EMOTIONS

Essays on Emotion Theory

Edited by

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Preface

This volume is a collection of essays on emotions, their significance, and how they function. For most of us, emotions are simply what we feel. They give our lives affective value. Scientists, however, approach emotions differently, some considering the "feeling" aspect to be of little relevance to their research questions. Some investigators consider emotions from a phenomenological perspective, others believe that the physiological bases of the emotions are of prime importance, still others observe and study animals in order to generate hypotheses about human emotions. This volume contains essays that represent each of these approaches. It is, therefore, in one sense a heterogeneous collection. Nevertheless, the variety of approaches and interests come together, since these scholars are all operating from a more or less cognitive psychological orientation and use the same conceptual reference scheme. These essays are written by experts in their own area and they reflect the richness of research in emotions. Whether these approaches and opinions on the emotions can be harmonized in a single theory of emotions is a question that the future will have to answer. Thus, although it is obviously desirable at this moment in time that there be "cross-fertilization," we are not yet ready for a complete synthesis of concepts and approaches.

We offer a brief summary of the main issues raised in each of the essays. Before we begin, we first point out that the essays have been grouped together under three general sections: the energetic and structural aspects of emotions, the expression and consequences of emotions, and social interaction and emotions.

In the section on the energetic and structural aspects of emotions, the issues discussed are the anatomical and neurological bases of the emotions. Cognitive psychophysiology provides a bridge between these levels of research.

Some researchers confine themselves to a limited number of hedonic states (positive and negative feeling states) and use a structuralist approach. Zajonc describes how subjective emotional states can be produced by emotional efference governed by changes in hypothalamic temperature. Emotional expressions have been explained sometimes as an adaptively valuable development because they enable an animal to broadcast information about its internal states to others in its vicinity. In Zajonc's view, outward behavioral actions, and especially facial efference associated with an emotional episode, may have a different function, namely the modulation of hypothalamic temperature. Zajonc presents evidence for his thesis from human research on, among other things, facial efference, phonetic utterances, and music appreciation, as well as data from animal research.

In his research, Gray, using animal models, argues that emotions may be conceived of as central states elicited by reinforcing events; different emotions may therefore be regarded as corresponding to a specific subset of reinforcing events. Each emotion, thus defined, is mediated by a separate subsystem in the brain. The key areas are the limbic system and the basal ganglia. From this general approach to the neuropsychology of emotion, Gray proposes that the mammalian brain contains three fundamental emotion systems: a fight/flight system, a behavioral inhibition system, and a behavioral approach system. This model is used for a taxonomy of several psychiatric conditions including anxiety, panic, addictive behavior, depression, schizophrenia, and obsessive-compulsive disorder. Gray suggests that his model can also serve as a framework for understanding the relationships between normal variation in personality, mood, and reinforcement.

The essay by Lang functions as a bridge between the *structural* approaches and the cognitive approach to emotions. He postulates a motivational continuity from reflex reactions to complex, cognitively elaborated emotional expressions. Responses are motivated by either the positive-appetitive or the negative-aversive brain systems. Lang uses the "startle probe reflex" as a method of evoking automatic emotional reflexes. Reflexes evoked during emotional processing are augmented if their affective valence (positive or negative) matches that of the active motivational system and inhibited in the event of a mismatch. Lang shows that probe responses are reliably potentiated during perception and imagery of unpleasant events and reduced during pleasant events. The essay concludes with a presentation of the neurobehavioral foundations of this conceptualization and an elucidation of the implications of probe analysis for theories of emotion organization as well as the assessment of mood and memory.

One of the liveliest debates in the field of emotions is the relation between affect and cognition. Some hold that affect determines cognition, others that cognition determines affect. In the section on emotional expression and consequences, Bradley argues for a dimensional view of emotion. She presents evidence from her own work and that of others that emotional stimuli can be

profitably viewed as varying along two primary dimensions: affective valence and arousal. The issues addressed in her chapter exploit this organization of emotion to determine the influence of the two dimensions and their interaction on emotional processing using psychophysiological response and performance in memory tasks where affective slides or sounds varying in pleasantness and intensity are used as prompts to emotional experience. The influence of these dimensions is then assessed using several different measures of memory. Bradley's conclusion, that arousal (intensity) plays a key role in memory performance, leads to a discussion of neurophysiological and cognitive processes possibly responsible for these mnemonic effects.

One of the most important sources of information on emotions is the recall of significant life events. Reports of emotional experience are replete with information about the time course of individuals' responses to emotion-eliciting situations. Gilboa and Revelle use such data to study the temporal structure of emotional responses and their interaction with personality. Specifically, they describe a study designed to examine the relation between personality and different characteristics of affective reactions to positive and negative life events. In this study, subjects read descriptions of naturally occurring life events which varied widely in their emotional significance on both positive and negative dimensions. They then rated various aspects of their expected emotional responses on both types of affect. With regard to the temporal structure of affect, considerable differences were found between responses to positive and negative events, thus supporting the independence of differently valenced reactions. As for the interrelationship of affective response and personality dimension, neuroticism was related not only to the amplitude but also to the duration of negative emotions. Impulsivity, in contrast, was related only to the amplitude of positive emotions.

Two important channels for communication of emotions are the human face and voice. Following a discussion of some of the differences between facial and vocal expression, Scherer's chapter introduces the notion of *affect bursts*, brief, discrete expressive reactions that consist of synchronized changes in the facial and vocal channel of communication in response to affectively charged events. Although the vocal part of such affect bursts (interjections) has received some attention from students of language, the phenomenon as an integrated vocal/facial expression is curiously underresearched. Scherer's discussion focuses on the origin and function of affect bursts, on whether they are produced spontaneously or intentionally, and on their appearance in raw or conventionalized (emblematic) forms.

Because people can communicate their emotions to those around them, it is evident that social environment may play an important role in determining which emotions may arise and be expressed in a given culture. Section III addresses the topic of social interaction and the generation of emotions. One aspect of social comunication is ritual behavior, which van Hooff and Aureli examine from an evolutionary point of view. In their view, the reason for the manifestation of

emotions and their ritualization is to manipulate the larger group. This requires reaching a balance between social harmony on the one hand and the disruptive force of social competition on the other. Conflicts of interests, especially when they lead to agonistic interactions, should not be allowed to disturb relations that have other values. Recently, reconciliation behaviors have been studied in primates. Van Hooff and Aureli present studies that suggest that by offering or withholding reconciliation an animal can manipulate the levels of social uncertainty and stress of its partners, depending on the value the relationship concerned has for the animal in question.

In human research on social emotional interaction, Taylor, Aspinwall, and Giuliano present a theoretical analysis and data concerning the emotional consequences of receiving information about other people. As research on social comparison processes indicates, comparisons of one's self with others can produce emotional consequences. The authors suggest that automatic reactions to social comparison information produce contrast effects, including positive emotional reactions to those perceived to be worse off and negative emotional reactions to those who are perceived to be better off. More thoughtful responses to social comparisons produce assimilative emotional reactions, negative responses to downward comparisons and positive responses to upward comparisons. Their chapter also details situational and individual difference moderating factors that are likely to influence emotional responses to social comparison information, such as threat, self-esteem, empathy, and perceived similarity.

In the last three chapters, the binding and disruptive forces of social interaction and their effect on emotions are discussed. Human social behavior is governed, in part, by the cultural values to which people subscribe. In Mandler's discrepancy/evaluation theory, arousal and cognition are the bases of emotional experience; values are addressed as the cognitive contribution to the constructed emotional experience. Values arise from the discrepancies and contradictions we experience, as well as from the sense of comfort we derive from the expected and the familiar. After a brief presentation of some applications of this theory, this analysis is extended to the psychological aspect of freedom. A distinction between natural and constructed liberties is presented, and the emotional aspects of natural liberties are discussed in terms of the experiences of feeling free and unconstrained and their converse, experiences of constraint and inhibition. Power relationships impose constraints and negative emotional experiences on the powerless and a lack of inhibitions and positive emotions on the powerful.

In his chapter, Frijda explains why the desire for vengeance poses a challenge for emotion theory. It is a universal and often extraordinarily strong instigator of action, yet there is no satisfactory account of both its universality and strength. Whereas current emotion theory views emotional impulses as in some way adaptive and rational, vengeance would seem to bring the individual no obvious gain: Vengeance usually cannot undo the harm that has elicited the desire. Frijda proposes first that the desire for vengeance involves a universal, and perhaps

innate, disposition to answer harm received with harm to the antagonist, and for that reason (and in that sense) has a claim to being a "basic emotion." Second, Frijda suggests that desire for vengeance illustrates a class of emotions the utility of which goes beyond coping with the eliciting event as such. Finally, he contends that the desire for vengeance is rational and adaptive in tending to restore power inequality, self-esteem, and sense of identity, and thereby provides some relief from the pain caused by harm or humiliation.

Solomon also addresses the notion of vengeance in his chapter. The question, "What is justice?" has been answered by philosophers since Socrates in terms of the supremacy of reason and rationality. Solomon's thesis is that there can be no adequate understanding of our sense of justice without an appreciation and understanding of the emotions. This includes not only benign "moral sentiments" such as sympathy, care and compassion, and other "fellow-feelings," but also the nastier emotions of envy, jealousy, resentment and, especially, vengeance. In his essay he analyzes compassion (what used to be called "sympathy") and vengeance, which he defends as an essential aspect of retributive justice. In his opinion, one cannot develop a theory of justice without a substantial grounding and engagement in the empirical knowledge of how people actually feel and behave. Solomon thus claims that philosophy needs psychology and that an adequate founding of justice cannot but be grounded on both.

This collection of essays reflects current approaches and issues in the study of emotions. Behavioral scientists have in the past emphasized the need for objectivity in their research, sometimes to the extent that objectivity has become an end rather than a means in scientific enquiry. By virtue of the fact that emotions contain a large element of subjective private experience, it appeared to many behavioral scientists that they were not a proper domain of interest. This perspective has changed. Emotion is now seen simultaneously as a subjective experience and a domain of objective inquiry. This has only become possible by viewing emotion in a way that makes it open to testable hypotheses.

This volume is in honor of Nico Frijda. One of Nico Frijda's major contributions has been the development of a model of emotions that presents a set of constructs that can be experimentally investigated. Most models of emotion are restricted in the amount of subjective experience that they describe and can handle, because they confine themselves to the study of appraisal patterns. The unique contribution of Frijda has been to draw attention to another distinguishing feature of emotion, namely the experience of action readiness. He argues that emotions not only differ in how the emotional situation is construed but also in the accompanying action tendencies or other modes of action readiness.

The recent resurgence of interest in emotions has brought about a reconsideration of the influence of the emotions on other psychological processes. This can be seen in the relation between cold and hot cognitions. In this volume it becomes evident that an adequate account of memory requires acknowledgment of the influence of emotion on recall and retention. Similarly, the formation of

human attitudes and social relations can only be properly understood when the role of the emotions is taken into account. Finally, the intensity of emotions and the differentiation between emotions is seen to be related to (neuro)physiological and biochemical processes. Although clinicians have long been concerned with emotions, the recent development of emotion theory has offered new approaches to studying clinical phenomena such as anxiety, depression, and even the taxonomy of mental disorder.

This volume represents a brief and up to date overview of the field of emotions. It indicates what has and has yet to be done.

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PART III: SOCIAL INTERACTION AND EMOTIONS

I ENERGETIC AND STRUCTURAL ASPECTS OF EMOTION

1 Emotional Expression and Temperature Modulation

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The contributions of Nico Frijda to the study of emotions are so broad and they cover so many aspects that there is little to add. After having looked at the writings of Frijda on the subject, one is convinced that all the important things have already been said *by him*. It is therefore both a great honor to be associated with this event that honors his work and at the same time a challenge. For on this occasion one needs to say things that at least approach in depth of insight those things that he has discovered, conceptualized, clarified, and integrated. One is proud and humbled at the same time.

I wish to begin this chapter with one of those insightful Frijda thoughts. In his volume, *The Emotions,* Frijda had something very important to say about behaviors that are usually called "expressive." They are those that are

> evoked by events that an observer, or the subject, understands as aversive or desirable or exciting. They serve no obvious purpose in the same sense that instrumental and consummatory behaviors do. They are called "expressive" because they make the observer attribute emotional states to the person or animal concerned. They do so even when no eliciting event can be perceived by the observer. They make a mother look for the undone safety pin in the baby's diaper, or cause a child to be frightened of the dog someone else is frightened of. (1986, p. 9)

There is a great deal of insight indeed in this short quotation—insight and wisdom. For this brief thought alone incorporates almost all of the most important aspects of the theory of emotions. It does so by what it does not assert. For it does not assert that expressions are the manifestations of internal subjective states, and very carefully does not assert or imply that they are the effects of autonomic processes. It does not assert that they are voluntary or involuntary

communicative acts. But it does very clearly begin the story by focusing on the fact that their quality of being "expressive" lies in the ability of the observer, and even the "expressor," of attributing to them a connection to internal emotional states. There is an enormous difference between saying that the so-called expressive behaviors manifest internal states and saying that they can be used by observers to make inferences about these states. There are only indirect grounds to justify any of these assertions that some scholars take for granted.

The second very important insight in the short paragraph makes expressive behavior part of an important social process. An expression may "*make* (italics added) a mother look for the undone safety pin," Frijda said. Later (p. 11) he said that " 'expressive' movements *produce actual effects in the interaction with environment*" (italics added). "Expressive behavior is behavior that establishes, weakens or breaks, some form of contact with some aspect of the environment" (p. 13). These statements assert, without making any prior decisions about the origin of expressions, that they have true and significant social effects. Frijda's view makes emotions inevitably social phenomena that are to be treated with the concepts of social psychology.

This short, deceptively simple and innocent introduction to Frijda's volume in *The Emotions* presented us with insights that changed the study of emotions. We will never be able to think of these phenomena as isolated neural programs underlying distinct emotional categories. We have looked for these programs for 100 years and Frijda is telling us that we have little chance of finding them. We must now look at the emotions as rich aspects of social lives—aspects that implicate almost all psychological phenomena. For we can find a significant participation of emotional elements in psychological processes ranging from classical conditioning to social conformity, from memory to collective representations.

In this chapter I concentrate on the expressive aspects of emotions, taking as my point of departure Frijda's very careful definition of *expressions* as behaviors that might allow an observer or the participant to infer the presence of emotional states.

PREEMPTIVE CONCEPTS IN THE STUDY OF THE EMOTIONS

It is very important to be careful about the term *expression of emotion*, as Frijda was, because *expression* is one of those preemptive terms that provide us with a ready-made theory or explanation before all the facts are in, and often before any facts are in. These preemptive terms taken from everyday language will make us look at a phenomenon with a great deal of prejudice. There are quite a few such preemptive terms in psychology. Take the term *retrieval*. It implies that there must be a "store," that there must be a "search" through that store, that the store

holds intact distinct items, that there is a way of "locating" the item being searched, that this item remains unchanged and stable in the course of the search, and that it is somehow brought into consciousness as a communicable and intelligible response. There is hardly any evidence for these strong assumptions.

Expression is such a preemptive term, as well, and it has been with us for centuries. We have taken its meaning for granted, and Darwin used it taking it for granted that there is something internal that is being manifested by expression. The meaning attributed to *expression* by Gratiolet (1865) and Piderit (1867) made less claim about it representing internal states, for it was more closely tied to the sensory system. Thus, for example, the protrusion of the lower lip in disgust was considered by Gratiolet as a simple generalization of the instinctive instrumental reaction emerging when an unsavory substance enters the mouth—a reaction designed to expel the substance. To Gratiolet, the lower lip protrusion upon hearing an absurd idea was not a manifestation that an intellectual examination has terminated in a feeling of contempt for what was presented, but an instinctive gesture of disgust seeking to expel the idea from one's consciousness as one expels a rotten oyster. From Darwin on there was a theory embodied in the word "expression." It meant (a) that there is a distinct internal state for each emotion, (b) that this distinct state seeks externalization of a distinct form, (c) that there is a one-to-one correspondence between the internal state and its outward manifestation, (d) that there is to be found a "triggering" neural process that can connect the internal state to its externalized output, and (e) that the internal process has sufficient energy directed toward its own externalization, but that under some circumstances it can be "suppressed" by a process requiring even greater energy.

That is quite a bit of meaning and theory to be contained in one word. I call *expression* a preemptive term because it preempts a theory yet to be developed. In the case of the emotions, there is yet to be solid evidence about any of the above five points about the emotions when we speak of their "expression." It is indeed quite difficult to resist the temptation to use the term *expression* in its rich meaning. So much more immediately comes to mind. But very little of it is confirmed or known. Clearly, Frijda was well aware of this temptation and he took great care in his explication of the emotional processes and their expressive correlates in his work.

An important fact that complicates our understanding of the emotions and that was recognized explicitly by Frijda (1986), is that the correlation between the so-called expressive movements and internal subjective states or their autonomic correlates is very unstable and quite low (Stemmler, 1989; Wenger & Cullen, 1958; Zajonc & McIntosh, 1992). There are internal states that do not manifest themselves externally either in motor behavior or in autonomic activity. Equally, there are emotion-like external movements that have no underlying internal correlates. You say CHEESE and you look like you are happy. But it is only an utterance. Or is it? We shall see that there is in fact more than just the utterance.