Approaches to Understanding Emotions

Why is every critical moment in the fate of the adult or child so clearly colored by emotion?

(Vygotsky, 1987, p. 335)
Introduction

After winning an Academy Award for his movie *Up*, Pixar director Pete Docter was searching for a fresh subject for his next film. What captured his imagination was something close to home: the emotional fluctuations that he saw in his 11-year-old daughter Elie, who was experiencing her transition to adolescence. Adolescence is a notoriously emotional time. The delights and joys of childhood come to be replaced by doubts, anxieties, and self-consciousness. It is not uncommon for preadolescent girls to experience such feelings. As Pete Docter watched his daughter go through emotional changes of this kind, he arrived at the subject of his next film—the emotions.

To understand his new subject more deeply, Docter immersed himself in the science of emotion you are about to study (and reached out to one of the authors of this book (D.K.), to serve as a scientific consultant for the film). He read the previous edition of the book you are just beginning to read. He pored over scientific articles. He asked questions such as: How many emotions are there? Why do we feel emotions such as sadness or anger? What are the subtle ways in which we express emotions? How do emotions shape how we perceive the world? When we remember an emotional event in the past, how much of that recollection is faithful to what happened? The scientific answers to the aforementioned questions became a foundation of his film, *Inside Out*.

*Inside Out* is about the emotional turmoil that Riley, an 11-year-old girl, experiences as she and her family move from Minnesota to San Francisco. It is a traumatic move, as so many are. Riley must leave behind her best friend, joyful times of ice-skating with her parents, and the passion of her childhood—her hockey team. She moves into a spooky Victorian house in San Francisco, that, without the family’s furniture, fills her dreams with ghosts. Alone, she must make her way at a new school and the navigate judgments of middle-school girls, who can be contemptuous critics of character. What is unique, though, about *Inside Out* is that alongside Riley and her parents, the central characters in the film are five emotions in Riley’s mind—Anger, Disgust, Fear, Joy, and Sadness (see Figure 1.1).
Inside Out dramatizes two central insights about the emotions that are contained within its title. The “Inside” of Inside Out refers to how emotions shape the inner workings of our minds and identities. If you watch Inside Out you’ll notice how the five emotions vie for control over a console in Riley’s mind, and once in charge, if only for a second or two, they arrange how Riley perceives her present circumstances. For example, in one scene, when Riley’s dad offers to walk with her on her first day of school, Disgust, played by Mindy Kaling, rejects this mortifying possibility, prompting Riley to politely decline her dad’s offer. Emotions also guide how Riley thinks about the past. In one of the more poignant scenes in the film, Sadness, played by Phyllis Smith, adds a blue tint to Riley’s joyous, yellow-hued memories of her idyllic childhood in Minnesota. Emotions shape the workings of our minds.

The “Out” of Inside Out refers to how emotions guide our behavior in the social environment. For example, Anger, played by Lewis Black, drives Riley to compete fiercely when playing hockey and to storm upstairs after a temper tantrum directed at her parents. Sadness prompts thoughtful, wise action, guiding Riley to comfort her imaginary friend Bing Bong when he has lost the wagon in which they had played during Riley’s childhood. At the end of the film, Riley reunites with her parents after a brief attempt at running away. If you watch this scene closely enough, you will see how emotional embraces and sighs are at the heart of their shared affection. Emotions shape our social lives.

Inside Out went on to win an Academy Award in 2016 and made it into most lists of best-films-of-the-year. But in important ways its influence is more enduring; it would offer a new view of what emotions are to a worldwide audience and one in keeping with the science of emotion that you will explore in this book. For over 2,000 years, some thinkers have argued that our emotions are irrational and destructive. The more noble reaches of human nature are attained, this reasoning continues, when we control our passions with our reason. In this book, as in Inside Out, we arrive at a different view. Emotions are vital to adapting to the social environment. They shape how we perceive the world and guide important courses of action, such as committing to a romantic partner, fighting for justice, or consoling a friend. Emotions are the very foundation of our sense of identity, our moral judgment, and our relationships. They are vital to our pursuit of the meaningful life. To lay a foundation for these ideas, let’s first look at how the study of emotion emerged. As we do, we will take on a particularly vexing question: what is an emotion?

What Is an Emotion? First Ideas

We have all experienced emotions, and in this sense we know what they are. But emotions are difficult to define in precise terms. In fact, such difficulties are rather usual. We all know what a tree is, even though we don’t know its proper definition. We all have a sense of beauty or justice, but when pressed to define such concepts often fail to find the exact language. It’s one of the wonderful properties of language to be able to refer to things even when we don’t know exactly what we mean (Putnam, 1975). To arrive at a useful definition of something as complex as emotion, you need a good theory. With the help of this book, we hope you will formulate your own good theory of emotion.

Let’s begin to characterize emotion, so that we can agree upon roughly what we are talking about. An emotion is a psychological state that relates an event, usually out there in the world, but sometimes in the mind, to what Nico Frijda (e.g., 2007) called a concern. It prepares the person for action. What this makes clear is that one central component of an emotion is an internal experience, a state that reflects a present context relevant to the person’s goals (Lazarus, 1991). A result is that, as Sylvan Tomkins (whose work we discuss later in this chapter) has said: the emotion gives priority to one goal over others. It gives that goal, or concern, urgency. If you are crossing the road, and nearly get run over, your concern for self-preservation takes priority: you are motivated by fear. The urge is to jump back onto the curb. If you fare well on a test you’ve
studied hard for, your concern for being esteemed by others is made salient: you feel pride, and may be inclined to tell your parents, or, in worse moments, show off to your friends in hubris (Tracy, Weidman, Cheng, & Martens, 2014). As these examples illustrate, emotions relate events to our personal concerns, and prepare us, as Nico Frijda has argued, to act in response to events in the environment (Frijda, 1988, 2007; Scarantino, 2017a). Emotions, then, are states triggered by events related to our concerns and that motivate action. So, rather than thinking that emotions are irrational, psychologists now tend to think of emotions as being locally rational: they help us deal adaptively with concerns specific to our current social context, concerns, for example, over safety, fairness, agency, being esteemed and respected, moral virtue, and feeling connected to trustworthy others, that define our identities (Brosch & Sander, 2014; Solomon, 2007). An emotion gives urgency to a specific concern, and orients us to specific kinds of action.

Our characterization of emotion also highlights how social these states are; they mediate, or connect, the individual’s pressing concerns with potential courses of action within the social environment (Frijda, 2007; Keltner & Haidt, 1999; Scarantino, 2017a; van Kleef, 2016; van Kleef, Cheshin, Fischer, & Schneider, 2016). When we feel angered by a friend’s sarcastic comment, our concern over being valued is given urgency, and points to courses of action to undo the friend’s critique. Emotions are relational in many ways. Expressions of emotion guide specific interactions that make up your day (Keltner & Kring, 1998; Scarantino, 2017b). Think of the last time you flirted or soothed a struggling friend. What might come to mind as you do this are emotional expressions—a coy glance, laughter, a comforting embrace, or compassionate word accompanied by tender prosody. Emotions help us form and engage in our relationships. Who do we choose to spend our lives with? How do we feel about members of our family? Who are our friends? Why do we worry when separated from someone to whom we’re very close? Emotions connect our context-specific concerns with possible courses of action in the social environment.

What’s the interpersonal equivalent of an emotion giving priority to a concern? It’s that an emotion is a kind of commitment to another (Aubé, 2009; Frank, 1988). When we love someone, even if the love is brief, and even if it is not spoken about as love, we commit ourselves to that other, at least for a while. We make the other’s concerns our own, be it in sex, or in childrearing, or in cooperating as soldiers or nurses do in situations when life is in peril. When we are angry with someone, we commit ourselves to seeing the matter through, to a resolution, or to a parting.

Emotions, then, are subjective and intrapersonal, but also powerfully social and interpersonal. Let’s now examine how these ideas have precursors in thinkers of the past.

**Nineteenth-Century Founders**

Modern ideas about emotions can be thought of as derived from Charles Darwin, William James, and Sigmund Freud; here’s how their ideas have been influential.

**Charles Darwin: The Evolutionary Approach**

*Our descent, then, is the origin of our evil passions!! –*
*The Devil under form of Baboon is our grandfather!*

Charles Darwin, *notebook* (Gruber & Barrett, 1974, p. 289)

In 1872, Charles Darwin (see Figure 1.2), the central figure in modern biology, published the most important book on emotions yet written—*The Expression of the Emotions in Man and Animals* (1872). Earlier, in *On The Origin of Species* (1859), he had described how all living things have evolved to be adapted to their environments. Knowing this you might imagine that Darwin...
would have proposed that emotions served functions in our survival. Indeed many psychologists and biologists assume that this is what he said. But he didn’t. His argument was both closer to common sense and more subtle than anything that we might commonsensically believe.

Darwin began writing notes on his observations of emotions in 1838. At that time, the accepted theory was that God had given humans special facial muscles that allowed them to express uniquely human sentiments. A central tenet of Darwin’s theory, however, was that humans are descended from other species: we are not only closer to animals than had been thought, but we ourselves are animals of a certain kind. Darwin gathered many observations, which would have enduring effects on the contemporary study of emotion (Darwin 1872/1998).

In his book on emotions, Darwin asked two broad questions that still guide emotion researchers (Hess & Thibault, 2009; Shariff & Tracy, 2011). First, how are emotions expressed in humans and other animals? Table 1.1 is a taxonomy of some of the expressions Darwin described.

The second question Darwin asked is where do our emotions come from? He argued that emotional expressions derive largely from habits that in our evolutionary or individual past had once been useful (for criticism, see Fugate et al., 2014). Darwin proposed that emotional expressions are based on reflex-like mechanisms, and some of them occur whether they are useful or not. They can be triggered involuntarily in circumstances analogous to those that had triggered the original habits. His book brims with examples of such actions: of tears that do not function to lubricate the eyes, of hair standing on end in fear and anger to no apparent purpose, and so on (see Figure 1.3).

For Darwin, expressions showed the continuity of adult human emotions with those of lower animals and with those of infancy. Because these expressions occur in adults “though they may not . . . be of the least use,” they had for Darwin a significance for evolutionary thinking rather like that of fossils that allow us to trace the evolutionary ancestry of species. He thought emotional expressions were like the appendix, which is a small organ that is part of the gut but seemingly has no function. Darwin proposed that this is evidence that we
are descended from prehuman ancestors in whom this organ had a use. He argued that many emotional expressions have the same quality: for instance that sneering, in which we partially uncover the teeth on one side, is a behavioral vestige of snarling, and of preparing to bite. This preparation was functional in some distant ancestor, but is so no longer. Though we sometimes make mordant and cutting remarks, adult human beings do not generally use the teeth to attack (although in the United States about a third to a half of preschool children have been bitten by fellow preschoolers!).

Darwin traced other expressions to infancy: crying, he argued, is the vestige of screaming in infancy, though in adulthood it is partly inhibited. He described screaming in young babies and gave an argument for the function of closing the eyes and the secretion of tears to help protect them when this occurred. When adults cry they still secrete tears, but adult tears no longer have a protective function. One of Darwin’s most interesting suggestions is that patterns of adult affection, of taking those whom we love in our arms, are based on patterns of parents hugging young infants.

Table 1.1 Emotional expressions discussed by Darwin (1872), the bodily systems used, and the type of emotion which was expressed

<table>
<thead>
<tr>
<th>Expression</th>
<th>Bodily system</th>
<th>Emotion example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blushing</td>
<td>Blood vessels</td>
<td>Shame, modesty</td>
</tr>
<tr>
<td>Body contact</td>
<td>Somatic muscles</td>
<td>Affection</td>
</tr>
<tr>
<td>Clenching fists</td>
<td>Somatic muscles</td>
<td>Anger</td>
</tr>
<tr>
<td>Crying</td>
<td>Tear ducts</td>
<td>Sadness</td>
</tr>
<tr>
<td>Frowning</td>
<td>Facial muscles</td>
<td>Anger, frustration</td>
</tr>
<tr>
<td>Laughing</td>
<td>Breathing apparatus</td>
<td>Pleasure</td>
</tr>
<tr>
<td>Perspiration</td>
<td>Sweat glands</td>
<td>Pain</td>
</tr>
<tr>
<td>Hair standing on end</td>
<td>Dermal apparatus</td>
<td>Fear, anger</td>
</tr>
<tr>
<td>Screaming</td>
<td>Vocal apparatus</td>
<td>Pain</td>
</tr>
<tr>
<td>Shrugging</td>
<td>Somatic muscles</td>
<td>Resignation</td>
</tr>
<tr>
<td>Sneering</td>
<td>Facial muscles</td>
<td>Contempt</td>
</tr>
<tr>
<td>Trembling</td>
<td>Somatic muscles</td>
<td>Fear, anxiety</td>
</tr>
</tbody>
</table>


FIGURE 1.3 Two of Charles Darwin’s photographs, sneering and crying: (a) Plate IV No. 1; (b) Plate 1 No. 1.
For Darwin, our emotions link us to our past: to the past of our species and to our own infancy. He provided descriptions of facial expressions, and he argued for the universality of such expressions, a claim we shall take up in Chapter 4. He gave a perspective on the question of how beneficial emotions are that is reflected in the quotation at the head of this section. Might we be better off if we could rise above bestial passions, which emerged in a prehuman phase of our evolution? Only toward the end of his book does Darwin write:

The movements of expression in the face and body, whatever their origin might have been, are in themselves of much importance for our welfare. They serve as the first means of communication between the mother and her infant; she smiles approval, and thus encourages her child on the right path, or frowns disapproval. We readily perceive sympathy in others by their expression . . . The movements of expression give vividness and energy to our spoken words.

(Darwin, 1872/1998, p. 359)

So, despite his reservations and the pressing nature of his evolutionary argument, Darwin thought that emotions have useful functions, they help us navigate our social interactions. And that is a hypothesis we pursue in this book.

**Significant Figure: Charles Darwin**

Charles Darwin’s mother died when he was eight. At the age of 16, Charles was sent by his father to Edinburgh University to study medicine, but he would skip classes to collect specimens along the shores of the Firth of Forth, developing his strong interest in natural history. In despair about the failure of his son’s medical studies, his father next sent him to Cambridge to study theology. Again, young Darwin was not fully engaged with his courses: he was more interested in collecting beetles and in hunting. He obtained an ordinary BA in 1831, and seemed headed for a life as a country parson with the hobby of natural history. He had not been idle at Cambridge, however. He had won the esteem of a number of scientists, and, at the age of 22, through a fortuitous turn of events, he was appointed naturalist on the Beagle, a British Navy ship with a mission to chart coastlines in South America. Two years after his return from his five-year voyage, Darwin proposed to a cousin, Emma Wedgewood and, a few months later, they started a long and generally happy marriage. Darwin was a bit of hypochondriac, and after he and his wife had settled in a house in a village outside London, he seldom went out, except to health spas to take cures.

The couple had 10 children, two of whom died in infancy. Charles and Emma were devoted parents, and the death of their daughter Annie at age 10 was devastating for both of them (and deepened Darwin’s thinking about the evolution of sympathy). Although evolution is often seen as in conflict with religion, Charles did not see his discoveries and theory as incompatible with his Christian beliefs. But the death of Annie did make him doubt the existence of God.

From 1837, Charles’s notebooks show him struggling to understand the change of one species into another. He proceeded slowly, and it wasn’t until 1859 that his book *On the Origin of Species* appeared.

From 1838 onward, Charles’s notebooks reflect a growing interest in emotional expressions in humans, as well as in nonhuman species, with many visits to the zoo. He enlisted others to make observations for him. He realized the importance of cross-cultural study. He was one of the first researchers to use questionnaires: he sent a set of printed questions to missionaries and others who could observe people all round the world, asking them to observe particular expressions. He received 36 replies. He was one of the first to use photographs for research. He used both naturalistic and posed expressions of emotion (such as the one at the head of this chapter) to make scientific arguments. Darwin’s 1872 book on expression is the foundation of the study of emotions. His 1877 paper in the journal *Mind*, in which he describes observations of his infant son William’s emotional and cognitive development, is one of the first contributions to developmental psychology. (Biographical information from Bowlby, 1991; Gruber & Barrett, 1974).
William James: The Bodily Approach

... bodily changes follow directly the perception of the exciting fact ... and feeling of the same changes as they occur, IS the emotion.

James, 1890, p. 449

In this well-known quotation from *The Principles of Psychology* (1890), William James argued against the common-sense idea that when we feel an emotion it impels us to act in a certain way, that if we were to meet a bear in the woods we would feel frightened and run. Instead, James proposed that when we see the bear, “the exciting fact” as he put it, the emotion, IS the perception of changes of our body as we react to that fact. When we feel frightened, James thought, what we feel is our heart beating, our skin cold, our posture frozen, or our legs carrying us away as fast as possible. (In 1855 Carl Lange independently published the same idea, which thus is sometimes known as the James-Lange theory.)

James’s theorizing focuses on the nature of emotional experience. He stressed the way in which emotions move us in bodily ways. We may tremble or perspire, our heart may thump in our chest, our breathing may be taken over as we weep or laugh helplessly, we may blush and feel the heat rise in our face in mortification, or feel tingles in our spine when moved by music or a piece of art. The core of an emotion, James contended, is the pattern of such bodily responses. This vital point about the embodied nature of emotion is captured in this observation of James: “If we fancy some strong emotion and then try to abstract from our consciousness of it all the feelings of its bodily symptoms, we find we have nothing left behind” (James, 1890, p. 451). This proposal has guided the study of emotion in two important ways.

First, James concentrated on experience, and proposed that our experience of many emotions, from fear to joy to reverence, involves changes of the autonomic nervous system, that part of the nervous system that affects systems in the body such as the heart, blood vessels, lungs, stomach, and sweat glands. He also argued that changes of muscles and joints and the sensory signals coming from them were involved. Physiological reactions in the body associated with the different emotions are our focus in Chapter 5.

Second, James proposed that emotions give “color and warmth” to experience. Without these effects, he said, everything would be pale. Colloquially we speak of “rose colored glasses” or a “jaundiced view of life” to indicate how our emotions affect our perceptions. In different parts of this book we will consider how deeply emotions shape our patterns of thought (Lerner, Li, Valdesolo, & Kassam, 2015). In Chapter 10 we will examine how emotions guide our judgments, from what is right and wrong to what is fair and just to what we remember about the past.

Sigmund Freud: The Psychoanalytic Approach

*I came away from the window at once, and leant up against the wall and couldn’t get my breath . . .* (description given by Katharina, subject of one of Freud’s early case histories).

Freud & Breuer, 1895

One of Sigmund Freud’s most enduring ideas is that certain events can be so damaging that they leave emotional scars that can affect the rest of our lives (See Figure 1.4). His principal exposition was in a series of case studies.

Freud was one of the first to argue that emotions are at the core of many mental illnesses. An early patient, Katharina—a quotation from whom is at the head of this section—described how she suffered from attacks in which she thought she would suffocate. Asked by Freud to give more details, she said: “I always see an awful face that looks at me in a dreadful way, so that I am frightened” (p. 192). She could not say whose face it was. Freud was clear that the attacks were of anxiety. Katharina would now be diagnosed as suffering from panic attacks, defined in
Like Darwin, Freud thought that an emotion in the present could derive from one in the past, in the patient’s early life. His aim in therapy for Katharina was to discover how her attacks had started and who the feared person was. The method Freud developed was called psychoanalysis, and in Katharina’s case we see elements of how this kind of therapy developed: the telling by a patient of her or his life story, which is found to have gaps (in this case the gap of having no idea of whose the awful face was that appeared to her in her attacks), the filling of such gaps by interpretations of the therapist, and the insights of the person receiving the therapy who realizes something that had been unconscious. Although in his case history of 1895, Freud was able to elicit from Katharina parts of her story, which involved sexual molestation, he disguised his account. In a footnote to his case, which he added in 1924, he wrote: “I venture after the lapse of so many years to lift the veil of discretion and reveal the fact that Katharina . . . fell ill, therefore, as a result of sexual attempts on the part of her own father” (p. 210).

Although psychoanalysis has been an influential psychological therapy, it is often criticized. Very vocal, recently, has been Frederic Crews (2017), a literary critic, who in the 1960s fell in love with Freud and his theories, and subsequently (perhaps like other lovers who have experienced disappointment) devoted himself to disparagement. Perhaps more cogently, Freud’s methods of therapy have been criticized by those who developed newer methods such as behavior therapy and cognitive-behavior therapy (to which we come in Chapter 14).

Most importantly for our understanding of emotions, in ways that are generally not given proper consideration by Freud’s debunkers, the work of Freud suggests that the emotional life of adulthood is strongly influenced by relationships we had in childhood with parents or other caregivers. This idea was the foundation of work of John Bowlby, a psychoanalyst who, from 1951 onward, developed the theory of attachment—the love between an infant and its mother or other caregiver—and his idea that all later social development derives from this emotional base. Arguably, this was the most important new element in twentieth-century psychological research on emotions. It was a huge step, an understanding of the emotional development of children would now be unthinkable without it. We discuss it in Chapter 11.
Freud’s theories were also critical to the influential theorist Richard Lazarus (1991) who combined them with the Darwinian evolutionary idea of adaptation, to propose that emotions derive from how we appraise events in the environment in relation to our goals. We discuss this, and related theories, in Chapter 6.

Philosophical and Literary Approaches

Darwin, James, and Freud laid important foundations in the study of emotion, turning our attention to how expression, bodily response, and complex narratives are part of emotion. They were, however, not the first in the Western tradition to think about emotions. Philosophers have long grappled with the nature of emotion, as have writers of fiction (Scarantino, 2016). In this section, we focus on three thinkers who influenced important currents in the understanding of emotions and whose ideas are still alive.

Aristotle and the Ethics of Emotions

Aristotle, who lived from 384 to 322 BCE, offered some of the first systematic analyses of emotions. His most fundamental insight was that whereas many assume that emotions just happen to us, really they depend on what we believe; emotions, in this view, are evaluative judgments of events in the world (Clore & Ortony, 2013; Ellsworth, 2013). In this way, we are responsible for our emotions because we are responsible for our beliefs.

In his book Rhetoric, Aristotle discussed how different judgments give rise to different emotions (see Konstan, 2006). “Anger,” says Aristotle, “may be defined as an impulse, accompanied by pain, to a conspicuous revenge for a conspicuous slight directed without justification towards what concerns oneself or towards what concerns one’s friends” (1378b, 1.32). The emotion occurs because of our belief that a slight has occurred. To be slighted is to be treated with contempt, or thwarted, or shamed.

In Aristotle’s discussion of the role of emotion in persuasion, we see the message, echoed in the quotation from Shakespeare’s Hamlet at the head of this section: our emotional experiences are shaped by our judgments and evaluations. Think of it like this. It’s a warm summer evening and you are lightly dressed, waiting in line at a cinema. A light touch on your arm by the person you invited to the movie might prompt a surge of affection. The very same pattern of touch from a stranger might make you feel anxious, angry, or even repelled. Our experience depends on our judgment.

In his book Poetics, which is about narrative writing, mainly about tragedy, Aristotle concerned himself with the central place of emotions in artistic expression, a theme we take up in different places in the book. Drama, said Aristotle, is about human action, and what can happen when human actions have effects that were unforeseen. We are humans, not gods. We simply do not know enough to predict the consequences of everything we do. Nonetheless, and this is the root of human tragedy, we remain responsible for our actions.

Aristotle noticed two important effects of tragic drama. First, at the theater, people are moved emotionally (See Figure 1.5). As the principal character grapples with consequences that were unforeseen and uninvited, we see the somber spectacle of a person who is good being tortured by circumstances to which he or she has contributed but cannot control. We are moved to feel sympathy (or pity) for this person—and to fear for ourselves, because in the universal appeal of these plays we know that the principal character is also ourself.
Second, we can experience what Aristotle called *katharsis* of our emotions. This term is widely mistranslated as purgation or purification, as if one goes to the theater to rid oneself of toxic emotions or to elevate them. But as Martha Nussbaum (1986) argues, for Aristotle *katharsis* meant neither purgation nor purification. It meant clarification—the clearing away of obstacles to understanding. By seeing predicaments of human action at the theater we may come to experience emotions of sympathy and fear, and understand consciously for ourselves their relation to the consequences of human action in a world that can be known only imperfectly.

Not long after Aristotle’s death, two important schools of philosophy developed out of his argument that emotions are evaluations and depend upon beliefs. The first was *Epicureanism*, based on the teachings of Epicurus who lived near Athens, around 300 BCE, in a community of like-minded friends. The second was *Stoicism*. It got its name from the *stoa*, where the philosophers of this school taught; the *stoa* was a colonnade, a bit like a cloister, that ran alongside the marketplace in Athens (see Figure 1.6).

Though dictionaries tell us that epicurean now means “devoted to the pursuit of pleasure” and stoic means “indifferent to pleasure or pain,” these meanings are distant from their origins, but the fact that these words are in modern languages testifies to a continuing influence.

The Epicurean and Stoic philosophers can be thought of as the first thoroughgoing Western emotion researchers. The Epicureans developed ideas of natural human sociality that influenced both the American and French Revolutions. The idea that human beings have a right to the pursuit
of happiness is distinctively Epicurean, as is the idea of living naturally, in harmony with an environment of which we are stewards. The Epicureans taught that one should live in a simple way, and enjoy simple pleasures, like wholesome food and the enjoyment of friendship, rather than chasing after things that make one anxious like wealth or are unnatural like luxuries, or are ephemeral like fame. Being guided by such desires can only lead to painful emotions: anger when someone frustrates one’s will, greed at wanting more and more, envy at someone having something we do not. The Epicureans recommended shifts in attention, from such irrational desires to more worthwhile ones, a possibility that today is studied in the literatures on emotion regulation and mindfulness, which we consider later (Gross, 2015).

As to Stoicism, one of the most interesting Stoic philosophers was Chrysippus. He distinguished between first movements of emotions, which are automatic, and second movements, which are mental and involve judgment and decision (Nussbaum, 2001). Chrysippus thought that one cannot avoid the first movements; they occur in the body and we can’t do anything about them. But since second movements involve thought, they are “up to us.” We get a glimpse of this in the movie Inside out, when Riley’s emotions Joy and Sadness, feeling lost, alight upon the train of thought.

For the most part, Stoics thought that emotions derive from desires. To free oneself from crippling and destructive emotions, therefore, one should extirpate most desires, such as those to be superior to others or yearning for fame or wealth. They advised that humans should pursue rationality and good character as the only values that are outside the vagaries of chance or the control of others and, therefore, are subject to one’s own will. The Stoic understanding was that most emotions, especially anger, anxiety, pride, and lust, are damaging to the self and to society, and so the desires that lead to them should be disciplined out of our daily lives.
Stoic ideas are thought to have influenced the acceptance of Christianity by the Romans following the conversion of the Emperor Constantine. As Christianity began to spread, the bad desires and bad thoughts, which the Stoics sought to extirpate, became the seven deadly sins of greed, gluttony, hubris, lust, vanity, laziness, and despondency. All of the sins have an emotional quality, which raises the intriguing question of when emotions benefit us and those around us and of when they disrupt our social lives (Sorabji, 2000; Oatley, 2011). One answer is found in this idea: Sin implies temptation, which, in turn, implies that we have choice. In the Stoics’ second stage of emotion, this possibility of choice is foremost. In Chapter 6, we come to it with the theories of appraisal and emotion regulation, which suggest that what we do with our emotions is as important to our well-being as whether or not we feel them. In Chapter 14, we come to the relation between emotions and free will.

Epicurean and Stoic philosophies have come to be parts of ethics, because the members of these schools pursued the goal of understanding how one could shape one’s emotions in pursuing the good life in what Martha Nussbaum calls, in the title of her book of 1994 Therapy of Desire. Ethics are not about knowing what others should do, or even what one should do oneself. They are about considerations we might have on how best to structure our own lives in relation to others. It’s been said that, when one gets down to it, there are only two real choices in life: Epicureanism, living in a way that is pleasurable though moderate, and Stoicism, living so that rationality and the building of character are the highest virtues.

Just as medicine sought a cure for bodily ills, so the Epicureans and Stoics thought of philosophy as a cure for the soul; they focused on emotions as the chief sources of the soul’s diseases. One may achieve lovely insights into Stoic thinking from the Roman writers Marcus Aurelius (c. 170) and Epictetus (c. 100), one an emperor and the other a former slave.

Two thousand years after the Epicureans and Stoics, people who think about emotions and their contribution to our ethical behavior and pursuit of happiness tend to seek answers in psychology. Think of the earlier sections of this chapter: we’ve introduced emotions as being biological, as arising in the body, as driven by the unconscious. How—in the face of such forces—can we influence our emotions? How can we live a life that is satisfying and meaningful, and tip the balance toward enjoyable engagement in what we are doing, rather than toward resentment or alienation? Despite the fact that our emotions are strongly affected by our genes and upbringing, how might it be possible to use whatever free will we have to live in a way that is right for us and for those we love? How can we escape from disabling depression, anxiety, or addiction or destructive anger and disgust?

Should we make resolutions to use self-control to improve ourselves? The science of emotions has shown this often isn’t the best way forward. As David DeSteno (2018) has found, it’s too self-involved, and for the most part resolutions to use self-control don’t carry through. But if we cultivate our emotions toward others, such as gratitude and compassion—those that orient us toward benefitting others and folding into strong collaborative relations—we are more likely to become better in ways that we would like. Issues of this kind are a focus of our last chapter, Chapter 14.

René Descartes: Philosophically Speaking

René Descartes is generally regarded as the founder of modern philosophy and of the scientific view of the world. Descartes wrote in the seventeenth century in Holland, which had just emerged from being a Spanish colony to become a center of commercial and intellectual life, perhaps at that time one of the few places in Europe where bold thinkers could work and publish without persecution. It is on the emotions that Descartes directs his focus in The Passions of the Soul.
Soul (1649), which offered a detailed discussion of how mind and body work, which included sensory and motor nerves, reflexes, and memory.

As for the emotions (which in those days were called the passions) Descartes opens his book as follows: “There is nothing in which the defective nature of the sciences which we have received from the ancients appears more clearly than in what they have written on the passions” (p. 331).

What new insights does Descartes offer? He claimed that the six fundamental emotions—wonder, desire, joy, love, hatred, and sadness—occur in the thinking aspect of ourselves that he called the soul. Today we might call this the conscious sense of self or our sense of who we are. At the same time, emotions are closely connected to our bodies, for example, to our heart beating rapidly, to blushing, or to tears. Descartes differentiated emotions from perceptions of events that happen in the outside world and perceptions of events that happen within the body, such as hunger and pain. Whereas outer perceptions tell us about the world, and bodily states like hunger and pain tell us about the body, emotions tell us what is important in our souls—as we might now say, in our real selves—in relation to our concerns and our identities.

Having identified the origins of the emotions in our souls, Descartes then describes how emotions cannot be entirely controlled by thinking, but they can be regulated by thoughts, especially thoughts which are true. So, he says:

\[\ldots\text{in order to excite courage in oneself and remove fear, it is not sufficient to have the will to do so, but we must also apply ourselves to consider the reasons, the objects or examples which persuade us that the peril is not great; that there is always more security in defense than flight; that}\ldots\text{we could expect nothing but regret and shame for having fled, and so on.}\]

(Descartes, 1649, p. 352)

Like Aristotle, Descartes suggests that the emotions depend on how we evaluate events.

Descartes was also one of the first to argue that emotions serve important functions, a central theme of this book:

\[\ldots\text{the utility of all the passions consists alone in their fortifying and perpetuating in the soul thoughts which it is good it should preserve, and which without that might easily be effaced from it. And again, all the harm which they can cause consists in the fact that they fortify and conserve those thoughts more than necessary, or that they fortify and conserve others on which it is not good to dwell.}\]

(ibid, p. 364)

We might reflect on how, when we love someone our love perpetuates and extends our thoughts of this person, and when we are overanxious or depressed we dwell on issues we cannot affect. Descartes’s idea—a perceptive one—is that our emotions are usually functional, but can sometimes be dysfunctional (Keltner & Gross, 1999; Oatley & Jenkins, 1992).

Descartes wrote at the end of the Renaissance. He was a contemporary of William Harvey who discovered the circulation of the blood, which formerly had been thought to be one of the four humors. Ideas of these humors derived from Greek doctors such as Hippocrates and Galen, who thought that disease was caused by imbalance among the humors, with an increase of each humor giving rise to a distinct emotional state. Blood gives rise to hope and vigor, from it comes the term “sanguine;” phlegm gives rise to placidity, from it comes the term “phlegmatic;” yellow bile gives rise to anger, from it comes the world “choleric,” black bile gives rise to despair, from
it comes the word “melancholy.” Before the mid-seventeenth century, it was thought that the very emanations of these humors were the experience of each kind of emotion, that we become melancholy (for instance) from an excess of black bile that gives off the experience of sadness as a stagnant pool gives off a stench (Paster, Rowe, & Floyd-Wilson, 2004). Among those making new efforts of imagination was Descartes. In the new physiology to which he contributed, emotions arise in the mind. Not only do they often affect our bodies, but functionally they enable our plans and actions (Scarantino, 2017a).

**George Eliot: The World of the Arts**

*No life would have been possible to Dorothea which was not filled with emotion…*

George Eliot, *Middlemarch*, p. 894

Many of the greatest insights into emotions come from novelists and poets—Virginia Woolf on the stream of consciousness, D.H. Lawrence on emotional dynamics between women and men, Emma Cline on the self-consciousness of adolescence. The writing of George Eliot (pen-name of Mary Ann Evans) offers impressive ideas regarding emotional experience and its place in intimate relationships (Davis, 2017; Haight, 1968; Oatley, 1992).

In 1856 George Eliot wrote an essay for the *Westminster Review*, entitled “The natural history of German life” (Pinney, 1963). In it she reviewed two books by von Richl, a pioneer anthropologist, who described the life of German peasants. Her essay was a kind of manifesto for her own novels. It includes the following:

The greatest benefit we owe to the artist, whether painter, poet or novelist, is the extension of our sympathies. Appeals founded on generalizations and statistics require a sympathy ready-made, a moral sentiment already in activity; but a picture of human life such as a great artist can give, surprises even the trivial and the selfish into that attention to what is apart from themselves, which may be called the raw material of moral sentiment… Art is the nearest thing to life; it is a mode of amplifying experience and extending our contact with our fellow-men beyond the bounds of our personal lot.

(George Eliot, 1856, reprinted in Pinney, 1963, p. 270)

Although the word “emotion” isn’t used here, this passage is about the importance of literary art for the emotions and has influenced our approach in this book: emotions are not just in individuals but between people as well. So, Eliot says, *sympathies*—emotions that connect us to each other—can be extended by novelists and other kinds of artists, to people outside our usual circle of friends and acquaintances.

In the years 1871 to 1872, Eliot published *Middlemarch*, a novel about emotions, which portrays experience from inside the person’s own consciousness. Each character has aspirations and plans, but each is affected by the unforeseeable accidents of life. Eliot’s question is this: if we are unable to foresee the outcomes of all our actions, if there is no fate or divine force guiding us toward an inevitable destiny, how should we find our way in life? Her answer is that our emotion can act as a sort of compass. You might think of emotions as narratives, or stories, that move us forward in life in the pursuit of what we care about, our concerns as we said earlier.

In the book, Eliot contrasts Dorothea who longs to do some good in the world, with Edward Casaubon, an elderly scholar whom Dorothea admired and married in the hope of gaining entrance to the world of learning. Dorothea is responsive to the emotional currents of her own
and others’ lives, whereas for all his erudition Casaubon barely recognizes his emotions at all. About a third of the way through the book, Casaubon has a heart attack in suppressed anger following an argument with Dorothea. Lydgate, the town doctor, attends and counsels Dorothea to avoid all occasions that might agitate her husband.

Some days later Lydgate makes another call and Casaubon asks him to be candid about his condition. Lydgate says that although prediction is difficult, he is at risk. Casaubon perceives that he might die, and sinks into bitterness. When Lydgate leaves, Dorothea goes into the garden with a sympathetic impulse to go at once to her husband.

But she hesitated, fearing to offend him by obtruding herself; for her ardour, continually repulsed, served with her intense memory to heighten her dread, as thwarted energy subsides into a shudder, and she wandered slowly round the nearer clumps of trees until she saw him advancing. Then she went towards him, and might have represented a heaven-sent angel coming with a promise that the short hours remaining should yet be filled with that faithful love which clings the closer to a comprehended grief. His glance in reply to hers was so chill that she felt her timidity increased; yet turned and passed her hand through his arm.

Mr Casaubon kept his hands behind him, and allowed her pliant arm to cling with difficulty against his rigid arm.

There was something horrible to Dorothea in the sensation which this unresponsive hardness inflicted on her. That is a strong word, but not too strong; it is in these acts called trivialities that the seeds of joy are for ever wasted.

(george eliot, 1871–1872, p. 462)

In this passage we see many of Eliot’s ideas about how emotions arise and are communicated. They are what relationships are made of. They have powerful effects upon how we perceive other people and situations in which we find ourselves. We come to understand that we experience our own emotions differently from how people see them. We readers are moved emotionally in ways that succeed in “extending our sympathies.” Later George Eliot wrote in a letter:

. . . my writing is simply a set of experiments in life – an endeavour to see what our thought and emotion may be capable of – what stores of motive, actual or hinted as possible, give promise of a better after which we can strive.

(haight, 1985, p. 466)

Brain Science, Psychology, Sociology, and Anthropology

Founding figures from Charles Darwin to George Eliot have grappled with the nature of emotion, relying on the tools of keen observation, thought experiments, and literary narrative. how would the scientific study of emotion emerge? During the first half of the twentieth century, there was resistance to the study of the emotions, most pronounced in behaviorism, a school of thought that saw only overt behavior as worthy of psychological inquiry. Within this tradition, the mind was a black box, inscrutable to the lens of science, and emotions disruptive forces within the human psyche. On this, one of the best-known behaviorists, B.F. skinner, has a character in his 1948 novel, Walden Two, say: “We all know that emotions are useless and bad for our peace of mind and our blood pressure” (p. 92). In the last 50 years, however, at first gradually, and then
with gathering momentum, the scientific study of emotions has come into its own in the brain sciences, in psychology, and in other social sciences, most notably sociology and anthropology.

**John Harlow, Tania Singer: Toward a Brain Science of Emotion**

*Even though empathy has been extensively discussed and investigated by philosophers and social scientists, only recently has it become a focus for neuroscience.*

Tania Singer et al. (2004), p. 1157

One of the earliest and most striking pieces of evidence about how the brain is involved in emotions came from a horrific accident, written up by a country doctor, John Harlow.

The case about which Harlow wrote was that of Phineas Gage a likeable foreman of a group of men working to construct a railroad in Vermont. On September 13, 1848, they were about to blast a rock, which had been drilled and the hole filled with gunpowder. Gage rammed the powder down with an iron rod, three- and- a-half feet long, an inch and a quarter in diameter. It weighed 13 pounds. This tamping rod must have struck up a spark, for there was an explosion. The rod entered Gage’s skull just beneath the left eyebrow, exited via a hole in the top of his head, and landed 50 feet away (See Figure 1.7). Gage bled terribly, suffered an infection of his wound, but recovered, in body though not in mind.

John Harlow, who attended Gage, wrote that the “balance, so to speak, between his intellectual faculties and his animal propensities seems to have been destroyed” (1868, p. 277). The effects were emotional. Although previously he was amiable, Gage was now impatient, irreverent, and easily moved to anger. His employers who had regarded him as their “most efficient and capable foreman” could not give him back his job.

**FIGURE 1.7** Model of Phineas Gage’s head and his skull showing the exit hole made by the tamping rod.
In the science of emotion dozens of people—"modern Phineas Gages"—have been studied. These are people who suffered damage to the frontal lobes (Damasio, 1994; Szczepanski & Knight, 2014). What is most striking and consistent in these studies is how disrupted are the emotions of such people and how detrimental are the effects on their judgment and relationships. They often show inappropriate judgments when it comes to risk, morality, money, pleasure, or the trustworthiness of other people (Bechara, 2004). As a result, they may find it hard to choose to make this appointment or make rash investments with fraudulent financial advisers. They struggle in friendships, and their marriages often end in divorce because of their outbursts, sexual improprieties, and unreliability. These observations speak to our definition of emotion earlier, that emotions link a person's current concerns to suitable courses of action in the present situation. When emotions are disrupted through such brain damage, people can't gauge which concerns matter, and their actions often can be inappropriate. We elaborate upon this and other insights that emerge in studies of patients like Gage in Chapter 7.

Before the age of electronics, and the finding that the brain works by sending electrical and chemical signals, the main evidence about emotions and human brain function came from accidental damage of the kind that happened to poor Phineas Gage and to modern Phineas Gages.

Among the pioneers of more modern brain research on the emotions was Walter Cannon, who argued for a different view of the emotions than the embodied perspective of his Harvard colleague, William James. He started a paper in 1927 by citing observations by commentators that James’s theory is "so strongly fortified by truth and so repeatedly confirmed by experience" (p. 106) that he felt trepidation at venturing to criticize it. Cannon uses the term "trepidation" rhetorically. He probably felt no such thing. His 1927 paper was one in a line of criticisms he published of the James-Lange theory. His principal evidence was that if James were right, then when the viscera (from which bodily feelings were supposed by James to arise) were severed from the brain of laboratory animals, one would expect a reduction in their emotions. With this operation, however, no such reduction occurred.

Instead, as Cannon found it was transection of neural pathways at a quite different level that had striking effects on emotions. Cannon showed that when, in a laboratory cat, the cerebral cortex was severed from the lower parts (subcortical regions) of the brain, or removed altogether, the result was an animal that showed very intense emotions, for instance, strong anger with no provocation. The phenomenon contributed to the idea that the higher region of the brain—the cortex—acts to inhibit the subcortical regions where emotions reside, an idea that continues to this day in some studies of emotion regulation and the brain (Braunstein, Gross, & Ochsner, 2017). Not everyone finds the idea helpful, that the main job of the cortex is to inhibit the lower regions; most functions of the cortex are more active and add meaning to subcortical beginnings of emotion, as we shall see in Chapter 7.

Today, although research on brain patients continues to yield insights, neuroscientists now study emotion-related brain activation with a number of techniques, particularly functional Magnetic Resonance Imaging (fMRI), which picks up changes of blood flow in regions of the brain when the neurons in those regions are active. Let’s consider a line of research that is growing. It’s on empathy—the state of feeling what another person is feeling. You will learn in this book about the centrality of empathy to parent–child attachments, romantic partnerships, friendships and interactions at work (Zaki & Ochsner, 2016). Frederique de Vignemont and Tania Singer (2006) defined empathy as follows:

a. having an emotion, which

b. is in some way similar to that of another person, which
is elicited by observation or imagination of the other’s emotion, and that involves knowing that the other is the source of one’s own emotion.

Might empathy engage specific regions of the brain?

To answer this question, Tania Singer and her collaborators (2004) assessed brain activity with fMRI while volunteers experienced a painful electric shock and compared it to that elicited when these participants received a signal indicating that their loved one—present in the same room—was receiving a similar shock. Some areas of the brain (for instance, the somatosensory cortex) were activated only when the participants experienced pain through their own senses. What was striking, though, is that other regions of the brain were activated both when subjects received pain and when they were signaled that their loved one experienced pain. These regions included the anterior insula, which tracks physical sensations in the body and represents those sensations as conscious experiences of feeling (Craig, 2009), and parts of the anterior cingulate cortex, which is engaged during experiences of negative emotion and conflict and motivates action (See Figure 1.8).

This study of Singer and colleagues tells us that the emotional aspect of pain was shared in the brain; it was affected by the participants’ own pain and imagination of pain in their loved one. You might be asking the following question. What about our empathic response to other emotions in other people? Singer and colleagues have found that similar components of this “empathy network” in the brain—the anterior insular cortex and anterior cingulate cortex—are activated when participants respond empathically to other people’s experiences of fear, anxiety, disgust, and pleasure (Bernhardt & Singer, 2012).

A second question you might ask is about sympathy and compassion, which are closely related to empathy. In sympathy (or compassion), we respond to others’ suffering or pain with our own feelings of concern and the motivation to help that person (Goetz, Keltner, & Simon-Thomas, 2010). You might think of the empathic response to another’s suffering as a mirroring response, with sympathy and compassion additionally involving a concern for the other person’s welfare giving rise to an urge to help. Are empathy and sympathy registered in different regions of the brain? This appears to be the case. Recent studies find that sympathy (compassion) activates different regions of the brain than empathy, including an old region of the brain—the periaqueductal gray—that enables nurturant behavior in mammals, and reward-related regions of the brain, including the ventral tegmental area, the nucleus accumbens, and the orbitofrontal cortex (Ashar, Andrews-Hanna, Dimidjian, & Wager, 2017; Bernardt & Singer, 2012; Simon-Thomas et al., 2011). In Chapter 7, we continue this discussion of brain processes involved in different emotions.

**FIGURE 1.8** Empathy (darker color labels) and compassion (lighter color labels) in networks in the brain.
James Cameron’s (2009) film Avatar was a big hit, and it continues to be worth seeing. An avatar is a conceptual being that can represent us in a game. In this film, the avatar is a being from another planet, into which the human mind of Jake Sully (played by Sam Worthington) is inserted. Sully has been a marine. He was wounded in combat, and made paraplegic. Despite being confined to a wheelchair, he has special skills that qualify him to join a group of humans on a mission to Pandora, in the Alpha Centauri solar system, in the year 2154. The body that Jake’s mind enters is that of a Na’vi, a species of nine-foot tall, blue-skinned beings, who are lithe and elegant, who move gracefully through beautiful forests with which they live in harmony.

Humans have come to Pandora to obtain a valuable mineral “unobtainium,” needed to solve the energy crisis that threatens Earth. The film’s plot parallels the plunder of the Americas by Europeans, with contempt for indigenous peoples. At one level, Avatar is a conventional film in which a likeable hero first suffers, then overcomes seemingly insurmountable obstacles, and then gets the girl, the lovely Na’vi princess, Neytiri (played by Zoe Saldana), who inducts him into ways of living in the Pandoran forests.

But Cameron is a deeply psychological film maker (Oatley, 2009). Jake enters a series of empathetic identifications with people who first are like him, then progressively more different from him. His first identification is with Colonel Quaritch, military commander of the human mission to Pandora. Having been in the military, Jake can easily identify with him. Next, Jake identifies with a second human, a woman: Dr. Grace Augustine, an anthropologist who wants to understand the Na’vi because she is in charge of the mission to cajole them into disrupting their living place and giving up their valuable mineral deposits. It’s she who arranges for Jake to be inserted mentally into the body of a Na’vi, to infiltrate this group that seems to be obstructing human purposes. Finally, Jake empathizes and identifies with a member of another species, Princess Neytiri, with whom he falls in love.

The most important psychological issue for Cameron concerns our human propensity to empathize with members of the group to which we feel we belong and our accompanying potential of contempt toward members of groups to which we feel we don’t belong. Such groups can be defined by nationality, by political ideas, by gender, by skin color, or, indeed, by anything. You might see something of this in yourself in your preferences for an athlete or sports team.

In a review of empathy and its opposite—schadenfreude (taking pleasure in others’ misfortunes)—Cikara, Bruneau, and Saxe (2011) argue that although our dispositions to care about and help each other are at the very foundation of human society, there are powerful motivations not to care about or help members of out-groups: sympathetic and empathic feelings toward such people are rare and fragile. Cikara et al. review studies in which participants have been led to increase empathy for members of out-groups. Arguably, films such as Avatar might contribute in this way.

**Magda Arnold, Sylvan Tomkins: New Psychological Theories**

...emotions involve a double reference, both to the object and to the self experiencing the object.

Magda Arnold and J. Gasson, 1954

It is my intention to reopen issues which have long remained in disrepute in American psychology.

Sylvan Tomkins, 1962

In the second half of the twentieth century, faintly at first, voices were heard expressing concerns that emotions had been neglected in the academy. Among the voices were those of Magda Arnold and Sylvan Tomkins; in 1954 both started to speak in ways that guide people toward the present day scientific study of emotion. Arnold (with J. Gasson) proposed that emotions are based on appraisals of events. In the same year, at a meeting of the International Congress of Psychology, Tomkins offered a theory about the relation of emotion to facial expression.
Most researchers now assume that emotions derive from people’s appraisals of events. The typical emotion arises when a person perceives, or thinks about something, that is relevant to what Nico Frijda (e.g., 2007) calls a **concern**: something important to us. The idea that the core to an emotion is an appraisal of something that happens in the world was proposed in ancient times. It is similar to Aristotle’s idea of emotions as evaluations (Nussbaum, 2001). If we know what appraisals (or evaluations) are made of an event, we can predict what emotion is likely to occur (Roseman, 2013). If we know what emotion is currently being experienced, we can infer what appraisals are likely to have been made.

In their development of this idea that emotions involve appraisals or evaluations, Arnold and Gasson proposed that an emotion relates self to object. Unlike perception, which is about our knowledge of what is out there, or personality, which is about what each of us is like in ourselves, emotions are essentially relational; emotions mediate, or link, our interior concerns with events and objects in the world. Arnold and Gasson put it like this: “An emotion . . . can be considered as the felt tendency toward an object judged suitable, or away from an object judged unsuitable” (1954, p. 294).

So appraisals involve at first attraction to, or repulsion from, some object, and they determine whether the emotion is positive or negative. Then come further distinctions, depending on whether the object of the emotion is present or not and whether there are difficulties in acting. “Impulsive” emotions arise if there is no difficulty in attaining or avoiding an object. The “emotions of contention” arise when there are difficulties in acting. Particular emotions, Arnold and Gasson argue, arise according to these appraisals. If an object is judged suitable and if it is present, then the impulsive emotion tends to be love; if an object is judged unsuitable and is not present, then the contending emotion is fear. These ideas would be widely influential, as we shall see in our discussion of emotion-related appraisals in Chapter 6.

In a series of books (e.g., 1962), Sylvan Tomkins developed a similar line of theorizing. His central claim was that affect is the **primary motivational system**. Emotions are amplifiers of drives. It had long been assumed that drives, such as hunger, thirst, and sex, are the primary determinants of behavior. Not so, argued Tomkins: “This is a radical error. The intensity, the urgency, the imperiousness, the ‘umph’ of drives is an illusion. The illusion is created by the misidentification of the drive ‘signal’ with its ‘amplifier.’ Its amplifier is its affective response” (1970, p. 101). What Tomkins meant by “drive signal” was a neural message about some event, for instance, a signal of a potential sexual partner. What he meant by “drive amplifier” was the “umph,” for instance, a strong attraction to this person.

In Tomkins’s account, human action and thought reflect the interplay of motivational systems, each capable of fulfilling a certain function (such as eating, breathing, sex), each potentially capable of taking over the whole person. What prioritizes these systems? It is emotion. It does so by amplifying one particular drive signal, just as loudness of sound on an audio system is amplified by turning up a control to adjust its volume.

Here are two of Tomkins’s illustrations. First: when, for any reason, there is some sudden obstruction to breathing, as when drowning or choking, it is not the shortness of oxygen that is obvious, it is a panicky fear that amplifies the drive signal making us struggle to breathe again. Those pilots in World War II who refused to wear oxygen masks suffered lack of oxygen, said Tomkins. But the effect occurred slowly. It was not unpleasant. The signal was not amplified, and some of these pilots died with smiles on their lips. Second: when we are sexually excited, it is not the sexual organs that become emotionally excited. It is the person who is excited, and moves toward the other person and to fulfillment. The bodily changes, for instance, in the sex organs, amplify the sexual drive, making it urgent, and taking priority over other matters. These bold theoretical claims would inspire young scientists, who included Paul Ekman and Carroll Izard, to study emotion.
Sociologist Erving Goffman proposed that when William Shakespeare wrote “all the world’s a stage” (in *As You Like It*, 1623) this was not a metaphor: we literally give dramatic presentations of ourselves to each other and create the social reality in which we live. From such performances moral worlds are created. From them we derive our own selfhood and from them others derive their sense of who we are.

Goffman introduced into social science the method of careful observation through a theoretical lens. His lens was his idea that life is a kind of drama, in which we take on roles. For understanding emotions, Goffman’s most instructive work is perhaps the essay “Fun in games,” published in *Encounters* (1961). In this essay, Goffman advances his general argument about life as drama, making the case that emotions are constructed within specific roles, such as being with your family, or with your boss, or out on a first date.

We can think of each kind of social interaction, at a café, in the workplace, in the family, out on a date, as like a game, says Goffman. When we enter it, we pass through an invisible membrane into a separate world with its own rules, its own traditions, its own history. We take on a social role that is afforded in that kind of interaction—when out on a date we may be the one who charms and flirts, in a school or university our role may be that of hard working, curious student. Within the membrane, we give a certain performance to sustain our role, following the outline rules or scripts that are relevant within that world. So out on a date we tell jokes and disclose vulnerabilities, as a student we seek to find what ideas inspires us and give us purpose. These performances are viewed by ourselves and others as good or bad of their kind, as correct, incorrect, or partially correct. They invite commentary from others—including suggested modifications, blame, and praise. The distinctive rules within each kind of membrane give rise to social and moral worlds that provide the subject for much of our conversation.

Now comes Goffman’s insight into emotions: as well as giving a more or less good performance we can ask how strongly engaged we are in a role. Games are fun because they invite wholehearted engagement. By extension, the roles that we play in social life have their emotional correlates. Certain roles center upon the experience of certain emotions: love and passion expected of new romantic partners; the sympathy and filial love expected of new parents. Our full engagement in roles is enabled by enthusiasm and produces emotional rewards, the feeling of pride or contentment, for example, in fulfilling the expectations of specific roles. In contrast, sometimes the performances in which we engage in our social lives can produce inner conflict: we can follow the rules, enact the script, take part in the interaction, but not be engaged. In this case, we can feel we are not enacting the role in all its details and expectations. Then occur various emotions—anxiety, sadness, anger, shame—that are upsetting and unsatisfying aspects of our lives.

Arlie Hochschild was influenced by Goffman (see Figure 1.9). In her work she explored the tension that so often occurs when the person is in conflict about the role he or she plays, when there are questions about who one is in oneself, and the performance one is giving.

Hochschild’s parents were in the US Foreign Service, and she describes how at the age of 12 she found herself passing round a dish of peanuts at a diplomatic party and wondering whether the smiles of those who accepted her offerings were real. Her parents often commented on gesture: the “tight smile of the Bulgarian emissary, the averted glance of the Chinese consul, and the prolonged handshake of the French economic officer” (Hochschild, 1983, p. ix). These gestures did not just convey meaning from one person to another—they were messages between
governments. Had the 12-year-old just passed peanuts to actors playing prescribed diplomatic roles? Where did the person end and the job begin? How much of emotion is not involuntary, but a dramatic performance guided by strategy and rules and even deception?

In her scientific research, Hochschild first sought answers to this problem: do sales people sell the product, or their personalities? She developed a theory of “feeling rules.” These rules specify what emotional feelings are appropriate to the specific context. They can be private and unconscious, or socially engineered in occupations that require us to influence other people’s emotions and judgments.

Hochschild observed the training of Delta Airlines cabin staff, which includes learning how to act in emergencies, how to serve food, and feeling rules that detailed emotional performances required of a Delta flight attendant. The trainee had to play a role, much as if she were an actor. The main aim is to induce a particular emotional tone in passengers: “Trainees were exhorted: to ‘Really work on your smiles . . . your smile is your biggest asset’ ” (Hochschild, 1983, p. 105). They “were asked to think of a passenger as if he were a ‘personal guest in your living room’. The workers’ emotional memories of offering personal hospitality were called up and put to use, as Stanislavski would recommend” in his well-known training of actors, known as method acting (p. 105). It is easier to give a convincing performance when one fully enters into the part.

Work that involves constructing emotions in oneself in order to induce them in others is widespread: Hochschild calls it emotional labor. When Hochschild was developing this idea, she estimated that 38 percent of paid jobs in the United States needed substantial emotional labor, and these burdens fell disproportionately upon women. For many jobs, from the airline flight attendants Hochschild studied to personal assistants of executives, the emotional labor required performances of joy and cheerfulness. Other jobs required threatening emotions: “Create alarm” was the motto of one debt-collecting agency boss (Hochschild, 1983, p. 146). Today, with the expansion of jobs in the service industry and in health care, even more people are required to engage in emotional labor in their careers. Zhan et al. (2016) distinguished between
surface acting and deep acting during emotional labor. They found that those who only managed to do surface acting were more likely to experience negative responses from customers and that they were more likely to suffer emotional exhaustion. In contrast, those who were able to do deep acting received more positive responses from customers and were able to feel more positive in themselves.

The central insight of Goffman and Hochschild, that emotions are kinds of social performances in which we embody specific roles and identities, dovetails with the theorizing of anthropologists, such as Lila Abu-Lughod. Abu-Lughod has devoted parts of her research career to living with and studying the Awlad’Ali, a nomadic Bedouin tribe in Egypt. In her book *Veiled Sentiments*, Abu-Lughod offers rich descriptions of how the women perform an emotion known as “Hasham,” which roughly translates to embarrassment, shyness, and modesty (Abu-Lughod, 1986). Women express this emotion in their gaze aversion, blushing, and veiling, and spatially, in terms of who they can be in the presence of. The central concern at the heart of the expressions of hasham is that women signal their place, and deference, to men, who tend to occupy more powerful positions in that society. In expressing hasham, however, women feel dignity and strength. In another essay with her colleague Catherine Lutz, Abu-Lughod would sum up the thinking of this section: “emotions are a primary medium for defining and negotiating social relations of the self in a moral order” (Lutz & Abu-Lughod, 1986). In our performances of emotions, we situate our identities within the roles, values, and structures that make up culture. We will return to this idea about how emotions are constructed within specific roles and shaped by culturally specific values in Chapter 3.

**Empirical Inspirations for a New Science of Emotion**

*Emotions are the grammar of social living.*

Iraneus Eibl-Eibesfeldt, 1989

New fields of inquiry in psychology, like the science of emotion, often find their inspiration in the thinking of influential philosophers, novelists, early psychologists, and pioneers in sociology and anthropology. We have just provided one account of how the enduring insights of thinkers from the past have shaped the science you are about to explore. New fields of inquiry are also inspired by timely empirical discoveries that direct scientists to study phenomena in new ways. Here we chart a few early empirical discoveries that inspired a new science of emotion.

One such inspiration came from the field of ethology: the study of animals and people as they live their own lives (Eibl-Eibesfeldt, 1989). Ethologists don’t do controlled experiments in the laboratory; they seek to understand behavior in natural settings from an evolutionary perspective, considering the survival and reproduction-related goals that are served. In the 1960s, ethologists such as Iraneus Eibl-Eibesfeldt used special filming techniques to capture the daily lives of people in remote societies in Africa, New Guinea, and the Amazon. In a careful frame-by-frame analysis of the film they gathered, they detailed how parents attach to their children and soothe and comfort them, how siblings play and fight and reconcile, how adolescents flirt and form romantic attachments, how sexual partners relate, and how friends and rivals navigate social hierarchies. In this careful analysis, they arrived at a thesis captured in the quote at the beginning of this section: emotions are the grammar of social living. Emotional expressions and experiences are the basic elements of interactions such as flirting, parent–child attachments, status negotiations between rivals, fighting, and forgiveness. This theoretical insight, and the methods it was based on, would influence evolutionary approaches to emotion, which we consider next chapter, as well as studies of emotional expression, attachment, relationships, and even certain clinical discoveries you will learn of later.
A different kind of discovery that inspired the new science of emotion came from studies of treatments of patients with epilepsy—a kind of electrical storm in the brain. In the 1960s, patients with epilepsy often would undergo an operation in which the corpus callosum, a large bundle of nerve fibers that connects the left and right sides of the cortex, is severed. This split-brain operation separates the left side of the cortex from the right to stop the spread of epileptic disturbances. (No other treatment had been effective at the time.) Despite the two sides of the brain being no longer in communication, the patient’s IQ, personality, language, and ability to engage in meaningful interactions are not diminished. Twenty years after the first split-brain operation Roger Sperry was awarded a Nobel Prize for his research with these patients, which showed in a striking new way the different functions of the left and right hemispheres.

If a picture or text is presented to the right side of the visual field, because the information crosses over to the other side in the optic nerve, it is processed by the left hemisphere. When anything is shown in the left visual field, it is processed by the right hemisphere. But with a split brain the two hemispheres do not communicate. This neurological condition allowed scientists to begin to ask whether emotion seems to arise in specific regions of the brain.

Michael Gazzaniga worked with Sperry, and wrote books such as the *Social Brain* (1985), which would influence the neuroscientific study of emotion. In one of his studies, Gazzaniga showed a frightening film about fire safety to the left visual field of a woman split-brain patient. Because the images were not accessible to the left hemisphere of her brain, she was not conscious of having seen the film. Gazzaniga then interviewed the patient, as follows.

**M.G. (Michael Gazzaniga):** What did you see?
**V.P. (Patient):** I don’t really know what I saw. I think just a white flash.
**M.G.:** Were there people in it?
**V.P.:** I don’t think so. Maybe just some trees, red trees like in the fall.
**M.G.:** Did it make you feel any emotion?
**V.P.:** I don’t really know why but I’m kind of scared. I feel jumpy. I think maybe I don’t like this room, or maybe it’s you. You’re getting me nervous.

In this interaction, the patient saw the film presented to her left visual field, and this led to experiences of fear, generated in the right hemisphere, where nerve fibers from the left visual field go to. But the patient could not understand the source of her fear in her linguistically functioning left hemisphere. Her fear derived from the unsplit subcortical regions, and was communicated to the language-using right hemisphere, but without any indication of how it arose. The patient drew upon her fear, and her narrating left hemisphere offered a story about how Gazzaniga was making her feel nervous. This work suggests that there are regions of the brain that are engaged in emotional experiences. Other regions of the brain are engaged as people label, narrate, and make sense of their emotional experiences—an idea that we will return to time and again in this book.

A third discovery that shaped the new science of emotion came from a series of experiments by Alice Isen and her colleagues, which revealed that transient experiences of positive emotion had effects upon how we act in the world. In one experiment (1970) she gave a test of perceptual-motor skills. Some people, randomly selected, were told that they had succeeded in this test, and as a result were made mildly happy. As compared with other participants who had taken the same perceptual motor test but who were not told they had succeeded, the happier participants were more likely to help a stranger (an associate of the experimenter) who dropped her books.

Later, Isen and her colleagues (1978) induced a mildly positive emotion in people in a shopping mall by giving them a free gift. In an apparently unrelated consumer survey, these people said their cars and television sets performed better than those of control subjects who had received no gift. In subsequent research, Isen found that positive states can lead people to more creative thought, the recollection of more positive memories, more collaborative negotiations,
and to produce more unusual associations to words (Isen, Shalker, Clark, & Karp, 1978). Isen’s work provided some of the first evidence on how emotions shape our social behavior, judgment, and decision making, themes we take up in Chapters 9 and 10. Extending Isen’s findings, Elise Rice and Barbara Fredrickson (2017) found that people’s spontaneous positive thoughts made them more likely to approach, and to like things, they had been thinking about. In a different kind of extension, Hans Melo and Adam Anderson (2017) proposed that positive emotions encourage exploration and may facilitate flexibility and creativity. More generally, Isen’s results signaled a move away from assumptions that emotions are irrational and disruptive; instead, they have principled effects upon thought and action.

What Is an Emotion? A Framework

In tracing the origins of the science of emotion, we have considered different approaches to the question: “What is an emotion?” Across different traditions, we have seen how early theorists centered on the idea that emotions are responsive to our important personal concerns. More recently, there’s been emphasis on how emotions are less usually individual, and more usually relational, they prepare us to act in the social environment. It’s also clear that the early theorists focused on different components of emotion, including evaluations or appraisals that give rise to emotions; emotional expressions and bodily responses; narrative and symbolic ways in which we regulate, make sense of, and express our emotions, sometimes in literary or artistic form.

In Figure 1.10, we bring these insights together, portraying how scientists today conceptualize emotion (Brosch, Pourtois, & Sander, 2010; Levenson, 1999). Following Aristotle and Arnold, today emotions are thought to arise as a result of how we appraise events in our environment. The most typical emotion-eliciting events are social, but emotions can also arise from events in our bodies, for example, when we feel anxiety and fear when thinking (often erroneously) that a heart palpitation is a sign of a heart attack, or when we interpret butterflies in our stomach as a sign that we are falling in love.

Emotions involve subjective feelings, patterns of expressive behavior that were the focus of Darwin, bodily responses that intrigued James, tendencies to act, and emotion-specific ways of perceiving the world, which Isen began to chart.
As these patterns of emotion-related responses unfold, we label, explain, and narrate our emotions, which we characterize in the rightmost box of Figure 1.10. We conceptualize emotional experiences in a language of words, phrases, images, metaphors, and beliefs, making distinctions, for example, in whether we are experiencing “shame” or “embarrassment,” “awe” or “fear,” or “love” or “desire” (Lindquist, 2017). As the work of Hochschild revealed, we can act to modify, or regulate, our emotions; we might suppress anger or fear when it seems inappropriate to the context or for our identity; we might try to arrive at an alternative appraisal if it seems to be likely to trigger emotions we deem problematic (Gross, 2015). To carry forward a phrase from Shakespeare: emotions “come not single spies” (Hamlet, Act 4, Scene 4, Line 78). Often we experience more than one emotion in any social situation. The implication, as Mesquita and Frijda (2011) explained, is that among a set of emotions that we may feel, we can choose to concentrate on one—affection, perhaps, or embarrassment, or irritation—the one that is important for that situation. Tomkins proposed that emotions create urgency. As a family friend of one of the writers of this book (K.O.) said: “one must distinguish the important from the merely urgent.” Also, in keeping with Aristotle’s analysis of theater, we can express our emotion in symbolic forms, such as journaling, fiction, poetry, music, visual art, and dance.

The wisdom of sociology and anthropology, and the observations of the ethologists, reveal how emotions are shaped profoundly by different social contexts. To capture this important idea, our figure places the elements of an individual’s emotion within two broader social contexts—represented as ovals in Figure 1.10. The first is your family, which influences how you evaluate events in your life (and the events you are exposed to), the specific language you develop to conceptualize your emotions, how you express your emotions, and how you label, regulate, and express symbolically your experiences. From your family, you inherit genetic tendencies that shape emotion as we shall see. Within your family, you develop and form attachments, and experience different significant events, from the positive (warm family celebrations and reunions and traditions) to the traumatic (intense conflict, abuse), which we consider later in this book.

Culture—the focus of Chapter 3—is a second kind of social context that shapes emotion in myriad ways, as we chart throughout this book. The culture you grew up in (perhaps East Asian or Mexican-American), your social class, these influences on emotions can be far reaching. Our culture of origin and current living shape the language and concepts we rely on to interpret social contexts, how we appraise events, the intensity with which we express emotion, the words we use to categorize emotional experiences, and our tendency to suppress or amplify our emotional expression.

Summing up the processes portrayed in Figure 1.10, we arrive at this. Emotions occur usually when some event occurs—in the world or in the mind—which, as Frijda (2007) explains, affects a concern, such as a goal or a value. It involves different aspects of ourselves: experiences, thoughts, changes within our bodies, expressions, perceptions, and actions. It creates an urge, a priority, to think and feel and do this, rather than that.

The English language has many words that designate emotions: Johnson-Laird & Oatley (1989) identified 590 of them. We might say that our roommate is angry, or irritated, or hostile. We might say that we ourselves are feeling sad or blue or depressed.

Many scientists use the word affect for phenomena that have anything to do with emotions, moods, dispositions, and preferences, though some people refer to this whole realm as that of the emotions.

In Figure 1.11, we show a spectrum of emotional states in terms of duration, and in the following paragraphs we say something about each kind of state.
Episodes of Emotion
The term “emotion” or “emotion episode” is generally used for a state that lasts for a limited time. As indicated in Figure 1.11, facial expressions and most bodily responses generally last for seconds, and in the case of some bodily responses, minutes. When researchers record states of which people are conscious and can report, by asking them to keep structured diaries of these episodes, or by getting people to remember episodes of emotions, people typically report experiences lasting between a few minutes and a few hours.

Moods and Sentiments
The term mood refers to a state that may last for hours, days, or weeks, sometimes as a low-intensity background. When it starts or stops may be unclear. Whereas episodes of emotion typically have an object, moods are often objectless, free-floating (Frijda, 1993a). We feel emotions about specific people and events. Philosophers call the focus of an emotional experience its “intentional object.” When you are angry, you usually have a very clear sense of what you are angry about (e.g., your roommate’s arrogance or your dad telling an embarrassing story about your first date). When you are in an irritable mood, in contrast, it may not be obvious why you feel as you do: the intentional object is less clear. The term “sentiment” is now used less than it once was. It is a prolonged emotional state, like a mood, but usually with an object: examples might be love or resentment.

Emotional Disorders
The most common emotional disorders are depression and clinical anxiety states. These may last for weeks or months, sometimes for years. Such disorders are now routinely assessed by interviews from which people’s experience is categorized, for instance by means of the American Psychiatric Association’s Diagnostic and Statistical Manual, fifth edition, *DSM-5*, of 2013. Thus, major depression includes depressed mood, or loss of interest or pleasure in most activities, that lasts at least two weeks. It is a matter of considerable interest to find what relation episodes of depression have to normal episodes of sadness. We take up this issue in Chapters 12 and 13.

Personality and Temperament
In a further step along the spectrum, there are terms used to describe emotional aspects of personality that can last a lifetime. We say that people are “warm” or “contemptuous.” Shyness implies a tendency to feel anxiety in social settings; agreeableness involves a tendency to feel
love and compassion for others. The term “trait” is used to designate such long-lasting aspects of personality. As we shall see in Chapters 8 and 11, significant aspects of personality are based on temperament, which can be thought of as the kind of personality we are born with. Personality develops as we grow up, and most of its traits have emotions at their core. These emotional tendencies can shape peoples’ lives, often in profound ways.

**SUMMARY**

The new sciences that contribute most to this book have old and influential roots. In this chapter, we offer a sampling of insights into the nature of emotion. We began with Charles Darwin, who can be thought of as starting the scientific study of emotion. We then moved to William James, a founder of American psychology, and Sigmund Freud, a founder of the psychological therapies. We then reviewed formative ideas of philosophers Aristotle and René Descartes who identified some of the abiding questions of this book. What are emotions? How do we express them? Where do they come from? How do they shape our reasoning? What functions do they serve?

We then reviewed the approach of the novelist George Eliot. Her deep concern was the role of emotions in our relationships with others, an issue to which modern psychology of emotions is heading, and which is a central feature of this book.

Early on, brain science drew on the study of accidents and John Harlow’s account of the effects of the damage to Phineas Gage’s brain. More recently, brain imaging has become important, as in the studies of Tania Singer and her colleagues on empathy. We described the influential theories of Magda Arnold and Sylvan Tomkins, and the effects of inducing emotions by Alice Isen. We saw how Erving Goffman, Arlie Russell-Hochschild, and Lila Abu-Lughod showed how emotions are constructed within the roles we adopt in our social life.

In putting these insights together, we offered an account of how an emotion unfolds, from initial appraisals to emotion-related responses to the ways in which we categorize, regulate, and narrate our emotions. Finally, we offered conceptions of emotion as functional processes that relate outer events to our inner goals and help us navigate our social world. This book is about the realm of the emotions. It covers emotional episodes, which are briefer and more specific than moods. By the second half of the book, we move to longer lasting states, which include traits of emotional disorders and traits of personality.

**TO THINK ABOUT AND DISCUSS**

1. Which of the approaches we’ve discussed in this chapter is most appealing in your own understanding of emotions? Why?

2. How can studies of the brain complement studies of a psychological kind in understanding emotions?

3. How can a piece of art such as a novel or film enable us to think about our own emotions?

**FURTHER READING**

Among the several good handbooks on emotions are the following:

A useful book with distinguished contributors, the fourth volume in a series on Feelings and Emotions that started with the Wittenberg Symposium in 1927 is:

These books by philosophers range thoughtfully across diverse approaches:

A history of emotions and how they have been thought about: