to emotion-related features such as physiological and expressive reactions, behaviour modalities, antecedent events, and action tendencies (Zammuner, Frassinelli, Galli, Nervo, & Poli, 1995).

Study 4. Valence Ratings.   Subjects (N = 200) rated the extent to which each word referred to a valenced state, answering the question: "How pleasant or unpleasant is, from a subjective viewpoint, the emotional experience denoted by [the term]?" A bipolar rating scale was used (see Schwarz, Knauper, Hippler, & Noelle-Neumann, 1991), ranging from -5 (very unpleasant) to 5 (very pleasant); the scale comprised no zero point. The results (see column 5 in the Appendix) showed that evaluations spanned the whole scale, unlike prototypicality ratings; 50% of the terms had a mean absolute rating $\geqslant 3.18$, and 25% were $\geqslant 3.68$. The latter highly valenced group included terms such as *triumph*, *serene*, *relief*, *despair*, *frustration*, and *spite*. In total, 56 words were judged to refer to pleasant emotions, and 97 to unpleasant ones, an asymmetry noted before in the literature (Averill, 1980). Note that only about one-tenth of the terms were

judged to refer to only slightly valenced, almost "neutral" experiences (e.g. *startle*, *impassive*, *amazed*, with ratings between −1.5 and 1.5).

Study 5. Intensity Ratings.   Subjects (N = 200) answered the question: "What is the intensity of the emotional experience denoted by [the term]?" The rating scale ranged from 1 (almost nul intensity) to 10 (very intense emotion; see Frijda et al., 1992; Schwartz et al., 1991). The results (see column 6 in the Appendix) showed that the upper quartile (mean rating ⩾ 6.87; 50% of the terms were rated ⩾ 6.06) included most of the so-called "basic" emotion concepts (i.e. *anger*, *fear*, *joy*, *love*), as well as several terms usually considered as peripheral exemplars, such as *sorrow*, *pain*, *anguish*, *cheerfulness*, *enthusiasm*, and *feeling rejected*. About one-tenth of the terms, including *apathy*, *impassive*, *quiet*, *vigilant*, *perplexed*, *gloomy*, and *hesitant* were among the least intense emotions, with ratings lower than 5.00.

Study 6. Intensity Ratings: A Replication.   Because the instruction to judge the "intensity of the emotional experience . . . " is relatively ambiguous, in a replication study subjects (N = 240) were asked to rate "intensity . . ., as it is reflected in the thoughts, actions or reactions that it elicits, that is, considering the extent to which the emotion compels you to do or not to do something, changes the way you feel inclined to act, and so forth". In other words, subjects were asked to focus quite explicitly on the magnitude of potential manifestations of emotional impact (Frijda et al., 1992). Concepts were rated on the same 1–10 scale used in study 5. The average range of ratings was 4.1–8.4, with M = 5.99, SD = 0.89. The ratings were almost perfectly correlated with the *generic intensity* evaluations obtained in study 5 (r = .98, P < .01). On the one hand, this seems to support Frijda et al.'s (1992) suggestion that global intensity ratings are likely to reflect one or more specific dimensions of (felt) intensity, and on the other, shows that ratings of intensity represent reliable "*summary*" evaluations—which, however, cannot inform us about which specific dimensions entered in the computation.

Study 7. Duration Ratings.   Subjects (N = 200) rated the average maximum duration of each emotion, on a 1 (a few seconds at most) to 10 (more than a few hours) scale, answering the question "How long does the emotional experience denoted by [the term] last at most?" The results (see column 7 in the Appendix) showed that not only concepts such as *appalled*, *astonishment*, *amazed*, *fury*, *panic*, *terror*, *startle*, but also *distress*, *embarrassment*, *disgust*, *heart-broken*, *nauseous*, and *marvel* fell in the lowest ratings quartile (comprised between 3.21 and 4.69). Only a few of these low-duration terms referred to pleasant emotions, thus indicating

that subjects (wish to) believe that the latter are, generally speaking, characterised by longer durations. The ratings of "basic" emotion terms (*anger, fear, joy, sadness*) were not at all homogeneous, falling in three different quartiles. Terms such as *affection, love, tenderness, feeling attracted to, liking, desire, passion, feeling respect for, joy, serene, cheerful*, and *calm* fell in the upper quartile (≥ 6.24). Note that these terms have both a dispositional meaning (i.e. refer to sentiments, moods, or personality traits, e.g. Frijda et al., 1991), and an emotional meaning that refers to momentary states. As these terms refer quite unambiguously to emotions (studies 1 and 2), it is likely that in rating the *maximum* duration of the referents of these terms, both meanings of the term were accessed. Finally, both intense but not highly valenced emotions, such as *impatient* and *pride*, and neither intense nor highly valenced ones, such as *quiet* and *careful*, were judged as long-lasting. In contrast, valenced as well as intense emotions (e.g. *triumph*) were rated as lasting for a short time. Thus, it might be concluded that, although most central emotion exemplars (characterised by high intensity and valence) are judged as lasting certainly more than a few seconds, but not for an extremely long period (a result congruent with subjects' reports of actual felt durations, e.g. Frijda et al., 1991, 1992; Scherer et al., 1986), long-lasting experiences might be "exceptionally" included in the emotion category.

B. Reaction Times to, and Categorisation of, Emotion Words

Method, Tasks, and Procedure of Study 8

Subjects, Stimuli, and Procedure.   University students, women and men ($N = 30$), took part in this experiment. Each subject judged 306 words: 153 were the emotion words listed in the Appendix and analysed in studies 1–2 and 4–7; 153 were abstract words that matched the emotion words in terms of length and frequency of usage, and, as much as possible, in terms of orthography and stress pattern (e.g. *piacere/accordo, sereno/ sforzo, pena/data, comprensione per/avvertimento per, sentirsi attratto/ sentirsi artefice*). Every care was taken to check that abstract words did not have an emotional meaning. On average, the subjects completed the experiment in about 20 minutes.

Task (a): Word Categorisation.   Subjects answered the question "Is [the term] an emotion?" by giving a Yes or No judgement as quickly as they could. The instructions (" . . . we ask you to judge whether the words that you will see refer or not to an emotion . . .") were written on a sheet

that subjects read before starting the experiment; the instructions were also read aloud by the experimenter. Before starting the categorisation task, subjects had a practice period during which they evaluated an independent set of 10 emotion words and 10 abstract words. Words were presented one at a time, using the program Psychlab for Macintosh, in a sound-attenuated room where the subject was seated, alone, at a table in front of the computer. Stimuli were presented in three blocks of 103 words each, with a pause of about two minutes between blocks. Block order was balanced across subjects (1,2,3; 1,3,2; etc.). Each block comprised an approximately equal number of emotion and nonemotion words, and with regard to emotion words, of pleasant and unpleasant emotions, of intense and not-so-intense emotions, of prototypical and less typical emotions, of short and long words, and of frequent and infrequent words (i.e. words were selected on the basis of ratings obtained in studies 1–7). Within each block, word order was randomised for each subject, but with the constraint that no more than three similarly characterised words (in terms of intensity, etc.) would appear next to each other. Yes and No judgements were given by subjects by pressing one of two response keys on the computer keyboard. The left and right position of the Yes and No keys on the keyboard were inverted for half of the subjects. The stimulus duration and the inter-stimulus intervals were controlled automatically. Each word appeared in the centre of the computer screen, preceded by a fixation point that appeared for 800 milliseconds; words were presented in bold Geneva 24 pt characters. The onset of the stimulus started a timer; the stimulus was displayed till the subject pressed either the Yes or No key on the keyboard; pressure on either key also stopped the timer. Both reaction time (RT) in msec and word categorisation were automatically recorded for each stimulus. The inter-stimulus interval (i.e. the time elapsed between subjects' pressure on either response key and the presentation of the fixation point preceding the next stimulus) was 400msec.

Task (*b*): *Valence (or Hedonic Tone) Ratings.* After completing the categorisation task, subjects were asked to answer the Valence questionnaire used in study 4.

Results of Study 8

Subjects' mean *correct* RTs in deciding if each of the 153 emotion words referred to "an emotion", the main dependent measure, and mean frequencies of correct word categorisation (i.e. percentage frequency of answers "Yes, it is an emotion") are reported in the Appendix. The average RT in milliseconds to emotion terms ranged from 634msec (*anxiety*) to 1161msec (*feel respect for*; $M = 804$, SD = 99), whereas mean *correct* RTs ranged

from 618msec (*jealousy*) to 1157msec (*feel sympathy for*). On average,
78% of subjects correctly judged the 153 emotion terms, whereas 87%
correctly judged the 153 nonemotion terms. Correct RTs to both emotion
and nonemotion words were not significantly faster than incorrect ones. An
interesting additional result was that nonemotion words that were incor-
rectly categorised by at least 30% of subjects (i.e. for which the answer
"Yes, it is an emotion" was given), included words that in Italian can be
interpreted as referring to an emotionally laden state, such as *readiness,
irresponsible*, and *feeling fatigued*, or to an emotion-inducing action, such
as *effort*, or to emotion-antecedents, such as *mystery, sacred*, and *preferred*.

   In the following paragraphs I will report only the results related to the
153 emotion words.

   The proportion of subjects that correctly categorised each emotion term
ranged from 1.00 (e.g. *anxiety*) to .17 (*determined to*). The majority of
emotion terms were judged correctly by subjects: 109 terms were judged
correctly by a proportion ⩾ .75, including *envy*, *satisfaction*, *hate*, *nostal-
gia*, and *jealousy*. Words correctly categorised by a proportion ⩾ .90 (47
terms) most often denoted pure affective states (see Ortony et al., 1987),
although a few referred to cognitive or physical states (e.g. *astonishment*,
excitement). Words often used with a nonemotional meaning, such as
vigilant, *abandonment*, and *triumph*, and a few infrequent words, such as
outraged and *veneration*, were in the word group correctly categorised with
a proportion ⩾ .50. Correct RT and correct word categorisation frequencies
were negatively correlated (see Table 1).

   Subjects' mean valence ratings, obtained in the questionnaire task ($M =$
2.94, SD = 1.00; range = 0.32–4.56), correlated highly with the mean valence
ratings obtained in study 4 ($r = .91$, $P < .01$); subjects' absolute valence
ratings correlated negatively with mean correct RTs ($r = -.35$, $P < .01$).

C. Relationship between "Emotionness" Ratings and Features of Emotional States

Overall, the results obtained on the set of 153 emotion terms of the Italian
lexicon (see Appendix) are quite congruent with results obtained in similar
studies of the emotion lexicon of other languages, especially English. At
least indirectly, they indicate that the selected terms constitute an appro-
priate sample of emotion words. Furthermore, the ratings obtained in
studies 1, 4, 5, and 7 were shown to be quite reliable, as indicated by
their significant correlation with the ratings obtained in three replications
(i.e. on prototypicality, intensity, and valence) with different population
samples, and by the Cronbach's alpha-values obtained in each study (see
Appendix). The analyses reported in this section were therefore based on
the mean values obtained in studies 1, 3, 4, 5, 7, and 8.

TABLE 1
Correlation Matrix for 9 Variables Descriptive of 153 Emotional Terms

Variable	L	Freq.	List.	Int.	Val.	Dur.	Typ.	%CC
Frequency in Italian	−.31							
Free listing of terms	−.33	.63						
Intensity	n.s.	.32	.43					
Valence	n.s.	.23	.33	.49				
Duration	n.s.	.33	.27	.44	.24			
Typicality	n.s.	.26	.48	.73	.45	n.s.		
%CC	n.s.	n.s.	.41	.42	.38	n.s.	.64	
CRT	−.62	−.28	−.46	−.26	−.20	n.s.	−.35	−.49

Abbreviations: *L*, number of letters of the term; *Freq*., frequency of the term in Italian; *List*., frequency of spontaneous listing of the term as "an emotion" (study 3); *Int*., mean intensity rating of the experience denoted by the term (study 5), on a 1 (almost nul intensity) to 10 (very intense emotional experience) scale; *Val*., mean absolute valence (hedonic tone) rating of the experience denoted by the term (study 4), on a −5 (very unpleasant emotional experience) to +5 (very pleasant) scale; *Dur*., mean duration rating of the experience denoted by the term (study 7), on a 1 (very few seconds) to 10 scale (very long duration); *Typ*., Mean prototypicality rating (study 1), on a 1 (I would not call this an emotion) to 4 scale (I would definitely call this an emotion); % *CC*, percentage frequency of correct categorisation of the term as an emotion (study 8); CRT: Mean correct reaction time (study 8).

1. Correlations among the Variables

The significant correlations ($P < .01$) among the various evaluations of the emotion terms given by subjects, and between these and frequency of free listing of emotion exemplars, and word Frequency and Length, are shown in Table 1. Most notable are the following relationships: Free listing is most highly correlated with word Frequency in the language, and is negatively related to word Length; Length is highly (and negatively) correlated with correct RTs, but is unrelated to Prototypicality ratings; the RT measure, with the exception of Duration, is related negatively to all remaining variables that were considered. Categorisation frequencies obtained in the RT task are highly related to Prototypicality, showing that the two tasks tap very similar processes; furthermore, they show a notice-able relationship with Free listing.

Intensity, Valence, and Duration ratings are correlated one with the other, but only Intensity, itself highly correlated with Prototypicality scores, and, less highly, with both Free listing and correct word Categor-isation frequencies, shows a medium-size relationship with the other two emotion features. Moreover, whereas Duration is practically unrelated to the remaining variables, Valence shows a noticeable relationship with most measures of "emotionness" (e.g. Prototypicality). This pattern of correla-tions is the first indication that the three features contribute somewhat different information in the categorisation of emotion concepts.

2. Emotion Features as Predictors

In the following sections I will attempt to specify the meaning of the observed relationships by testing, in several multiple stepwise regression analyses, the hypothesis that "emotionness" is a summary statement of a complex computation that considers relevant features of emotions, such as their intensity, valence, and duration. Other aspects, such as the causes of an emotion, have already been shown by previous studies to be relevant features (see the Introduction).

Because preliminary analyses showed that, in relation to most variables considered here, five emotion terms were constant outliers, all the regression analyses that are reported were carried out on 148 terms—the outliers were *longing to, shock, gloomy, startle*, and *vigilant*—residual statistics for each of the regression analyses reported indicated that the 148 terms conformed to multiple regression model assumptions and that no further screening or transformation of the variables was necessary.

2.1. *Emotion features as predictors of prototypicality ratings, free listing of emotion exemplars, and reaction times*. In this section I shall focus on each of the three operational definitions of "emotionness" given earlier, namely, the likelihood that a word: (i) is spontaneously listed by subjects as an instance of the emotion category (Free listing frequences); (ii) is judged to refer to an emotion on an interval scale (Prototypicality ratings); (iii) is rapidly judged as referring to an emotion on a dichotomous rating task (correct RTs). Three regression analyses were performed to test the main hypothesis that duration, valence, and intensity (entered in this order in the equation) can predict each emotionness measure.

Frequency of free listing of terms. The regression analysis, in which word Frequency and Length were entered as additional predictors in the last two steps, showed both Duration ($R^2 = .07$; $\beta = .27$, $T = 3.4$, $P < .001$) and Valence (increment in $R^2 = .06$; $\beta = .27$, $T = 3.5$, $P < .001$) to be significant predictors of Free listing *before* Intensity was entered in the equation. Intensity ($\beta = .22$, $T = 2.9$, $P < .01$), word Frequency ($\beta = .47$, $T = 6.7$, $P < .00$), and word Length ($\beta = -.19$, $T = -2.9$, $P < .01$) were the significant predictors in the final equation ($R^2 = .47$).

Prototypicality ratings. All three emotion features appeared as significant predictors in the final equation, and together explained a remarkably high percentage of variance ($R^2 = .63$; Duration: $\beta = -.38$, $T = -6.7$, $P < .00$; Valence: $\beta = .13$, $T = 2.3$, $P < .02$; Intensity: $\beta = .82$, $T = 13.3$, $P < .00$).

Reaction times to correct word categorisation. Length, a variable entered first in the analysis due to its salience in this task, was found to be a quite significant predictor of RT, as hypothesised ($R^2 = .50$). Both Duration (increment in $R^2 = .01$; $\beta = -.13$, $T = -2.2$, $P < .05$) and Valence

(increment in R^2 = .02; β = $-.16$, T = -2.8, P < .01) were significant predictors of RT *before* Intensity was entered in the equation, a finding which is similar to that obtained in the prediction of Free listing. Length (β = $-$ .70, T = 12.8, P < .00) and Intensity (β = $-$ .20, T = $-$ 2.9, P < .01) were the significant predictors in the final equation (R^2 = .56).

2.2. *Emotion features as predictors of integrated* "*emotionness*" ratings. Given the results obtained in the analyses reported in section 2.1, it seemed advisable to construct a single, more reliable "emotionness" index. In order to do so, mean Prototypicality ratings, frequencies of Free listing of emotion exemplars, and correct RTs were submitted to a principal-component factor analysis, using the Varimax method of extraction. A preliminary inspection of the data showed that factor analysis requirements were met (Determinant = .58; Kaiser–Meyer–Olkin measure of sampling adequacy = .66; Bartlett test of sphericity = 78.90, P < .00). The analysis extracted one factor (eigenvalue = 1.87), that I shall call "Emotionness", that accounted for 62.6% of the variance. The variables had the following loadings on the factor: Prototypicality, .77; Free listing, .83; RT, $-.77$.[3] Extreme positive factor scores were obtained by words such as *joy, fear, love, anger, sadness*, and *hate*; words such as *quiet, exasperation, hesitant, impassive*, and *veneration* were included among those that had the most extreme negative factor scores (column 11 of the Appendix reports the rank of each term according to its factor score).

Predicting "*emotionness*" for the entire set of words. A regression analysis was performed, with word Length, and the three emotion features as predictors of "emotionness" factor scores. The final equation (see Table 2) showed that, in addition to Length, both Intensity and Valence were significant predictors; Duration was significant only *before* Intensity was entered in the analysis.

Predicting central and peripheral exemplars. Is variance in "emotionness" ratings explained by the three considered emotion features to the same extent, and in the same fashion, for words that constitute very good, central emotion exemplars, and less good, peripheral ones? Two regression analyses were carried out on the subset of words that fall, respectively, below and above the median in terms of their "emotionness' factor scores, the dependent variable, with Length of word, the fourth relevant independent variable,

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[3] The Free listing task might be more influenced by "noise" variables than other judgements. Indeed, when only RTs and Prototypicality ratings were factor-analysed, the solution (1 factor) explained 68.1% of the variance, the variables had higher factor loadings, and the Determinant was more satisfactory (.87). However, for the purposes of the present paper it seemed more advisable to consider all three measures of "emotionness".

TABLE 2
Multiple Stepwise Regression Analyses of Valence, Duration, and Intensity Ratings on
"Emotionness" Ratings[a]

Dependent Variable	Multiple R	Adjusted R^2	Beta Weights	T	P<
1. "*Emotionness*" *ratings of* *the entire word set*					
Length	.49	.23	−.48	−9.00	.00
Duration[b]	.53	.27	−.09	−1.51	n.s.
Valence	.64	.40	.15	2.57	.02
Intensity	.78	.59	.54	8.37	.00
2. "*Emotionness*" *ratings of* *central exemplars*					
Length	.30	.08	−.36	−3.81	.00
Duration[c]	.41	.14	.07	0.72	n.s.
Valence[c]	.45	.16	.00	0.08	n.s.
Intensity	.64	.37	.53	4.94	.00
3. "*Emotionness*" *ratings of* *peripheral exemplars*					
Length	.37	.12	−.53	−5.32	.00
Duration	.38	.12	−.36	−3.29	.002
Valence	.49	.20	.21	2.08	.05
Intensity	.63	.37	.52	4.35	.00

[a] (1) $N = 148$; (2) above the median, $N = 74$; and (3) below the median; $N = 74$

[b] Duration was significant at step 2 (i.e. before entering Valence) (beta = .19, $T = 2.7$), $P < .01$).

[c] Duration and Valence were relevant predictors at steps 2 and 3, respectively, before entering Intensity (beta = .27, $T = 2.5$, $P < .02$; beta = .19, $T = 1.9$, $P < .06$, respectively).

"Emotionness" ratings were factor scores of the "Emotionness" factor (see section C, 2.2). The reported beta-weights, and associated T-values, were obtained in the final regression equations, after all variables had been entered in the analysis.

always entered first in the regression. The results (see Table 2) showed that the predictors behave differently as regards the "low" and "high" "emotionness" sets. More specifically, in addition to Length and Intensity, Duration and Valence were significant predictors only within the Peripheral exemplars set.

GENERAL DISCUSSION AND CONCLUSION

Assuming that the variety of emotion words is related to how people conceptualise emotions, we might expect words to refer to the superordinate emotion category, and to its various instances, by denoting either a specific feature of emotions, or of their causes and consequences (e.g. antecedent event, activation level, duration, etc.), or by denoting a pattern

of such features. To understand what counts as an emotion in people's conceptualisation, the set of studies of the Italian emotion lexicon that was reported in this paper collected normative data: (1) on three emotional features hypothesised to underlie emotion categorisation, namely, valence, duration, and intensity; and (2) on three kinds of "emotionness" judgement (i.e. the extent to which a word is conceptualised as denoting an exemplar of the emotion category). The collected judgements were the frequency with which the term is spontaneously listed by subjects as an instance of an emotion (Free listing), the latency with which a term is so categorised (RT), and, finally, the ratings of how prototypical an instance of the category it is judged to be, on an interval scale (Prototypicality ratings).

In a first set of regression analyses, all three emotion features were shown to contribute significantly in predicting prototypicality, whereas, for both Free listing and RT, Duration and Valence were significant predictors only *before* Intensity, a highly significant predictor, was entered in the equation. The results moreover showed that the features, together or separately, have a varying degree of prominence in the computation, and account to a different extent for the variability of judgements.

Before we discuss the results obtained in a second set of analyses, and the role of emotion features in predicting emotionness, let us consider the extent to which the obtained judgements are influenced by: (1) the purely linguistic information conveyed by length and frequency of a word; (2) the kind of judgement subjects are asked to give (i.e. the task characteristics). We saw that word Frequency is a powerful predictor of Free listing frequencies, but not of other emotionness judgements, whereas Length, which contributes little to explain Free listing once word Frequency is considered, is a very relevant predictor of RT. Furthermore, the predictors (emotion features and linguistic variables) explained variance in Free listing to a lesser extent (although not to a low degree in absolute terms) than in RT; in turn, variance in RT was explained to a lesser extent than in prototypicality judgements—prototypicality might thus qualify as the most reliable, summary-like computation. In sum, the results indicate that there are nontrivial differences between judgements obtained in production and evaluation tasks, as well as between those obtained in different evaluation tasks.[4] Therefore, the role played by linguistic and task variables, sepa-

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[4] Free listing (the production task) is the most vulnerable to "noise" variables, such as what is the person's *active* repertoire of emotion terms, the fact that he/she might list, synecdochically, a part to denote the whole (e.g. listing an antecedent, such as quarrelling, or a physiological reaction such as trembling, to refer to an emotional state; Zammuner et al., 1995), and his/her motivation level to execute the task (e.g. to search his/her memory for relevant instances). RTs and Prototypicality judgements, on the other hand, are based on the person's *passive* repertoire (i.e. are less cognitively taxing tasks). However, both repertoires

rately and in combination, needs to be taken into account in studies of emotionness judgements, and in the conclusions we draw concerning the determinants of such judgements.

The results obtained in the analyses of ''emotionness'' scores, a compound, more reliable index, showed that, if *all* terms are considered, Valence, but not Duration, figures as a significant predictor of Emotionness scores, together with Intensity; if only words denoting *central exemplars* are considered, (i.e. terms that fall above the median), then only Intensity is a significant predictor, *presumably because most of the central words are highly valenced*; finally, if only *peripheral exemplars* are considered (i.e. terms that fall below the median), then all three features are significant predictors. Length was always a significant predictor. The results support the hypothesis that ''emotionness'' is a complex, summary-like evaluation that people make by ''checking'' which values characterise a word referent with respect to relevant features of emotional states. The results are congruent with dimensional analyses of emotions, and of emotion concepts, that suggest that people categorise a word as referring to an emotion *to the extent that* they can relate it to dimensions such as valence (Ortony, Clore, & Collins, 1988)[5] and intensity (or arousal, e.g. Reisenzein, 1994).

The amount of information associated to each emotion feature was shown, however, to vary both in absolute terms, and with respect to what kind of emotion exemplars are considered. Intensity contributed the most to explain judgement variability, and tended to ''override'' the information provided by valence and duration (i.e. it usually was the most informative dimension). This result supports the hypothesis that intensity judgements *can* subsume information about several directly perceived emotion features, such as duration (or even valence), and

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are related to word Frequency (although to a different extent, as we saw earlier), itself inversely related to word Length (the negative correlation between the two variables suggests that language tends to denote prototypical emotion concepts by means of short words). Therefore, it is likely that Length is such a powerful predictor of RT not only because RT is a measure of the time taken to read the word, access the term in memory and evaluate it, but also because Length encodes to a great extent the prototypicality of the word referent. Linguistic variables do not instead affect Prototypicality judgements, possibly because the computation is not really subject to time pressure (a relevant variable for RTs), is based on the passive rather than the active emotion lexicon, and involves a relative rather than an absolute judgement.

[5] According to Ortony et al. (1988), valence is (a) the judgement about the goodness or badness of an eliciting event rather than (b) the goodness or badness of the felt emotion—the latter ratings were considered here. It would therefore be interesting to study to what extent valence ratings of type *a* and of type *b* differ in constituting necessary or crucial features of emotion membership.

changes in felt arousal (Frijda et al., 1992).[6] The comparison between the categorisation of central and peripheral emotion exemplars seems to indicate that there exists an intensity threshold: *central* exemplars (characterised by high emotionness values) can be further discriminated by simply checking their intensity level, whereas in the judgement of *peripheral* exemplars, the information about both valence and duration seems to be "necessary" in order to define the extent of exemplar membership.

The results showed that not all instances that were included in the emotion category have all the relevant features of valence, intensity, and duration considered here, or possess them to an equal extent—paradigmatic examples include *agitation, anger, astonishment, distress*, and *moved* (see Appendix). As stated, a word might denote, or focus on, this/these aspect(s) of the emotional experience rather than, or more than, that/those aspect(s), (e.g. intensity vs. valence, or duration). In some cases, a single "prominent" feature (e.g. intensity) might constitute a sufficient basis for the emotionness judgement; in other cases, the judgement might be due to the simultaneous but nonprominent "presence" in the exemplar of several features (e.g. *dread*); finally, instances characterised by high values in one or more emotional features can, nonetheless, be judged to be "bad" exemplars (e.g. *helpless*, *loathing*, *pride*).

The results are therefore congruent with the hypothesis (cf. Russell, 1991b) that emotionness is a graded property, and that the emotion category has fuzzy boundaries. Does this imply that the results support a prototype view of emotion concepts, rather than a classical definition in terms of necessary and sufficient conditions? As demonstrated by Armstrong, Gleitman, and Gleitman (1983), gradedness may be a property of all concepts, including those that have necessary and sufficient conditions. An adequate approach to the understanding of concepts is likely to involve a hybrid view, which would include aspects of the classical, theory-based approaches as well as of the prototype-like approaches (Clore & Ortony, 1991). The central question is whether concepts themselves are best thought of as prototypes, or whether people simply use prototypes (i.e. information about surface, readily perceived features) as a heuristic for identifying the category members, themselves theory-based, concerned with more basic underlying features, rather than prototype-based.

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[6] This hypothesis is further supported by a set of multidimensional scaling results that, for a carefully chosen subset ($N = 100$) of the 153 emotion words considered, showed that whereas valence is accounted for almost entirely by a one-dimensional solution (Stress = .06, RSQ = .99), intensity is accounted for only partially by a two- and even a three-dimensional solution (Stress = .27; RSQ = .69; Stress = .20, RSQ = .78, respectively). A result similar to the latter was obtained for Duration.

Whether the considered emotion features constitute necessary and suffi-cient conditions for membership cannot be fully and unambiguously answered by the results reported here. However, the present findings do indicate that intensity, valence, and duration constitute (often implicit) crucial criteria that people rely on in assessing the likelihood that a given instance is a member of the category. Although the issue was not directly addressed in the reported studies, it is conceivable and to some extent indicated by existing studies, including cross-cultural ones, that different groups (e.g. Italians vs. Japanese; women vs. men; adolescents vs. adults) might categorise emotion(s) by giving greater weight to this rather than that criterion, or set of criteria, possibly on the basis of in-group biases (e.g. Mesquita & Frijda, 1992; Russell, 1991b). Finally, emotion categorisation might be based on additional, or more specific, criteria other than the ones tested here, such as degree of "uncontrollability" of the felt emotion, or presence of script-related features (e.g. the extent to which an antecedent event is culturally focal).

Although the studies reported here analysed Italian emotion words judged by Italians, the obtained judgements were, as stated, similar to those obtained in studies of other Western languages; furthermore, emo-tion categorisation within these cultures seems to be relatively homoge-neous (e.g. Galati, 1986; Russell, 1991b; Scherer et al., 1986; Shaver et al., 1987, 1992; van Goozen & Frijda, 1993). Therefore, we might expect that the selected emotion features also influence the categorisation of emotion words in other Western languages. If this hypothesis is correct (and the question has to be answered empirically), then the degree of equivalence between emotion words (or emotion concepts) in different languages could be defined, in addition to the methods used so far (e.g. word-facial expression match), by measuring to what extent any two or more word-pairs (or triplets, etc.) that are hypothesised to refer to the same emotion in two (or three, etc.) languages are categorised by similar values of emotion features. In a similar vein, emotion features could be helpful in analysing the acquisition of emotion words (concepts) in children, or the similarities and differences between emotion word subgroups or clusters; in testing which words (concepts) constitute a basic categorisation level; in under-standing what subjects "have in mind" when they mention this rather than that emotion word in their self-reports; or in selecting the words to be included in a checklist that we give to subjects when we ask them to report about an actual emotional experience they had.

Finally, according to a few theorists at least, analyses of the emotion lexicon might help reveal important similarities and differences within the *emotions*, because language constitutes "the most convenient nonpheno-menological access to emotions" (Ortony et al., 1987, p. 342), and emotion terms might reflect the very nature of emotions because "'emotions' . . .

have words assigned to them" (Frijda et al., 1995, p. 121; see also Fehr & Russell, 1984; Shaver et al., 1987). From this viewpoint, the obtained results can be interpreted as suggesting that we ought not to overlook, or unduly simplify, the variety and diversity of patterns of subjective emotional experience that is presumably referred to when people use this rather than that emotional term. In other words, the use of a term, *ceteris paribus*, might indeed be telling us about the nature of its referent as felt subjectively.

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APPENDIX

Normative values and ratings of 153 Italian emotion terms, mean reaction times for, and frequency of, the categorisation of the terms as "an emotion"

English (1)	Italian (2)	Freq. (3)	List. (4)	Val. (5)	Int. (6)	Dur. (7)	Typ. (8)	%CC (9)	CRT (10)	Rank (11)
Abandon oneself to/ Surrender/Yield	Abbandonarsi a.	6	2	2,02	6,16	5,47	2,41	50	1038	144
Adoration	Adorazione	5	1	1,48	5,41	4,71	2,40	77	783	98
Affection	Affetto	104	29	3,98	7,24	8,58	3,24	93	723	19
Affliction/Distress	Afflizione	1	0	−3,19	5,50	5,03	2,63	83	827	100
Agitation	Agitazione	23	11	−2,29	7,17	5,80	3,04	87	786	43
Amazed/Astonished	Sbalordimento	1	0	,67	5,55	3,51	2,75	87	909	119
Amused	Divertito	15	4	3,66	6,81	6,66	2,49	67	790	88
Anger	Rabbia	79	92	−3,13	7,65	5,27	3,47	97	676	5
Anguish	Angoscia	58	44	−4,23	7,15	5,39	3,41	100	635	8
Annoyance	Fastidio	39	7	−2,66	5,67	4,91	2,25	87	755	84
Anxiety	Ansia	63	43	−3,55	6,98	5,68	2,99	100	634	9
Apathy	Apatia	1	18	−3,26	3,55	4,76	1,76	67	712	81
Appalled	Sbigottito	8	2	−,59	5,02	3,21	2,24	73	822	116
Astonishment	Stupore	41	25	1,98	5,81	3,82	3,09	97	715	23
Attracted	Attratto (s)	13	11	3,51	7,82	7,42	3,12	73	996	107
Aversion	Avversione	10	2	−2,80	5,65	5,15	2,27	60	830	118
Baffled/Disconcerted	Sconcertato	4	2	−2,25	5,04	4,05	2,31	73	968	135
Bewildered	Frastornato	2	0	−1,62	4,89	4,16	2,05	77	951	142
Bitter/Doleful	Amareggiato	7	12	−3,12	5,59	5,50	2,57	90	780	66
Boredom	Noia	84	29	−3,29	4,97	5,81	1,89	87	702	55
Breathlessness	Affanno	26	1	−2,60	5,56	4,22	2,12	77	786	112
Calm	Calma	120	32	3,36	5,09	6,73	1,79	70	706	61
Carefree	Spensieratezza	2	11	3,52	5,74	6,22	1,98	77	886	124

English (1)	Italian (2)	Freq. (3)	List. (4)	Val. (5)	Int. (6)	Dur. (7)	Typ. (8)	%CC (9)	CRT (10)	Rank (11)
Careful/Prudent	Prudenza	23	1	1,06	5,20	6,80	1,35	57	741	127
Caring	Premura	21	0	,56	5,34	6,09	1,72	57	794	126
Cheerfulness	Allegria	38	38	4,12	7,28	7,23	3,17	93	651	10
Compassion	Compassione	30	9	1,25	5,57	4,95	2,80	90	729	41
Confusion	Confusione	36	10	−2,87	5,54	5,46	2,07	57	792	104
Contempt	Disprezzo	31	9	−3,27	6,32	4,90	2,32	90	746	72
Contentment	Appagato (s)	3	7	4,04	7,00	6,24	2,67	57	992	125
Delight	Letizia	2	3	3,06	5,20	5,44	2,52	83	789	87
Depression	Depressione	10	17	−4,22	5,69	6,22	2,27	87	731	63
Desire	Desiderio	3	12	3,25	7,95	7,39	2,99	80	737	38
Desolation/Grief/Sorrow	Desolazione	223	2	−3,67	5,32	4,64	2,72	93	808	80
Despair	Disperazione	40	9	−4,56	7,22	5,15	3,27	93	735	30
Determined to	Determinato a . . .	8	1	3,16	6,88	7,33	1,86	17	1014	146
Disappointment	Delusione	15	27	−3,62	6,66	6,35	3,07	93	716	22
Discouraged/Dejected	Scoraggiamento	12	2	−3,26	6,09	3,50	2,40	83	855	83
Disgruntled/Vexed/Annoyed	Contrarieta'	4	1	−1,89	4,88	5,05	1,95	50	970	145
Disgust	Disgusto	24	13	−3,41	6,26	4,53	2,58	80	743	50
Dislike	Antipatia	21	8	−3,12	5,97	6,82	2,02	93	782	106
Dismayed	Costernato	1	1	−2,04	4,68	4,05	2,37	67	837	113
Displeased/Dissatisfied	Scontentezza	5	0	−3,05	5,42	5,58	2,77	87	869	102
Distress/Upset	Turbamento	11	3	−2,27	5,98	5,01	3,03	87	750	46
Doubt	Dubbio	148	6	−1,80	5,47	6,10	1,59	50	809	128
Dread	Timore	48	31	−2,47	5,61	5,50	2,80	97	719	27
Eager to	Bramaso di . . .	1	1	1,50	6,43	5,61	2,56	80	916	121
Ecstatic/Enraptured	Estasiato	4	14	3,73	6,75	4,59	3,08	83	889	68

English	Italian									
Elation	Esaltazione	4	6	2,87	7,79	5,15	3,07	97	803	53
Embarrassed	Imbarazzo	22	33	−2,88	6,43	4,53	3,22	87	704	16
Enthralled/Enchanted/ Bewitched/Charmed	Incantato	23	1	2,75	5,35	4,12	2,65	67	836	101
Enthusiasm	Entusiasmo	28	6	4,07	7,81	6,51	3,32	97	795	40
Envy	Invidia	7	20	−3,33	5,50	4,45	2,54	93	785	60
Euphoria	Euforia	3	15	3,78	7,69	5,50	3,38	90	701	21
Exasperation	Esasperazione	12	0	−3,69	6,37	4,69	2,57	83	1035	141
Excitement	Eccitazione	1	20	3,44	8,53	5,84	3,65	93	741	17
Exultation	Esultanza	28	3	3,72	7,33	5,30	3,27	73	715	31
Fear	Paura	491	122	−3,24	7,01	5,05	3,65	97	685	2
Fervour/Zeal	Fervore	18	0	2,24	5,80	5,31	2,59	63	798	91
Frenzy	Frenesia	2	2	−,32	5,99	4,61	2,25	80	821	115
Fright/Scared	Spavento	46	17	−2,90	6,65	3,50	3,35	93	748	26
Frustration	Frustrazione	2	7	−4,07	5,66	4,96	2,51	80	831	99
Furious	Furia	70	5	−2,42	6,75	3,81	3,02	80	757	44
Gaiety	Gaio	15	2	3,39	5,40	6,02	2,65	63	737	64
Glad	Contentezza	17	20	3,96	7,13	6,84	3,23	93	809	36
Gloomy	Tetro	17	0	−2,85	4,58	3,80	1,73	37	1051	–
Grudge	Astio	1	0	−3,31	5,89	4,66	2,45	77	748	77
Guilt	Colpa	199	5	−3,79	6,48	5,89	2,63	73	756	65
Happiness	Felicita'	72	115	4,55	8,13	7,09	3,64	100	674	4
Hate	Odio	70	81	−3,73	7,26	4,76	3,24	93	685	7
Heart-broken	Straziato (s)	5	0	−4,19	6,03	4,42	3,01	67	847	76
Helpless/Powerless	Impotente	11	7	−4,23	5,25	4,14	1,77	53	864	133
Hesitant	Esitante	20	0	−1,75	4,56	4,50	1,89	67	909	139
Homesick/Nostalgia	Nostalgia	29	14	−1,52	6,84	6,85	3,08	93	702	29
Hope	Speranza	187	8	2,98	7,07	8,03	2,34	83	792	93
Hopelessness	Sconforto	14	13	−3,51	5,66	4,97	2,75	90	790	59
Horror	Orrore	54	8	−3,88	6,24	3,32	2,94	87	787	51
Hostility	Ostilita'	11	1	−3,09	5,73	4,93	2,22	87	796	108
Humiliation	Umiliazione	15	3	−4,20	6,51	4,95	3,03	87	793	58

English (1)	Italian (2)	Freq. (3)	List. (4)	Val. (5)	Int. (6)	Dur. (7)	Typ. (8)	%CC (9)	CRT (10)	Rank (11)
Hurt	Ferito (s)	62	0	−3,89	6,99	6,48	3,34	87	1019	120
Ill at ease/Sheepish	Disagio	27	7	−2,97	5,70	5,13	2,59	87	728	56
Impassive	Impassibile	8	0	−,78	3,77	4,30	1,60	50	848	138
Impatient	Impaziente di . . .	31	5	,53	6,87	6,60	2,52	53	848	103
Indecision	Indecisione	1	8	−2,74	5,20	5,70	1,83	73	865	129
Indifferent	Indifferenza	34	19	−2,09	4,04	5,21	1,62	80	790	117
Indignation	Indignazione	12	6	−2,47	6,03	4,90	2,40	73	865	114
Infatuation	Infatuazione	2	0	2,46	6,10	6,28	3,02	60	934	109
Insecurity	Insicurezza	4	21	−3,39	5,57	5,85	2,21	97	738	62
Interest	Interesse	89	9	3,48	6,68	7,82	1,93	60	788	111
Irritation	Irritazione	3	2	−2,70	6,65	5,24	2,51	90	769	78
Jealousy	Gelosia	57	23	−3,14	6,84	5,91	3,14	90	618	12
Jitteryness	Irrequietudine	1	13	−2,21	5,80	5,83	2,37	87	821	94
Joy	Gioia	229	122	4,09	7,67	7,02	3,69	90	651	1
Jubilation	Giubilo	2	1	3,25	5,14	4,81	2,78	70	775	67
Liking	Simpatia	42	17	3,79	6,96	8,38	2,19	97	664	45
Loathing/Repel	Ripugnanza	1	8	−3,61	5,76	4,54	2,35	87	802	96
Longing to	Anelare a . . .	9	0	1,50	5,79	5,91	2,20	40	1130	–
Love	Amore	764	119	4,56	8,72	9,11	3,57	93	669	3
Melancholy	Malinconia	54	21	−1,96	6,10	6,37	3,07	97	703	24
Mortified	Mortificazione	3	2	−3,51	5,59	4,35	2,67	73	942	122
Moved/Touched	Commosso	31	9	1,37	6,56	5,37	3,55	93	762	28
Nauseous	Nauseato	2	3	−3,56	5,75	4,66	2,29	73	824	110
Neglected	Trascurati (s)	8	0	−3,81	5,83	5,93	2,49	80	1019	140
Nervous	Nervoso	30	17	−2,83	6,96	6,70	2,42	77	818	75
Outraged	Oltraggiato	15	0	−3,51	5,72	4,71	2,24	53	870	123
Panic	Panico	12	22	−4,15	7,38	4,01	3,43	87	715	18
Passion	Passione	80	21	4,04	8,53	7,26	3,52	97	679	13
Perplexed	Perplesso	9	4	−,68	4,56	4,44	1,67	60	868	136

English	Italian									
Pining for	Struggimento	5	1	−2,47	5,72	4,30	2,87	67	819	74
Pity	Pieta'	119	11	−1,62	5,63	5,28	2,55	93	695	42
Pleasure	Piacere	228	22	4,26	7,79	6,81	3,36	90	714	20
Pride	Orgoglio	53	10	1,85	7,38	7,26	2,07	73	752	92
Quiet/Tranquil	Quieto	19	0	2,37	3,96	6,21	1,77	73	910	143
Rage	Collera	23	35	−3,14	7,58	4,73	3,37	90	737	15
Regret/Bewail	Rammarico	8	0	−2,66	5,56	5,35	2,47	80	954	132
Regret/Sorrow	Rimpianto	26	0	−3,25	5,93	6,04	2,47	83	824	105
Rejected	Rifiutato (s)	22	0	−4,29	7,03	5,29	2,69	77	998	134
Relief	Sollievo	40	4	3,46	6,75	5,53	2,82	83	806	70
Remorse	Rimorso	71	5	−3,68	6,67	5,94	2,84	83	727	47
Repugnance/Repulsion	Repulsione	3	6	−3,55	5,93	4,49	2,38	80	799	97
Resentment	Risentimento	14	5	−3,00	5,60	5,44	2,77	93	848	89
Respectful	Rispetto per . . .	160	3	3,17	6,48	7,87	1,77	57	1095	147
Sadness	Tristezza	76	88	−3,29	6,46	6,29	3,37	97	664	6
Satisfaction	Soddisfazione	1	23	4,12	7,90	7,00	2,95	97	844	48
Scorn	Sdegno	17	0	−2,60	5,57	4,44	2,53	90	775	85
Self-confident	Sicuro di se	33	14	3,66	6,28	6,23	1,84	60	736	95
Serene	Sereno	117	35	3,96	5,80	7,14	2,32	73	809	57
Shame	Vergogna	85	18	−3,45	6,23	5,22	3,31	87	806	34
Shock	Shock	3	4	−3,26	5,47	5,39	2,40	60	884	–
Shy	Timido	27	14	−1,67	4,83	5,85	2,05	83	721	73
Sorrow/Pain	Dolore	312	58	−4,09	7,49	6,22	3,06	87	728	11
Sorry for	Dispiacere	31	7	−3,35	6,45	6,41	3,05	90	717	35
Spite/Grudge	Rancore	43	32	−3,50	5,79	5,26	2,51	83	723	32
Startle	Trasalimento	1	0	−1,32	5,69	3,39	2,58	63	1038	–
Suffering	Patimento	2	9	−3,63	4,90	4,74	2,48	77	817	90
Surprise	Sorpresa	139	20	2,84	6,82	4,12	3,04	83	767	33
Suspicious	Sospettoso	55	1	−2,08	5,18	5,91	1,49	67	781	130
Sympathy/Understanding	Comprensione per . . .	10	8	2,51	5,59	6,82	1,83	63	1157	148
Tenderness	Tenerezza	36	16	3,75	7,16	7,07	2,97	100	674	25

English (1)	Italian (2)	Freq. (3)	List. (4)	Val. (5)	Int. (6)	Dur. (7)	Typ. (8)	%CC (9)	CRT (10)	Rank (11)
Tension	Tensione	42	12	−2,26	7,44	6,71	2,90	73	787	49
Terror	Terrore	67	33	−3,98	6,78	3,45	3,54	83	752	14
Torment	Tormento	26	2	−3,75	6,73	5,25	2,90	77	754	52
Trepidation/Trembling/ Tremulous	Trepidante	3	5	1,05	5,89	5,07	2,87	80	860	86
Triumph	Trionfo	47	0	3,93	7,80	5,38	2,86	43	798	71
Uneasy/Restless	Inquietudine	3	10	−2,78	6,26	5,69	2,67	93	801	69
Unhappy	Infelicita'	4	4	−4,18	5,64	5,54	2,78	90	663	37
Veneration/Worship	Venerazione	5	0	,66	4,81	4,55	1,98	33	911	137
Vengefulness	Vendetta	31	4	−2,43	6,80	4,83	2,17	77	718	79
Vigilant/Alert	Vigilanza	51	0	,44	4,20	5,78	1,32	10	647	–
Woe/Sorrow/Pain	Pena	172	3	−3,06	5,36	4,51	2,65	77	715	54
Wonder/Marvel	Meraviglia	64	9	3,10	6,19	4,38	3,15	90	757	39
Worry	Preoccupazione	18	11	−2,67	6,87	6,75	2,58	77	827	82
Zeal	Zelo	5	0	1,55	4,33	5,44	1,40	43	761	131
Item mean		45.1	14.6	2.94	6.16	5.50	2.61	78.0	801	
Item SD		86.4	23.3	1.00	1.00	1.14	.56	16.5	104	
Median		20	7.0	3.16	5.99	5.38	2.59	83.0	788	
Minimum item value		1	0	.32	3.55	3.21	1.32	10	618	
Maximum item value		764	122	4.56	8.72	9.11	3.69	100	1157	
Standardised item: Cronbach's alpha		–	–	.882	.908	.970	.870	–	–	
No. subjects		–	200	200	200	200	120	30	30	

Abbreviations: Freq., frequency of the term in Italian; *List.*, frequency of spontaneous listing of the term as "an emotion" (study 3); *Val.*, mean absolute valence (hedonic tone) rating of the experience denoted by the term (study 4), on a −5 (very unpleasant emotional experience) to +5 (very pleasant nul) scale; *Int.*, mean intensity rating of the experience denoted by the term (study 5), on a 1 (almost nul intensity) to 10 (very intense emotional experience) scale; *Dur.*, mean duration rating of the experience denoted by the term (study 7), on a 1 (very few seconds) to 10 scale (very long duration); *Typ.*, mean prototypicality rating (study 1), on a 1 (I would not call this an emotion) to 4 scale (I would definitely call this an emotion); *%CC*, percentage frequency of correct categorisation of the term as an emotion (study 8); *CRT*, mean correct reaction time (study 8); *Rank*, rank order of the term according to its factor score on the "emotionness" factor (see section C).