

## INTRODUCTION: EXPRESSION OF EMOTION

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If Charles Darwin were alive today, he would certainly have been pleased, and probably blushed, to witness the empirical and theoretical developments that his 1872 book, *Expression of Emotion in Man and Animals*, generated. The first four chapters in this part pay homage to Darwin, reviewing literature on how emotion is expressed in the face (Keltner, Ekman, Gonzaga, & Beer), by voice (Scherer, Johnstone, & Klasmeyer), and in language (Reilly & Seibert) in humans, as well as in displays across various nonhuman species (Snowdon). These four chapters generally suggest, with the occasional qualifications that empirical study inevitably requires, that select emotions are communicated in distinct facial and vocal displays and in language, and that this is so across different cultures and in different species.

The last two chapters of this part broaden the meaning of emotional expression and ask how emotion is expressed in different art forms, a question that dates back to Aristotle, and certainly earlier. Gabrielsson and Juslin apply methods used in the study of facial expression and voice (i.e., encoding and decoding studies) to address whether and how emotion is communicated in music. Oatley explores the thesis that emotion, and especially misunderstood emotion, inspires expression in pictorial arts, architecture, and literature.

Much in these chapters would likely have been familiar to Darwin—in particular the interest in the evolutionary history of expression, culture and universality, the biological roots of expression, and the focus on discrete emotions. At the same time, the chapters consistently reveal

how scholars are taking the study of expression in striking new directions. Scholars are exploring how emotion is communicated in new modalities (language, odor, music). They are exploring relations between expression and central nervous system activity. Careful, observational research is revealing new functions of emotion (e.g., see Snowdon on how expression regulates reproductive physiology). And there are now systematic studies of how emotion varies according to culture, personality, and development.

In this chapter, we bring together the convergent insights offered by the different authors of this part. We summarize where the field stands on many of the questions that Darwin posed (e.g., How is emotion expressed? Are these expressions universal?). At the same time, we highlight new developments in the field and suggest directions for future research.

### Expression of Emotion

The field of emotional expression looked very different 20 years ago. Most of the literature focused on the face, and most of the research was judgment studies of a limited set of emotions. There was little examination of how emotion is expressed in the voice, body, or language. Scholars in the nonhuman literature were reluctant to ascribe emotion to displays of nonhuman species.

The chapters in this part reveal how fast and far the field has moved in the past 20 years. Although many cen-

tral questions are the same (How is emotion expressed? How are expressions perceived?), the extensions and discoveries are remarkable. The review of Keltner, Ekman, Gonzaga, and Beer indicates that select emotions have distinct facial expressions. Scherer, Johnstone, and Klasmeyer reveal that this is also true in the study of vocal expression. Snowdon's review suggests that many human displays of emotion have parallels in nonhuman species (and many displays of nonhumans point to interesting candidates in humans, as we detail later).

These findings are not likely to surprise the long-standing student of expression. In other ways, however, the chapters in this part reveal how much more complex the field's view of expression is than it was 20 years ago. For example, one widespread critique of the literature on expression is that researchers have focused on a limited set of emotions. The empirical studies have emphasized anger, contempt, disgust, fear, happiness, sadness, or surprise, but most theorists and lay people recognize many more states as emotions. The chapters here suggest that more emotions may be expressed than previously thought (and taxonomies that are based on expression may need revision). Chapter 22's review of recent studies indicates that love, sympathy, amusement, and embarrassment may have distinct nonverbal displays that satisfy the criteria used to establish other displays. Snowdon's chapter suggests that there may be more signals of positive emotion than have been assumed, and this is an immensely important possibility—namely, that in nonhuman primates there are coos and girns related to affiliative contact, copulation calls, and food calls, all of which may have counterparts in humans.

Another widespread critique of the literature on expression is that research has tended to focus on prototypical displays of emotion (and many call into question the ecological validity of these displays). Less systematic attention, this critique continues, has been given to the variants of expression within any category. The view of expression represented by the authors in this part is more complex. They argue that each emotion is likely to be expressed by an array of related displays. Thus, Scherer notes that there are different vocal signals for the same emotion. Reilly and Seibert say that there are many kinds of facial displays and linguistic devices likely to signal emotion in the course of speech. And Gabrielsson and Juslin argue that the different acoustic cues of emotion in music are likely to have probabilistic relations to emotion. A major task for future research is to ascertain the different expressions for each emotion, and the extent to which different expressions (or components) covary with emotion.

More generally, the chapters in this part indicate that emotions are expressed in multiple channels, including the face and voice, and through words, prosody, and grammatical devices. Snowdon reviews fascinating studies indicating that certain affective states—for example, those

related to sexual desire—may be communicated in odors in other species, for theoretically interesting reasons. Almost no work has been done on odors and emotional expression in humans.

The multiple modalities of emotional expression raise several fascinating issues. Little is known about how these different signals interact, and Reilly and Seibert offer provocative ideas on how language and facial expression gradually dovetail in their functions with development. The different signals most certainly vary in their time courses, which raises interesting questions about the boundaries of any particular emotional episode (e.g., certain signals will last longer than others). It is also likely, as Scherer, Johnstone, and Klasmeyer suggest, that the different emotions may be more reliably signaled in one modality than in another (e.g., disgust is reliably signaled in the face but not in the voice).

Finally, the chapters by Gabrielsson and Juslin and by Oatley ask why art is expressive of emotion. Music, it appears, conveys emotion with many of the same cues as does the human voice. In judgment studies, observers are just as accurate in identifying the emotional expression of music as they are in judging the human voice. Oatley considers how certain emotional experiences—namely, misunderstood emotions—propel artists to express emotion in the artistic flights of their imagination. This sort of speculation may inform research on why people enjoy art and why they engage in artistic acts. Continued focus on the connections between emotional experience and the arts is likely to yield illuminating insights into the nature of expression, the nature of art, and why we express emotions in the first place.

## The Perception of Emotional Expression

Judgment studies of expression, perhaps the most widely used method in the literature on expression, have addressed whether people across cultures agree in their judgments of different emotional expressions. These studies do indicate that there is agreement across cultures in judgments of the expression of emotion in the face, voice, and music. This appears to be true when different response formats are used, contrary to recent critiques, and when respondents offer answers of their own choosing rather than based on experimenters' terms.

More recent studies highlighted in the chapters of this part reveal how much more complex is the perception of expression than simply labeling an individual's behavior with an emotion term. Social observers make a variety of inferences from a single facial expression. For example, chapter 22 reveals that from fleeting facial expressions observers make inferences about intention, personality, and social relationship, and about objects in the environment. More systematic treatment of these sorts of issues is

ded to explore how social observers make inferences about traits from the expression of brief states, and whether they are accurate in these inferences.

Several articles suggest that expressions of emotion evoke emotion in observers. Given what is known about how emotional experience shapes social judgment (chapter 30, this volume), it is clear that evoked emotions are likely to play an important role in the judgment of emotional expression. Little is known about this possibility.

The aforementioned comments raise perhaps a more intriguing question: How do we perceive expressions of emotion? The chapters in this section offer different answers to this difficult question. Some authors contend that the perception of emotion is located in certain central nervous system structures, and that this localization may even be modality and emotion-specific (Keltner, Ekman, Gonzaga, & Beer; Scherer, Johnstone, & Klasmeyer; Snowdon). This kind of research may eventually illuminate the complex and dynamic process by which observers perceive expressions and infer meaning from expressive behavior.

Other authors address the units of meaning that facial expressions convey. Certain studies of the face indicate that the perception of facial expression is categorical rather than dimensional (Keltner, Ekman, Gonzaga, & Beer). Scherer, Johnstone, and Klasmeyer, and Gabriellsson and Juslin, on the other hand, identify how perceptions of voice and music center on basic dimensions of meaning. Integrating the discrete and dimensional perspectives as they apply to the perception of expression remains one of the central questions in the field.

In reading these chapters one is struck by how actively social observers perceive the expression of emotion, and how relatively little is known about this process. Oatley asks how it is that individuals perceive emotion in pictorial art and literature, and provides theoretical guidance for answering the questions raised in this section. He suggests that, when reading of a literary character's expression of emotion, readers experience emotion via mental simulation processes. That is, they imagine how they themselves would feel in such a context. This may be true of the different arts that express emotion discussed in this part, and for the perception of emotion in everyday interactions as well.

### Expression in Culture and Context

A long-standing tension in the study of expression centers on the extent to which emotional expression varies according to social context and culture. The chapters in this part clearly move beyond simple assertions that expression is culturally constructed or universal. One is struck by the variety of ways in which context shapes emotional expression. Several authors (e.g., Scherer, Johnstone, &

Klasmeyer; Snowdon) reveal how basic features of the physical context (e.g., the distance between individuals, ambient noise) dictate the nature and selection of signals. More social features of social situations also shape emotional expression, including the familiarity of individuals as well as their status relations (Keltner, Ekman, Gonzaga, & Beer; Snowdon). And culture clearly shapes how emotion is expressed (for example, in music see Gabriellsson & Juslin) and how it is interpreted (Keltner, Ekman, Gonzaga, & Beer).

The influence of context on emotional expression and perception remains a line of inquiry rich with intellectual promise. This research will be promoted by characterizations of emotional expression that allow for variability within an emotion category, as evident in these chapters. The study of culture, context, and expression will progress with greater attention paid to recent advances in the study of culture and context (see chapter 46, this volume).

### Individual Variation in Expression

The field of affective science has seen great progress in delineating what emotions are, which sets the stage for researchers to ask how individuals vary in emotional expression (e.g., see chapter 34, this volume). Several authors turn their attention to individual variation in emotional expression, with provocative results. It does appear that individuals vary, according to their personality, in how they express emotion in the face and voice. The same is true for emotional disorders such as depression, which have certain emotional signals. Given the central role expression plays in social life, individual variation in expression is likely to have important social outcomes and contribute to the cumulative consequences of temperament, personality, and emotional disorders.

### Theoretical Developments

The chapters in this part highlight how the study of expression is intertwined with theoretical advances in the field of emotion. Studies of expression are germane to discrete and dimensional approaches to emotion, to questions of how emotion is universal and how it is culturally variable, and to individual differences in emotion.

Snowdon's chapter on the differing theoretical approaches to animal display highlights an interesting theoretical trend in the study of expression that prompts our final comment. According to Snowdon, a first approach holds that displays are reliable readouts of internal feeling and intended action. A second holds that displays are deceitful and designed to manipulate. A third holds that displays are dynamic processes that manage relations. One dramatic illustration Snowdon cites in developing this

third view is the literature on display and the regulation of reproductive behavior. Various calls and odors regulate ovulation and sexual readiness.

This regulatory view of expression, with certain precedent in Darwin and those who followed Darwin, has emerged in the study of human emotion as well. The approach assumes that emotions regulate important interactions in relationships (e.g., attachment, flirtation) as they unfold, and the view generates several more immediate empirical questions. Researchers should systematically look at the observers' responses to others' expressions of emotion, to identify how those responses result in coordinated interactions between the individuals who express emotions and the individuals who perceive them. Sequences of expressions between individuals may be the more appropriate unit of analysis. More generally, this

suggests that the field may benefit by returning to the study of expression in natural contexts.

### Concluding Thoughts

The study of expression has made great progress, as evident in the chapters of this part. Those in the field know a great deal about how emotions are expressed, how they are perceived, and how these processes vary across cultures and individuals. Yet the study of expression is really still in a nascent state and awaits basic research on the issues that have been identified (e.g., there are very few cross-cultural studies of how emotion is expressed in any modality) and on additional matters that await discovery.