Chapter XVI
A Theory of Emotions Based on Natural Language Semantics

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ABSTRACT

A new theory of emotions is derived from the semantics of the language of emotions. The sound structures of 36 Old Arabic word roots that express specific emotions are converted into abstract models. By substitution from two tables, abstract models are converted into concrete theories about the nature of the specific emotions that are likely to be validated. Theories confirmed by the author’s own emotional experience (self reports), and by previously corroborated theories, are considered corroborated. These theories about specific emotions are woven together into an integrated theory of all emotions. The theory models emotions and emotional mechanisms, dimensions and polarities in ways amenable to affective computing. The findings are supported by clinical psychology. Old Arabic is chosen because its words, sounds and meanings are consistent and have not changed for at least 1,400 years. The theory can be expanded by incorporating additional emotional word roots from Arabic and other alphabetical languages.

INTRODUCTION

Synthetic emotions and affective computing are implementations of models of emotions. Such models are based on available evidence about emotions. Behavior (e.g., crying) and physiology (e.g., high blood pressure) offer vague information about how a person feels (e.g., sad, angry). Precise evidence only is available when a person describes his own emotional experience in his own words (Fussell, 2002).

To study such self reports, one needs to understand semantics—the nature of language meanings. However, different languages ex-
press emotions differently. For example, many languages have no exact equivalent to “emotion,” “sadness” or “disgust” (Goddard, 2002). Researchers, therefore, have looked for semantic universals—concepts that are shared among languages. Semantic universals that are related to emotions are emotional universals.

Some have suggested as emotional universals English terms such as disapprove and blameworthy that describe causes of emotions (Goddard, 2002). Others have suggested terms such as loss and offense that describe conditions leading to emotions (Goddard, 2002). Still others believe that such complex terms are not shared among languages (Goddard, 2002). Instead, they propose as semantic universals simple terms that have exact equivalents in all languages, such as person, good, bad, think, know, feel, do, and happen (Goddard, 2002). By looking for the simplest common denominator, however, one risks missing semantic universals that are not simple.

In an attempt to be both universal and comprehensive, the author has looked for semantic commonality among languages at the most abstract level: by analyzing the relations between sounds and meanings in Old Arabic (Adi, 2007). Many sounds are shared among languages, and these sounds are signs that point to abstract semantic universals (Adi & Ewell, 1987a, 1987b, 1996).

Consider, for example, the sound “f.” It represents the abstract semantic universals open-self and manifestation. For the “f” in feel, these abstract universals can be realized as opening oneself to outside manifestations. For the “f” in fear, the universals are realized as negative event. Negative is a realization of the universal open-self. Event is a realization of manifestation. For the sound “f” in fear, the universals may have an alternative realization: vulnerable status. Vulnerable is a realization of open-self. Status is a realization of manifestation. For the “f” in Arabic uff, a complaining term, the universals are realized as negative event, just as in English fear.

The sounds of human language point to abstract universals that each have many possible realizations. Combined in a word root, these sounds produce ambiguity: multiple meanings. Thus, even emotional word roots that are ambiguous can be included in the evidence studied to understand the nature of emotions.

The structure of the sounds in an emotional word root reflects some aspects of the structure of the emotion itself.

The task of developing a theory of emotions has required researchers to perform long and tedious tests of many proposed theories in order to corroborate, given good luck, a single one of them. It would be much more efficient—a scientist’s dream—to have an algorithm that generates promising theories, i.e., ones that are likely to be corroborated. Fewer tests are then required and success is almost guaranteed.

The purpose of this chapter is to introduce such an algorithm that is based on natural language semantics, and to employ it to develop a theory of emotions. First, theories that explain specific emotions are developed. Then, those theories are woven into an integrated theory of emotions.

The algorithm generates promising theories about specific emotions from the structure of the sounds in Old Arabic word roots that express those emotions. The theories are checked against the author’s own self reports and against each other. If there is a clash, alternative theories are tried.

The algorithm can be applied to English and other alphabetical languages. But those languages have changed over time, making it difficult to identify original meanings, word roots and sounds. Old Arabic is chosen to lay the foundations of the theory because its sounds, word roots and their meanings have not changed for at least 14 centuries.

The 28 Arabic consonants and four vowels still are the same. The meanings and sounds of the around 1,750 basic Arabic word roots are preserved in literature that also is over 14 centuries old. This literature uses word roots in precise