CHAPTER 1

Studying Emotional Development

Emotions surround us every moment of our waking lives; even when we sleep we are in emotional states. We are happy, sad, confused, interested, joyous, or shamed. The minutiae of our lives are made up of these emotions. They are the subjects of our thoughts and feelings and they are the material of our interactions with others. Emotions are a natural part of what is human and their power and effectiveness derives from their evolutionary interconnection with the world. And yet, if we stop to think about it, we quickly come to realize that we know very little about the "stuff" that we call emotions. What is an emotion and a feeling and how are they different from a thought? Where do these emotions and feelings come from? How do our early lives affect them? How are people different? What is the origin of these differences?

To clarify what is to follow, I will state an explicit definition: *Emotions are thoughts about our evolutionary-derived action patterns that occur within and are molded by our social niche.* This definition includes the term "thoughts about." Here is another major theme of the theory of development to be presented. "Thoughts about" has a developmental course. The most important feature of human emotional development involves the emergence of the self and, in particular, the emergence of self-referential behavior. I will call this development of self-referential behavior "consciousness." It is what allows us to have "feelings." Thus, it is not just any thought about action patterns-in-context that is an emotion; it is thoughts about the self.

The second feature of the definition of emotion is the "action patterns-in-context." As I will try to show, the human infant, at birth and soon thereafter, exhibits highly specific actions in the world. These actions, which are

necessary for survival, have evolved, but—and this is an essential feature—are open to the influences of the infant's social niche.

Emotions affect our bodies, influence our will, control our memories, and shape our interactions with others. Yet, despite their centrality to our very being, little study and thought about their development exists. Emotions, especially in Western society, are viewed as suspect, and perhaps even as irrational.[1] But what is irrational about the love of a child for his parent, the child's fear of an approaching stranger, and the child's shame over failure? In order to get past this bias, we need to look at the development of this "stuff" called emotions.

Emotions are real stuff; they exist in our actions and in our units of language.[2] We think about thinking and we think about emotions. But what is it that we mean when we use the term "emotion"? Perhaps an example from an older child's statement, "I am happy," would help. While an infant does not yet have language, perhaps this example in an older child who possesses language will capture the definition of emotion that was just offered. The child first means that she is in a state of happiness, and second that she has knowledge that it is she who is in this state. Such a definition of emotion was made popular at the turn of the century by William James. This dual meaning of emotion fits both with bodily sensations, or what I will call "action patterns," and with ideas about our selves. Our emotions are created out of how we think: we are proud when we are able to help someone by giving him money and we are disgusted and outraged by the random killings of innocent civilians in ethnic strife. Besides the action patterns emotions require elaborate thinking and memory.

For the purpose of this book we need to consider several commonly used words, such as *emotion, experience, consciousness,* and *feelings*. In a strict sense, I will use the word *emotions* to mean thoughts about our action patterns-in-context. I will use the word *feelings* to indicate our thoughts about ourselves. "Feelings," "thoughts about ourselves," and "experiences" are all terms having the same meaning; they are my experience of me or, as I have come to believe, what is essentially what we mean by consciousness. The task in studying emotion is not only to find ways to observe these action patterns-in-context and to measure them, but of equal importance, to study the child's experience of them. Darwin, in his classic book *The Expression of the Emotions in Man and Animals*,[3] suggested that emotions were action patterns, having external signs as well as internal states that could be found in expressions in the face, voice, and posture of humans and beasts. Certainly, in everyday life we seem to believe that facial expressions and internal states are likely to go together. When someone cries at a funeral, we tend to assume that he or she is sad. Yet, we humans are more complex than animals and are capable of masking our behavior; for example, we sometimes laugh at a joke we do not really think is funny

because we do not want to hurt the joke teller's feelings. Deception in terms of facial expression is as real a feature of emotional life as facial expressions reflecting what we are really experiencing. While internal changes may exist, the history of the study of emotion over the last 100 years reveals that we have not been able to measure them very well.[4] This lack of measurement has led to the belief that there are no internal changes and that all there is are thoughts. Such a belief holds that the discrete emotions are nothing more than different ways of thinking about things. Emotion only as thought relegates emotion to second-class status by making it an epiphenomenon of thought. This is tempting for our Western minds, where Descartes holds sway. To paraphrase him, feelings are the waste product of thought—feelings are base things, they are like the sweat of our mental lives. We will argue against these strong forms that suggest that emotions are action patterns or that they are only thoughts; rather, emotions involve both.

In the theory of emotional development to be presented later, I argue that Darwin's action patterns are shared by many animals including humans. However, biological properties interact with human consciousness in specific cultures. Consider the example we call "sadness." Sad behavior over loss seems likely to be either innate or readily learned. However, one child may have more sadness than another as a function of her temperament and environmental differences in the amount of loss that occurred, and these will affect and produce individual differences between children.

The problem of the nature of emotion also makes the study of development that much harder. For example, do children have the same emotions as adults? Does Maron's sadness over his mother leaving him at the baby-sitter's represent the same sadness that Maron's mother feels when she leaves him? When we address the question of whether human adults have the same action patterns and thoughts that children do, we are immediately met by the same question in an adult. For example, when I say I am fearful of a hornet stinging me while I sit on my porch, do I mean that I have the same feeling as when I say I am fearful that there is someone following me down a dark street? Is fear in one situation the same as fear in another? These questions lead to the belief that my experiences of myself and my action patterns are only loosely related and that they may be different things. We will assume that our experiences, our thoughts about our action patterns-in-context, are not the same as the action patterns themselves. Thus, my experience of my fear is likely to differ as a function of the causes that elicit it.

Emotional life is made up of a set of three features. The first is *emotional elicitors,* literal events in the world and later in the infant's development of his thoughts or ideas. In the discussion throughout the book I will use the term "ideas" for thoughts. The second feature is the *action patterns*

including expressions that have evolved and that are located somewhere in the body. The third is the *ability of the child to experience her action patterns,* the ability to think of herself. By dividing the term "emotion" into these features, my belief in the development of emotional life becomes more clear. Consider the following case:

> I am driving down the highway at 60 miles an hour when suddenly my left front tire blows out. For the next 45 seconds, my attention is directed toward bringing the car to a safe stop at the side of the road. I am attending to many things at once, including the movement of the steering wheel, the feel and sound of the tire, and the noise of the cars going past me—all of which capture and maintain my attention. Having successfully reached the side of the road, brought the car to a safe stop, and turned off the ignition, I finally start to attend to myself and notice that I am shaking. At this moment, with my attention turned to me, I experience what I label as fear since it fits my knowledge about action patterns-in-context. Earlier, while trying to regain control of my car, I was likely to be showing the action pattern of fear if I had had electrodes attached to me that could probe those parts of the body likely to be markers of fear. However, at the time of the blowout, it was not to my adaptive advantage to pay attention to myself, for my attention was needed elsewhere to safely bring the car to a stop. While I was likely showing a specific action pattern, fear, and may have shown a fear face, I certainly was not experiencing myself as fearful until that car was safely brought to rest.

This example raises a number of issues that will lead to strong disagreement unless we can come to terms with the problems to follow.

WHAT KIND OF A THING ARE EMOTIONS?

To begin with, there is probably no advantage in using the common term "emotion" to cover what we may mean since the term has a surfeit of meanings. Arguments are bound to ensue when we do not carefully articulate what we are referring to. The debate that occurred between Robert Zajonc and Richard Lazarus, two eminent emotion theorists, in the 1980s might not have taken place had they understood that while one was referring to action patterns, the other was referring to cognitive evaluation.

As in *Children's Emotions and Moods* and in Nico Frijda's classification system, as well as in Chapter 2, we will try to deconstruct the term emotion into several of its component parts such as elicitors, action patterns including expressions, and self-experience.[5] These types of deconstruction may allow our studies and conversations to go beyond the single

term emotion, and may provide the type of clarity necessary for research to progress.

Thus, "action patterns" are innate responses based on our evolutionary past that are adaptive behaviors designed for action in response to specific environmental events; these events are called "elicitors." However, because innate responses are inherently plastic, they are affected by individual differences in children's temperaments, their concurrent environmental conditions, and the cultural rules that we call "socialization." Because of this inherent flexibility, the difficulties in finding a close association between an elicitor and an action pattern should not be taken to negate the assumption that there are such innate responses. In addition to this inherent flexibility two other difficulties exist that make the association even more difficult to observe. These difficulties will be discussed in more detail in Chapter 2. Just to mention them now, the first has to do with the nature of the elicitor itself. For the most part the elicitors used in research to date tend to be multiple. For example, holding down an infant's arms and restraining him is made up of multiple elicitors including sudden movement toward the child, physical contact, smiling, and unexplained action that is not in keeping with the preceding events. Since multiple elicitors are involved, the association between them and a single action pattern would be hard to observe. One solution to this problem is to very carefully select the elicitor to be used. We will see that in my work, I use a single specific elicitor, the blockage of a learned response to a desired goal, to study anger, since from Darwin on it has been argued that such a blockage should elicit anger, which is just what we observed in infants as young as 2 months old.[6] When careful choices of elicitors are made, we are more likely to find a greater association between them and specific action patterns.

However, another issue that is likely to prevent our ability to examine innate response is the real possibility that multiple emotions, even to a specific elicitor, are more likely the rule than single emotions. At least our adult sense suggests that at the funeral of a friend we may likely experience both sadness and fear, or at the wedding of a daughter both joy and sadness. The nature of emotional life may be made up of a fugue, with the flow of emotions and thoughts entwined so that multiple emotions rather than *an* emotion may be what our lives are made up of. It is only when we try to study them in the laboratory that we break the flow apart.

If we reject the idea of an innate response to a specific context, we are left with the unanswered question of how action patterns including facial and bodily expressions as well as physiological responses are organized. The idea that these complex coherences are socialized, that is, they are learned, is difficult to imagine, and there is no direct evidential support that they are acquired. It is only the fact there is difficulty in finding specificity between facial expression and contexts that moves us toward accepting the

acquired theoretical viewpoint. At the moment we need to accept the idea that action patterns such as fear, joy, and sadness are part of the human condition and that these action patterns are inherently flexible. In the manner of language acquisition, the innate structure or procedural rules for action patterns are already formed, but they are plastic so as to be open to the pressures of experiences.

THE PROBLEM OF FEELINGS

We all use the term "feeling" in describing our emotions. I can say to you that I am feeling happy, and it is because of both our common language and mentalism, that is, your knowledge that you and I share internal states such as thoughts, desires, motives, and the like, that you can find in yourself what I am feeling. In fact my feeling of happiness may make you feel happy. But what, then, does feeling happy mean? As suggested, the terms feelings, thoughts about myself, experience of me, and consciousness all speak to the process that assesses something about me.

Certainly the infant cannot utter the words "I am feeling happy," although we caregivers often say that the baby is happy. If the infant could utter the sentence "I feel happy," it seems that the access to his feelings would be dependent on his ability to know at least that the feeling is his. It is not events out there that are the feelings, they are not someone else's feelings, they are private and not known by anyone else but me unless I speak about them, although if I behave in a certain way in a particular context someone else might guess what my feelings might be. The child's ability to access either his bodily states or his thoughts about himself is dependent on his ability to be able to know about himself; first, that there is a self, a me, and second, that there is some unique combination between the self and action patterns-in-context. It is this self-referential ability that will be used to denote the term "consciousness." Consciousness is not about the aboutness of what is accessed, the content, it is the process of accessing itself.

But there is another use of the word *feeling* and for that matter the word *self-experiencing,* and it is this usage that gets us into difficulties when we discuss emotional development. Let me give you an example. A friend of mine recently laughed over the idea that some people believe that newborn infants cannot feel pain. He is not alone in his disbelief. If we prick them with a needle, don't newborns cry and haven't we found that their stress hormone, cortisol, goes up when this is done? When we say that the infant feels or experiences pain, what other meaning might we give to these words?

The common meaning of the words *feeling* or *experience* is likely to

continue to give us a problem in trying to understand emotional development. The meaning of *feeling* or *experience* that I refer to is not a bodily feeling or experience, but rather an experience or feeling as in self-referential thought, something called consciousness. Let me suggest how we might think about these two different meanings of the word *feeling*. Consider that I am at the dentist's office and he wants to fill a cavity. He gives me a shot of Novocain and after a moment or two he pricks my gums and asks, "Do you *feel* this?," meaning, "Does it hurt?" My answer is that I do not *feel* it. He then begins to perform a procedure. If we had a meter that was capable of measuring pain at the pain receptors in my gum or along the neural pathway from the receptors to some central processor, it would register as pain. From a physiological perspective I have pain, but I do not *feel* pain. It does not mean that the body does not experience the pain in some way, nor does it mean that much pain will not have a powerful effect later in life. What it does mean is that I am not conscious of the pain; I do not feel it.

Perhaps another example can be found to make this point that does not involve pain, since some might say that pain is a special case. Here is an example from the research of Michael Gazzaniga. A patient with her corpus callosum severed because of her epileptic attacks is asked to haptically finger a wooden number under a blanket so that she cannot see her fingers move nor see the number, and by raising her fingers, she tells the experimenter what number she felt, a question that she can answer easily. However, when the experimenter asks her to tell out loud what the number was, she cannot tell him; "I don't know," she says. She clearly knows since she raised her fingers correctly but yet she does not know what it is that she knows. But isn't this what we mean by consciousness?[7]

Our bodies have a life of their own; they know many things that we, our consciousness, do not know. Our bodies know that when we eat too much sugar, that they need to secrete insulin. This is something known by ourselves, that is, by our bodies, but not known by our consciousnesses. We cannot readily access many things that are happening in us. In all these examples we can see that some part of us, our body, is experiencing something that enables other parts of our body to act. But we, our conscious or self-referential self, do not know of it, and therefore we cannot feel it.

My claim, therefore, is that before we can think about ourselves, before there is self-referential behavior, and therefore before consciousness, the infant may have or may be in a particular state as a consequence of a particular elicitor; however, the infant is not able to think about or experience that state as we adults do. Thus, if we restrict feeling to the body, then, of course, we can say a newborn feels pain. But if we mean that the infant can access this bodily state and know that it is her pain, then no, she does not feel pain. The infant does not have the privilege of the first person, reflected in the statement, "I am in pain." To avoid the problem with the

word *feeling* I will use the terms *experience* or *consciousness* to speak not of bodily action, but of ideas about the self. I will explore this idea about different levels of self-knowledge in Chapter 5.

I AM I, I AM

I take this title from the character Sam I Am in the child's book *Green Eggs and Ham* by Dr. Seuss. The issue of consciousness plays an important role in the theory of emotional development that will be articulated here and developed more fully in Chapter 5, as well as in Chapters 8 and 10. We make much use of the development of consciousness in the theory of emotions and therefore in trying to find ways to measure it. Looking at self-referential measures, such as touching the marked nose while looking in the mirror, enables us to understand that the child knows that the image *there* in the mirror is located *here* in space, the same here in which I stand; this is also demonstrated in self-referential language such as in the use of personal pronouns like *me* and *mine,* and in pretend play in which the child reveals that he knows that something he is doing is not literal. Here I will try to both define consciousness and to argue that it has a developmental course and that it is the basis of mentalism. When we talk about consciousness we are not making reference to a consciousness that is not conscious since in effect this is what Freud tried to do. I do not see the mental processes as a struggle between the conscious and the unconscious. Rather there is only the conscious. What, then, is there that the consciousness struggles against? When I say that I am not going to eat dessert and then I do eat dessert, or when I say that I will finish painting the wall but do not do it, what is my conscious desire struggling against? It has for some time been our common belief, and a firmly embedded one at that, that there must be something "there," inside us, that is preventing us from doing that which we desire to do. This something we assume to be the unconscious, some kind of wild beast with a will of its own. It would appear that this puzzle has always been with us; the Greeks had a word for it, *akrasia,* and later it was the devil in Western belief, and now for the last century it has been called the unconscious.

However, if we stop for a moment and think about all the different things we do that we are not conscious of, from solving a problem to rote physical activity, from speaking sentences without knowing what will come next to suddenly remembering, it seems clear that there is something in there, and that something is likely to be sets of processes, habits, and the like. Some who are interested in this problem have called the thing inside "procedural rules," others have called them "action patterns," and still others have called them "instincts" and "innate releasing

mechanisms." This thing or things inside us are not considered unconscious but rather not conscious. I will refer to them as *the machinery of the self* or core bodily processes and will argue that this machinery is a highly organized, complex, evolutionary-adapted set of processes that control both the internal workings of our bodies and much of our dealings with the outside world. This machinery is innate but highly plastic and capable of learning.

When we are not conscious of ourselves we are not unconscious. The interpsychic conflicts we have are between our conscious self and the machinery of our selves, machinery of which most of the time we have very little knowledge and until this last century we knew almost nothing about. In fact it is our consciousness that has allowed us to learn about this machinery, something that we are still learning about. Interestingly, we still do not know a great deal about what it is. Is it a modular system made up of many parts that are organized in some fashion, or some highly interactive system in which the activity of the whole system is what determines the outcome? Both of these possibilities find support in the research on the topic, which will be presented shortly. The point that I wish to make here and that I will try to make throughout the book is that this consciousness exists but that it is a distributive system, and once developed and used can be rewarding but at the same time highly disruptive. We do not want to think about ourselves when we are involved in a task but do want to think about ourselves to define the task or when the task is completed or when we have failed. We want to think about what we want to do, that is, to plan, but during the execution of the plan it is probably better not to think about ourselves.

So when does consciousness emerge in the human child or, for that matter, when does it emerge in the evolution of life on earth? To ask this question is to suppose that there is a way to measure consciousness. I have proposed and tried to show that there are measures that are close to consciousness, and that is self-referential behavior.

The ability to make reference to oneself is a reasonable measure of consciousness that can be measured by self-recognition in mirrors as well as in the use of personal pronouns and in pretend play. We will not go into the argument here since we will spend a considerable amount of time in Chapter 5 doing so; however, the coherence between these measures and the subsequent development of the self-conscious emotions such as shame suggest that these self-referential measures are a good approximation. Our studies suggest that consciousness develops in the human child sometime in the middle of the second year of life and that it can be seen in self-referential behaviors. The rise of consciousness has a profound effect on the development of a child's emotional life.

People have claimed that consciousness is only an idea and that for

other cultures this consciousness either does not occur or that it is a collective consciousness.[8] However, such an argument has to do with the aboutness of consciousness and that is not what we are referring to. The aboutness is a cultural artifact. However, consciousness, the self-referential ability, is more likely a function of the nature of the human brain. Richard Shweder has shown that in some cultures there is a we-self aboutness.[9] However, even in we-self cultures there is no question that when a woman is menstruating, and therefore considered to be polluted, it is the woman herself who is not touchable. Even in we-self cultures the idea of a person bounded and separated from other such selves plays some role.

Having consciousness creates the challenge of maintaining our identity in the face of change. The function of the self-concept is to construct identity, that is, to maintain the cognition that all of this is me. Sometimes it means adding pieces together, sometimes it requires a separation of parts. Sometimes the elimination of one or more parts and sometime the distortion of parts or even a distortion of the composition of the whole is necessary. All of the thoughts about ourselves are designed to maintain the idea of "me." The idea of me consists of at least two features: unity, that is, I am one person and continuity, that is, I am the same person over time and that what happens now will have consequences for me in the future.

Consciousness transforms the human infant since it is the first of the emerging ideas and as such allows for and aids in the transformation of the child's action patterns or procedural rules into mentalistic thoughts, about herself, and through that to thought about others, and finally into thought that connects the past, the present, and the future. Consciousness is, as we will try to show, the most powerful of human features, the ability to be both in the present and at the same time somewhere else.

THE SAME IS NOT THE SAME

I wrote a paper on the complexity of the developmental process over 45 years ago in which it was argued that the study of infant development requires that one be an Eastern metaphysician: to study development requires that we deal with the meaning of a behavior. This is a serious problem since the equivalence of behaviors at different ages causes all sorts of difficulties. We often observe that a very young infant can perform some action that when performed at an older age would be considered to represent a complex mental state. The example of the newborn imitating the behavior of another, in particular, a tongue protrusion, on the surface seems no different than a 2-year-old imitating another child's play with a toy. We could claim that there is no difference between the two types of imitating and thus give to

the newborn mental states, or alternatively we could say—which is more likely the case—that the same behavior can be used in the service of different processes.

The history of the study of infant behavior over the last 50 years has gone from the early belief in the incompetent infant who could not see well, learn easily, or remember (what William James called a "bundle of confusion") to a present belief of an infant who now is supposed to be capable of doing almost anything, and because of this is considered to be more like a scientist in a crib. The number of competencies that now has been demonstrated is quite amazing, which seems to me to reflect the innate action patterns of which the very young are capable. While some have recognized that these competencies are not predicated on mental states, others, especially those interested in the infant's interaction with its social world, have attributed unrealistic abilities that include such claims as the infant knows its mother and has the concept of itself as a "good" or a "bad" infant.[10] I will not dwell on all of the attributes that the 3-month-old infant is given since they will be covered later, but what we need to do is to make sure that we understand that the same behavior can be produced by many different processes. Without this understanding we are readily forced into the conclusion that there is no development at all since the infant can do everything at the beginning of life or soon after. In the study of emotional development we need to understand that the early action patterns are not the result of mental states whereas later in development these same action patterns can be the result of mental processes. A sad face in the 4-month-old can be due to a literal elicitor such as the cessation of an interaction either with people or while operating on an object, while a sad face at 24 months can be due to a thought about the cessation of an interaction not yet begun.

More specifically, as I discuss in Chapter 3, the earlier action patterns are elicited by the literal world, and therefore are mostly biological or innate in origin. However, they are influenced both by the temperament of the child and by the nature of the social experience the infant is subjected to. The later action patterns are elicited mostly by ideas that are a function of the maturation of consciousness as well as development of the ideas about the self and the action of the self in the world, all of which are imparted to the child by the social nexus in which he is raised.

INDIVIDUAL DIFFERENCES WHERE NO TWO ARE ALIKE

Lucky is the student of psychology who does not have to contend with the problem of variance around a mean value. This variance represents what

we in effect mean by individual differences. Even with these individual differences it is possible to talk about a process or a relationship between sets of events as general rules, which implies that the process holds for all children. While such a state of affairs might exist, the variance-around-a-mean tendency is not possible to ignore when we study human development, especially if the problem is emotional development. While there are some general facts about what babies do, for example, sit up before they crawl, or crawl before they walk, even these simple motor rules show large individual differences and these differences are the rule. Children differ for at least two reasons. To understand the development of emotional life requires that we consider these reasons, which we will be done in Chapters 9 and 10. The two reasons have to do with what I call biological or temperament, which affects the innate action patterns so that something that might elicit joy for one infant might elicit fear in another, and socialization or individual difference of the child's interactions with her social and non-social worlds. The diversity of the infant's social and object worlds are so different because they are a function of the forces acting on the immediate family with differences both within and between them. This is related to group membership, cultural factors, and historical factors. These are usually grouped together under the general topic of socialization. Socialization can imply a process involving action on a passive child by others who surround him. What is referred to is a broader idea than the child being acted on. In our studies, everything indicates that the child both is acted on and is acting on. The child helps to create his own world. All of this is going on within the context of the values of the family. It is the family and its circumstances that determine to a large degree the kinds of elicitors the child will be exposed to, and therefore the kind, frequency, and intensity of the action patterns that will be produced. Even climate will have an effect on the child, to say nothing of the type of dwelling the infant lives in and the temperature during the day and night. When we include the number of people in the immediate group, the ages of the other children in the family, and so on, all these are going to impact to produce individual differences.

One of the least studied aspects of emotional life is geography. This seems like a strange statement to make, but an observation made years ago about the relation between emotional expression and geography has been confirmed by recent studies.[11] The finding is that as one moves either north or south away from the equator, emotional expression decreases. In the northern hemisphere, southerners are more emotionally expressive than are northerners. This is true across countries as well as within countries; so, for example, northern Italians are less expressive than southern Italians. This is also true in Japan, with the northerners less expressive than the southerners, in China, and even in India. It may have something to do with the heat;

perhaps warmer temperatures somehow encourage more facial movement. Clearly temperature may play a role. Exactly how this may work is not clear, although I believe that temperature, family living density, and emotional contagion may be responsible for this.[12] If living density increases in cold weather with people staying closer to keep warm, then northern people should have greater living density than southern people. If it is also true that emotional expression has a strong contagion element, then people living in cold climates who live close together to avoid emotional contagion decrease their expressive behavior. On the other hand, those who are warmer do not need to live closely, and therefore do not need to inhibit their emotional expression. The point is that individual differences are considerable and that in studying emotional development, this fact needs to be kept in mind.

Now these two factors, temperament and socialization, will have a profound impact on individual differences. Since they are interactive, they produce large numbers of possible permutations. The factors impact on the infant's early emotions and they impact on the self-conscious emotions. That we can find any general pattern is amazing since these individual differences make the mean value nonrepresentative of any one child. To say, for example, that the response to holding an infant's arm down is an anger action pattern is to forget that for almost 10% of the infants, sadness, not anger, is the response, and for others it is a combination of them both, or even no reaction at all.

The possibilities that flow from the interaction of so many varied social events as they interact with temperament differences are so large that between individuals there are at best only weak coherences. Individual differences in fear of a stranger are not correlated with fear of falling off a visual cliff; the threshold to respond to pain is not correlated with the ability to dampen a response once pain occurs. Physiological responses such as heart rate or cortisol release are only weakly correlated with behavior. Individual differences swamp our findings. However, rather than despair at this outcome, we need to remember that while innate connections exist, these connections are innately plastic. How to proceed having this point of view is not easy, but perhaps it suggests that a nomothetic, rather than a mean data approach is called for.

MAMMALS, GREAT APES, AND HUMANS

There is both a phylogenetic and an ontogenetic perspective with respect to emotional development, in particular consciousness, something that I will discuss in Chapter 5. Darwin certainly tried to connect the expressions of man with the expressions of beasts but had considerable difficulty in doing

so. The reasons are complicated but they are likely to center around his lack of information in regard to human cognition. Because Darwin did not have access to theories of cognitive development, in particular, attribution theories about the self, he was unable to separate out the various self-conscious emotions. Since the various self-conscious emotions require different ideas about the self, such as responsibility for a success or failure, or about differences in self-focus, such as task orientation versus performance orientation, as well as about the standards, rules, and goals of the group in which the child is embedded, Darwin had difficulty differentiating between shame, embarrassment, guilt, and shyness.

Certainly Darwin cannot be faulted for his limited understanding of children's and adults' cognitive capacities. In fact, he shared some of the prejudices of his day, including comparing children with retardation to monkeys. Given what we know now, it is possible to try and phylogenetically connect the emotional development of humans and other mammals. Toward this end here is what I see as a possible phylogenetic sequence.

1. To begin, Darwin was correct in pointing out that all mammals, including the great apes and humans, share the same early action patterns to the extent that their particular niche allows. Facial, vocal, and bodily aspects of these early action patterns are shared by us all.
2. The rise of consciousness separates all other mammals from the great apes and humans, which are likely alone to possess this capacity, perhaps with the exception of some of the sea mammals. Because of the development of consciousness, the early self-conscious emotions, those that we will call the "self-conscious exposed emotions," embarrassment, empathy, and envy, are likely to some extent shared by the great apes and humans.
3. However, the self-conscious evaluative emotions, those like shame, pride, and guilt, require culture for the rules, standards, and values as well as for other self-cognitions. Because only humans possess these cognitions, it is only humans that possess these action patterns. What this analysis suggests is as we move from the early to the later action patterns we leave behind first the other mammals besides the primates and then finally we separate the great apes from humans as we reach the most cognitively produced emotions. It is interesting in this regard to remember that another term for these self-conscious evaluative emotions is the "moral emotions." It is these that we humans alone demonstrate. It is only humans who seem to possess a moral code that controls a good deal of our

actions toward one another and that also gives rise to religious and spiritual beliefs.

SELF-DECEPTION, PRETENDING, AND LYING

As soon as consciousness emerges in the development of the child, the literal world as a control on action gives way to cognitions or ideas that can take a variety of forms. One of the forms is that we can think about the unreal besides the real. We call it pretense, where the known real is suspended for make-believe. The 2-year-old child begins to be capable of manipulating the literal world at will. The ability of the human child to pretend, that is, to negate the real, we call play. Another form of play is the ability to deceive others and ourselves. Each of these forms, pretend play, self-deception, and other deception, is the property of a conscious mind; they are discussed in detail in Chapters 7 and 8. But more, they are the bases of the creative aspect of humans. It is these abilities that appear early and that later become the art forms that only humans are capable of making. That we can think what we wish, that we are not bound by the limits of the literal world, and that we have larger brains than the other mammals allow us to create the cultural artifacts that surround us and that come to influence us. These cultural artifacts multiply and in doing so create even more cultural artifacts. So besides the moral sense that we come to have, we also have the ability to create art forms, which no other creatures on the planet are likely to possess. But perhaps more, with consciousness we are able to dream and to hope, which allows us to be in the here-and-now, yet not to be. Pretense and deception are not only essential for the creation of the high culture of art, music, theater, dance, and comedy, but for use in our interpersonal commerce. While these emergent capacities in the growing child bring pleasure, they also create the means for misunderstanding. How much simpler would the lives of humans be if each of us were bound by a sign system where pretense, deception, and play would give way to unambiguous signs that would inform each other of specific motives and desires.

I mention these issues now because they are most likely to cause controversy with what is proposed in the chapters to follow. Given my commitment to the idea of development, I will try to engage both biology and socialization into the theory of emotional development, holding to the view that human life, and with it emotional life, is largely made up of innate evolutionary-derived action patterns—procedural rules and the like—which are by their nature plastic; this plasticity is in large part due to the caregiving world of the child, to her temperament, and to the emergence of consciousness. Before doing so, let me state again that for the purpose

of this book, emotional life is made up of innate action patterns and our experience of them as they interact in our social worlds.

TOWARD A THEORY OF EMOTIONAL DEVELOPMENT

One evening in a hotel room, before I was to deliver a lecture on infants' fear of strangers, I came across a copy of the Bible. The section in Genesis, which has to do with the violation of God's requests to Adam and Eve, seemed to me to contain the ideas of a theory of emotional development that I was trying to articulate in my lecture the next day. The King James version of the creation myth says,

> And the Lord God planted a garden in Eden . . . and caused to grow out of the ground every tree . . . and the tree of life in the midst of the garden and the tree of knowledge of good and evil. . . . God commanded the man saying that "Every tree in the garden now thou mayest freely eat but of the tree of knowledge of good and evil thou shall not eat of it for if on the day thou eateth thereof thou shalt surely die." . . . And the serpent (to encourage evil said) "Ye shall surely not die for God doth know that on the day ye eat thereof your eyes will be open ye will be as God knowing good and evil." . . .
>
> She [Eve] took of its fruit and did eat and give also onto her husband with her and he did eat and the *eyes of both of them were open and they felt that they were naked*. And they *did hide* from the Lord God and when he called to them they did not answer. And he said to them "Why are you hiding from me?" And they answered "*Because we are naked*" and he knew therefore that they had eaten of the tree of knowledge.

This story provides a framework for the theory of emotional development that will be articulated in the chapters to follow. In the beginning, Genesis argues for the existence of the early action patterns such as interest, joy, happiness, and curiosity, which can be seen in Adam and Eve's behavior in the Garden of Eden. The particular action pattern talked about was curiosity, which we know is an approach emotion; that is, it leads toward action in the world. In this case it was the eating of the apple. The eating of the apple from the tree of knowledge made them wise. From our point of view, this gaining of wisdom was about themselves: "They did eat and the eyes of both of them were open and they *felt* that they were naked." The consequence of this acquisition of knowledge, the story tells us, resulted in a new set of emotions, in particular, the self-conscious emotion of shame. They knew they were naked and were ashamed. This story suggests a progression: Early emotions lead to knowledge, what we call cognitions, in

particular cognitions about the self, which in turn lead to the self-conscious emotion of shame. This creation story matches the developmental theory that we will follow.

We will take the work of Charles Darwin and a biological evolutionary position as our point of reference in order to focus on the issue of development. Even so, we need to emphasize that emotional life is embedded in the child's social and cognitive development and that this embeddedness gives to the basic biological form its content and meaning. This broad view is similar to that of our understanding of language in which the biological form, embedded in a social context of a particular language, becomes that language. Therefore, part of the central theme of this book is the belief that socialization and maturation are equally important in determining development and leading to individual differences in emotional life.

In humans, the earliest development of emotional life resembles what we see in other animals, the common action patterns-in-context between animals and us. Later, emotional development is dependent on the emergence of consciousness. These I call the self-conscious emotions. Thus, to begin with, emotions are tied to a behavior–environment connection. Darwin described this connection well when he suggested that emotions in man and animals are action patterns that are tied to particular situations because these action patterns proved to be adaptive, and therefore were likely to survive. For example, anger is an action pattern designed to overcome a blocked goal, sadness an action pattern associated with loss, and fear an action pattern associated with both movement away from and interest toward. For the most part these action patterns are common across species, differing as a function of the different physical features and environmental niches each species possesses and inhabits. These action patterns have been called by several different names; for example, in the cognitive development literature they have been called "procedural rules." I have chosen the term "action patterns" because it is broad enough to encompass emotional, social, and cognitive behaviors.

In the second and third year of life these action patterns interact with the emergent consciousness, consciousness here being taken to mean the idea of "me." It is a mental state best captured by the phrase "I am happy" or in its most mature form "I know, you know, that I love you." While the emergence of consciousness has a biological basis, it does not concern the nature of the child's aboutness. Rather, it is the idea that the human child and then the adult has the capacity to consider its aboutness. Once consciousness appears in the human child there emerges as a consequence a transformation, in part of which a new set of emotions, those that involve the self-in-action, emerge. Unlike the earlier emotions, these self-conscious emotions are elicited by cognitions that involve the self and are less elicited

by the literal world; thus, "I am proud" because I achieved a sought-after goal by my own efforts. These new emotions are based on ideas and like the earlier emotions exist because of their adaptive significance.

Our emotional lives are first characterized by the existence of these early action patterns, then by the emergence of consciousness, which in turn gives rise to the self-conscious action patterns. Both the early and later action patterns are innate responses tied both to the literal world and to the world of ideas. Even so they are readily affected by environments. These environmental influences are what constitute the familial and cultural rules that surround the child from birth, and perhaps even from before birth.

We can use the action pattern of disgust as an example of this development since it captures well what is proposed. Bitter and sour tastes elicit in the very young infant a disgust-like face: the infant displays an open mouth and a nose with a wrinkled-like expression as he rejects the food in his mouth. This is an innate response, part of the adaptive system designed to prevent the taking in of potentially dangerous substances. This disgust action pattern is later combined in some fashion with ideas about standards, values, and rules. These ideas are learned through the child's interaction with his social world including parents, siblings, and peers. Ideas like the action pattern are related to the earlier general withdrawal pattern seen at birth. In this way the action pattern of disgust becomes available for use as part of our idea system and thus becomes moral disgust, the elicitor of which now has to do with failure vis-à-vis standards. For disgust to become connected to ideas requires the rise of consciousness.

Figure 1.1 shows in schematic form the theory proposed. As can be seen, emotional development over the first 3 years of life is divided into the early emotions, the rise of consciousness, the early or exposed self-conscious emotions, and, finally, the evaluative self-conscious emotions.

Following Katharine Bridges,[13] as well as others, we believe that the child at birth shows at least a three-part emotional life. First, the infant exhibits a general distress marked by crying and irritability. Second, the infant displays pleasure marked by smiling. Third, the infant displays attention to and interest in the environment from the beginning of life, without either the positive or negative action patterns. Certainly by age 3 months, if not before, joyful expression emerges, infants start to smile, and they show excitement/happiness when confronted with familiar events, such as faces both human and animal. Also by 3 months, sadness emerges, especially in connection with the withdrawal of positive events, like when their mothers stop interacting with them. Disgust also appears in a spitting out and getting rid of unpleasant-tasting and -smelling objects placed in the mouth. Children by 3 months are already showing action patterns of interest, joy, sadness, and disgust, and exhibiting these facial expressions to appropriate events.

Although anger has been reported to emerge between 4 and 6 months,[14]

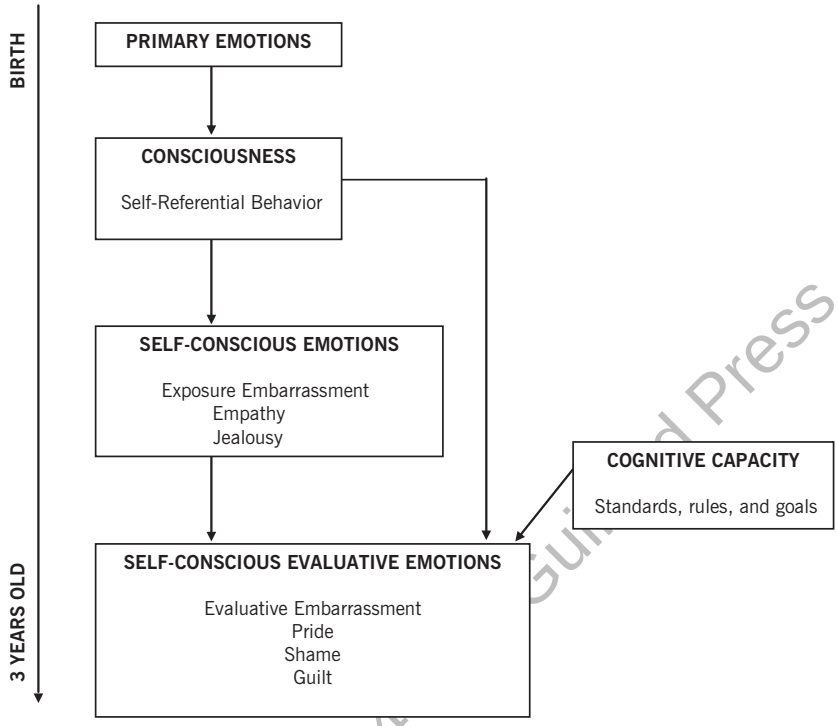

FIGURE 1.1. The theoretical model. Adapted from Lewis, M. (1992*). Shame: The exposed self* (p. 87). New York: Free Press. Copyright 1992 by Michael Lewis. Adapted by permission of the author.

we believe that it appears even earlier. As our studies have shown, anger is a particularly interesting emotion, since, from Darwin on, it has been associated with a desire to overcome an obstacle.[15] Fearfulness seems to emerge a bit later, since fearfulness requires further cognitive development. Rudolf Schaffer[16] has shown that in order for children to show fearfulness, they need to compare the event that causes fearfulness with some other event. For example, in fear of a stranger an infant has to compare the face of the stranger to its internal representation or memory of faces it has seen before. Children's ability to show fearfulness, therefore, does not seem to emerge until this comparison ability emerges. Children begin to show this behavior at about 7 to 8 months, although it has been reported by some to occur even earlier, especially in children who seem to be precocious. Surprise also appears in the first 6 months of life. Children show surprise when there are violations of expected events.[17] Surprise can also be seen as a response to discovery, as in "Aha!" experiences.

In the first 8 or 9 months of life, children's emotional behavior reflects the emergence of the six early emotions or as Darwin called them, action patterns. These action patterns evolved because of their adaptive significance, as they are associated with particular classes of elicitors. They are not learned, although they are affected by the environment in which the child is raised. Moreover, there is no reason to assume that mentalism is necessary for their appearance.

Sometime in the second half of the second year of life, the emergence of consciousness, the mental representation of "me"—seen in self-referential behavior—occurs. When it does, it gives rise to the *self-conscious exposed emotions*, which include embarrassment, empathy, and jealousy. While I will report on the studies of development of these emotions later, I will mention briefly that we have shown that the emergence of embarrassment takes place only after self-recognition or consciousness occurs.

Two points are to be noticed about this class of new emotions. First, observation of these emotions requires not only measuring a facial expression, but measuring bodily and vocal behavior as well. Whereas the earlier emotions can be observed readily in specific facial configurations, these new emotions require measurement of bodily behavior. Embarrassment, for example, is best measured by such signs as smiling, nervous bodily touching, and short duration head and gaze aversion. The second point is that although these emotions require self-referential behavior, they require few other cognitive abilities. The emergence of these self-conscious emotions is related uniquely to the mental representation of the self and the utilization of that representation in regard to others.

A second cognitive ability occurs sometime between 2 and 3 years of age. This ability is characterized by the child's capacity to evaluate his behavior against a standard, rule, or goal, as in the case of parental or teacher sanction or praise, or it can exist internally, as in the case of the child's own understanding of others' standards. This new cognitive capacity allows the child to evaluate her own behavior and gives rise to still another set of emotions, which I have called *self-conscious evaluative emotions*. They include pride, shame, and guilt, among others. These emotions require that a child have a mental representation of herself and be capable of comparing her behavior against standards, rules, and goals of the culture in which she is embedded. If the child fails vis-à-vis the standard, she is likely to feel shame, guilt, or regret; if she succeeds, she is likely to feel pride. It is important to note that these new classes of emotions are quite different from the early emotions; pride and shame are quite different from happiness and sadness. So while we feel happy about winning money in a lottery, we would not feel pride because we would not view the winning of the lottery as having anything to do with our own behavior. The same is true for failure; sadness is not the same as

guilt or shame. These complex evaluative emotions make their appearance between 2½ and 3 years of age.

Thus, by 3 years of age, the emotional life of the child has become highly differentiated. From the original tripartite set of emotions, the 3-year-old has come to possess an elaborate and complex emotional array. Although the emotional life of the child will continue to be elaborated and will expand, the basic structures necessary for this expansion have already been formed. New experiences and more elaborate cognitive capacities all serve to enhance and elaborate the child's emotional life. However, by 3 years of age, the child already shows those emotions that Darwin characterized as unique to our species—the emotions of self-consciousness. With these emotions now acquired, a large part of the major developmental activity has been achieved.

A CHAPTER OUTLINE

This book is arranged as follows in order to present the theory of emotional development as outlined.

In Chapter 2, *Deconstructing Emotions*, we take up the question "What are emotions?" and try to show that by talking about the events that elicit emotions, emotions as action patterns and self-experiences, we are better able to look at issues in development. We argue that the elicitors are, in early life, made up mostly of the literal events in the world, which from an evolutionary adaptive perspective are linked to unique action patterns. Later, the elicitors become ideas; thus, emotional development moves from literal events to cognitions. Action patterns also have an evolutionary adaptive connection, although they are highly adaptive to the current life of the child. Self-experiences or consciousness may also have an adaptive significance since they are part of the growth of mentalism.

Chapter 3, *Multiple Emotions and Moods*, continues the discussion of the nature of emotional life, offering the idea that single emotions may not be the rule; rather multiple emotions are as likely to occur to any single elicitor. That we can experience both sadness and happiness in response to the same event suggests that the idea of one emotion rather than a set of emotions needs reconsideration. Moreover, in talking about an emotion, we need to make some distinction between a transient emotion and one having a longer duration. The latter are called "moods." Indeed, it is the array of different moods that are often used to characterize a child's personality.

Chapter 4, *The Early Emotions*, starts us on the construction of the theory of development as we try to demonstrate that the early action

patterns of approach and withdrawal differentiate themselves. The early emotions or action patterns of joy, anger, and interest derive from the primary approach pattern, while disgust and sadness emerge from the primary withdrawal pattern. Interestingly, fear appears to be some combination of the approach and withdrawal patterns. What is important to note is that these primary approach and withdrawal patterns by 6 to 8 months have differentiated themselves into these early emotions, each linked in part to specific elicitors, the consequence of their adaptive significance.

Chapter 5, *The Rise of Consciousness*, is perhaps the most important one for our theory of development for it is here, in the middle of the second year of life, where mentalism, the child's earliest ideas about herself, emerges. While it is likely to be a gradual process, its emergence appears to be a consequence of the maturation of specific regions of the human brain. This idea of "me" is differentiated from the machinery of the self, biological features that until the emergence of consciousness are more likely to control our actions through such processes as procedural rules as discussed by Josef Perner.[18] Our work on self-referential behavior such as mirror self-recognition, use of personal pronouns, and pretend play has been used as measures of this emergent capacity from which the later self-conscious emotions emerge.

The role of consciousness is not limited to the development of emotional life. As we try to show in Chapter 6, *The Transforming Role of Consciousness,* consciousness underlies the development of our social and cognitive lives. As Joyce Carol Oates recently wrote, "It is our human capacity for being in one place, while having the mental capacity to imagine another place, as we have the mental capacity to recall the past, learn from, and calculate the future; that is our specific exceptional talent."[19] The emergence of this capacity of consciousness gives rise to a new set of emotions that begin to appear simultaneously with self-referential behavior. First is the emergence of the self-conscious emotions, which require the least additional cognitive capacity. Thus, embarrassment, empathy, and envy make their appearance around 2 years. Keep in mind that the earliest type of embarrassment, as Darwin wrote, is caused by our attention to others attending to us, and that empathy involves placing ourselves in the role of the other, which means that these abilities require self-representation, or what we have called consciousness.

Chapter 7, *Lying and Deception in Emotional Life,* brings us back to the issue of mentalism and the role of consciousness. Moreover, it also attempts to show that lying and deception changes the child's experiences of her own action patterns. Lying and deception is possible to oneself since it is an emergent property of consciousness. Self-deception allows us to manipulate and change or alter our self-experiences, thus allowing us to

create a flow of emotions, changing, for example, shame to guilt or joy to sadness.

Chapter 8, *The Self-Conscious Emotions,* discusses the growth of other cognitive abilities by age 3, such as standards, rules, and goals, and the idea of ownership, leading to the final set of the self-conscious emotions. Thus, shame, guilt, pride, and embarrassment are seen at this time. With the onset of these moral emotions, the human child has in 3 years moved from an undifferentiated emotional life to one that is adult-like and complex, although much more development will occur. The emergence of these self-conscious emotions is differentiated from the earlier ones. Most important, the elicitors of these complex emotions are no longer the features of the literal world; rather, they are self-referential cognitions, and as such are highly influenced by culture.

Chapter 9, *Temperament, Emotion, and Stress*, makes the case that, while the effects of socialization are most important, individual differences in temperament have an equal role. While the influence of the social world, in particular the mother, is considerable, I think that this role is overstated. Until relatively recently, it was the mother and her mothering that was held responsible for such diverse differences as autism, homosexuality, and colic; indeed it is still believed to play some important role in attention deficit disorder (ADD).[20] It is now recognized that some individual differences in emotional behavior may be more likely a consequence of temperament than of socialization.

In order to explore the role of socialization in emotional life, Chapter 10, *The Socialization of Emotion*, discusses the role of the social world in affecting both the young infant's action patterns and the self-conscious emotions. Clearly, environments that favor events connected to specific action patterns have to play an important role. Thus, a social world full of events of loss or uncertainty will promote the action patterns of sadness and fear. Facilitating one action pattern over another has to have profound effects. It is likewise true for the more complex self-conscious emotions: since the eliciting events for these are ideas, they are socialized not only by the children's mother, but by the child's entire social world, including father, siblings, and peers. As we will try to show, the standards a child holds, the self-attributions he possesses, including attributions about responsibility, are part of the role of the social world. Thus the role of the social environment of the child increases with development.

Chapter 11, *Emotional Development Gone Awry*, provides a discussion of less typical development, first of the early emotions, and then of the self-conscious ones. Based on data on children with Down syndrome, children with autism spectrum disorder, and children with other pathologies, it explores how the typical process as described in the early chapters goes

awry. Because the ideas that are the elicitors of the self-conscious emotions are most affected by socialization factors, children who are abused and neglected provide a special case for seeing how really poor parenting can and does affect children's emotional development.

Chapter 12, *The Fugue,* serves as a summary of the theory of emotional development and suggests the direction of where we might go to further its study.

Make no mistake, while I have tried to be comprehensive in outlining a theory of emotional development in these 12 chapters, there is much more that needs to be said. More important, as one of the few attempts to build a comprehensive theory of emotional development using the data now available, I consider it only the beginning of our search.

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