

provide good arguments or evidence. I conclude the chapter with a discussion of the various emotional technologies of persuasion such as subliminal advertising.

The most recent discipline to have entered the debate on emotion is artificial intelligence. Since the early 1990s, computer scientists have become increasingly interested in building emotional machines, and workers in robotics are already making some progress in this area. In the final chapter I discuss these recent developments, and speculate on where it will all lead. Will we succeed in building robots that have feelings just like we do? And what might be the consequences of such technology?

I do not pretend to have the last word on emotion. A really good theory of emotion may remain forever beyond our grasp. However, I find the attempt to construct such a theory a fascinating thing in its own right. I hope that reading this book will lead you to share my enthusiasm.

*London*

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## The universal language

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When I was 15, some friends of mine invited me to join their punk rock band. The previous singer, while very good in rehearsals, suffered from stage fright, and could not perform in public. I was just the opposite: my voice was terrible, but I had no qualms about making a fool of myself. Just the right ingredients for a punk rock singer!

After the first rehearsal, we sat around planning our careers in the music business. It was then that Tim told me how happy he was that I had joined the band. I can still remember vividly the intense reaction that comment produced in me. A warm wave spread outwards and upwards from my stomach, rapidly enveloping the whole of my upper chest. It was a kind of joy, but unlike any moment of joy I had felt before. It was a feeling of acceptance, of belonging, of being valued by a group of people whom I was proud to call my friends. I was momentarily lost for words, shocked by the novelty

of the sensation. In the years since then, the feeling has never repeated itself exactly, and I have never forgotten it.

I am certainly not the only person to have experienced this particular emotion. Millions of football fans and religious worshippers seem to feel something similar every weekend. And yet there is no word for it in English. Just now, when I was describing it, I had to use several words: 'a kind of joy, a feeling of acceptance, of belonging, of being valued by a group of people . . .'. Perhaps the closest thing to a name for this emotion is a phrase that was coined by Romain Rolland: the 'oceanic feeling'. But even this poetic expression requires two words. Would it not be easier if we just had one?

In Japan, it seems, they do. The word *amae* means just the kind of 'comfort in another person's complete acceptance' that I felt when Tim made his comment. The original Chinese ideogram was of a breast on which the baby suckled, which suggests that this emotion involves a loss of separateness, a return to the sense of oneness that fuses mother and child together in the first months of life.

Why is there no word for *amae* in English? The different ways in which various languages carve up the world reflect different cultural needs. Perhaps the Japanese need a word for *amae* because the emotion it designates

accords with the fundamental values of Japanese culture. Unlike the situation in the English-speaking world, which prizes independence, self-assertion, and autonomy, in Japan it is often more important to fit with others and live in harmonious groups. *Amae* is an emotion that helps people to comply with these values.

Whatever the reason for this particular difference between the English and Japanese languages, it does point to any fundamental difference between the *peoples* of England and Japan. As an English speaker, I do not have a precise term to describe the emotion I felt in Tim's house, but that did not stop me from *feeling* the emotion. On the contrary, the emotion just happened without warning, and left me groping for words to describe it. Years later, when I read a description of *amae*, I knew immediately that it named the emotion I had felt that evening at Tim's house. People all over the world experience this emotion, but only some of them have a word for it.

### *The cultural theory of emotion*

All this seems quite straightforward. Yet, for a large part of the twentieth century, many anthropologists would have turned their noses up at the last paragraph, and

they subscribed to a view known as the cultural theory of emotion. According to this view, emotions are learned behaviours, transmitted culturally, much like languages. Just as you must first hear English before you can speak it, so you must first see others being joyful before you can feel joy. You could certainly not feel *amaze* unless you had been brought up in a culture in which *amaze* was commonly expressed and discussed. On this theory, people living in different cultures should experience different emotions.

In the late 1960s, while this view of emotion was still the reigning orthodoxy, a young American anthropologist called Paul Ekman set out to find firm scientific evidence in its favour. To his great surprise, he ended up doing just the opposite. Ekman's studies provided the first scientific evidence that the cultural theory of emotion was badly off the mark.

Ekman's methodology was simple but clever. He travelled to a remote, preliterate culture (the Fore, in New Guinea) to ensure that the subjects had not seen Western photographs or films, and so could never have *learned* Western emotions. Ekman then told them various stories, and asked them to choose, from three photographs of Americans expressing various emotions, the photo that most closely matched the story.

For example, one story involved coming across a wild



1 Some photographs of Americans expressing various emotions Paul Ekman used these photographs in his cross-cultural research.

pig when alone in a hut, a situation that would elicit fear in Westerners. Sure enough, the Fore pointed to the same expressions that Westerners linked to the stories. Just to be sure, Ekman asked some Fore people to make facial expressions appropriate to each of the stories and videotaped them. On returning to San Francisco, he did the experiment in reverse, asking Americans to link the Fore faces to the stories. Once again, the judgements tallied.

When Ekman first presented his results to the American Anthropological Association, he was met with cries of derision. The cultural theory of emotion was so entrenched that any criticisms were simply laughed out of court. Eventually, however, Ekman won the argument. It is now widely accepted among emotion researchers that some emotions, at least, are not learned. They are universal, and innate.

Ekman called these emotions 'basic'. Researchers disagree about how many basic emotions there are, but there is a consensus emerging that they include joy, distress, anger, fear, surprise, and disgust (see Box below). There is no culture in which these emotions are absent. Moreover, they are not learned; they are hard-wired into the human brain. This much is clear from the fact that babies who are born blind still make the facial expressions typical of these emotions—smiling,

#### Basic emotions

Basic emotions are universal and innate. They are of rapid onset and last a few seconds at a time. Researchers disagree about how many basic emotions there are, but most would include the following in their list:

- Joy
- Distress
- Anger
- Fear
- Surprise
- Disgust

Some researchers call these emotions by different names. For example, to see 'happiness' and 'sadness' in the list of basic emotions, I think these words are better used to describe moods rather than emotions (see Chapter Three). So in this book I use the words 'joy' and 'distress' to refer to basic emotions and reserve the terms 'happiness' and 'sadness' for good and bad moods.

grimacing, and so on. Emotional expressions are not like words, which differ from culture to culture; they are closer to breathing, which is just part of human nature. Of course, the diehard proponent of the cultural





2 In these two self-portrait etchings, Rembrandt shows the facial expressions of two basic emotions: surprise and anger.



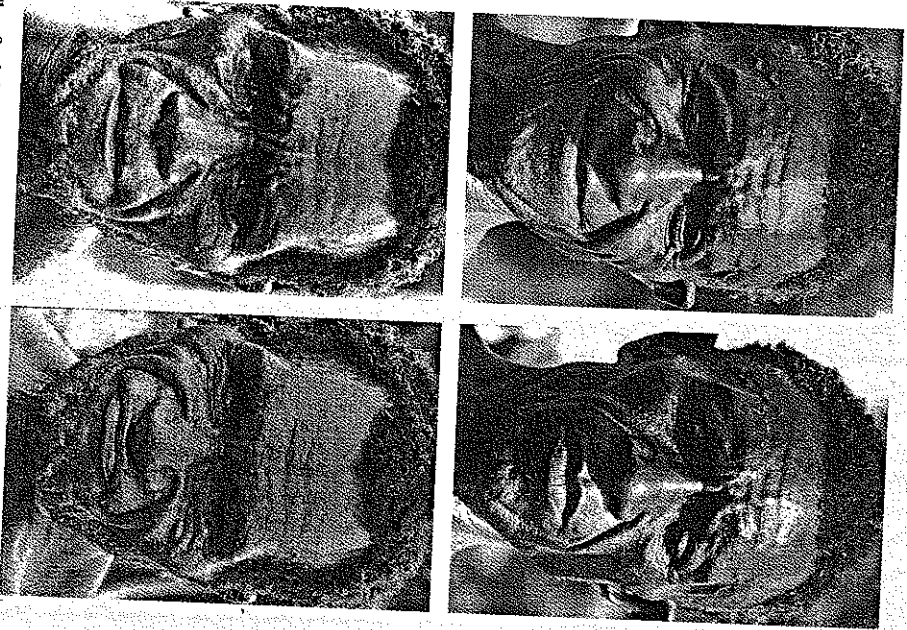
theory of emotion can always retort that Ekman's studies showed only that the *facial expressions* associated with basic emotions are universal and innate. The studies tell us nothing about the subjective feelings behind those expressions. This is true enough, but the same applies to *everything* that is private and subjective. I can never be sure, for example, that your experience of the colour red, or your sense of the sweetness of sugar, are the same as mine. However, if our subjective experiences were really so radically different, it is difficult to know how we could ever communicate at all. We might be able to use the same words in a similarly grammatical fashion, but, if we were using them to represent fundamentally different concepts, we would surely end up in a hopeless muddle of misunderstandings. We would never be able to agree about anything.

Now, while disagreement and misunderstanding are certainly common, they are not so common as to prevent all effective communication. Most of us seem to get our message across most of the time. When I first read the description of *amae* in a book about emotions, I knew immediately what it meant, even though there is no simple translation for it in English. Likewise, when we read poems and novels written by authors from other cultures, we recognize the emotions

they describe. If emotions were cultural inventions, changing as swiftly as language, these texts would seem alien and impenetrable.

Communication is possible without words too. And this is largely thanks to the basic emotions we all share. When anthropologists first come into contact with a previously isolated people, their only means of communication is via facial expressions and bodily gestures, many of which are specifically designed to express emotions. The anthropologists may smile, an expression that will be recognized immediately by the isolated tribespeople. The tribespeople may smile in return, showing the anthropologists that they share the same feeling.

Our common emotional heritage binds humanity together, then, in a way that transcends cultural difference. In all places, and at all times, human beings have shared the same basic emotional repertoire. Different cultures have elaborated on this repertoire, exalting different emotions, downgrading others, and embellishing the common feelings with cultural nuances, but these differences are more like those between two interpretations of the same musical work, rather than those between different compositions. Just as two orchestras will play the same symphony slightly differently, so two cultures will play out their emotional



3 The facial expressions for basic emotions are the same all over the world.

repertoire in different tones. It will be clear to all, however, that the score is the same.

The universality of basic emotions argues strongly for their biological nature. If basic emotions were cultural inventions, their ubiquity would be very surprising indeed. If we suppose, however, that they are part of humanity's common biological inheritance, then their presence throughout the world is easy to explain. Just as all human beings have the same kind of body, with minor variations, so we all have the same kind of mind. This universal human nature is encoded in the human genome, the legacy of our shared evolutionary history.

Today, there are over six billion human beings, and they are spread out all over the globe. A hundred thousand years ago, however, there were only a few thousand human beings on the planet, and they all lived in a small region of East Africa. All the human beings alive today are descended from this small population, some of whom left Africa at some point and began the slow business of colonizing the rest of the world.

When they left Africa, our ancestors all looked the same. They all had black skin, for example. Then, as different human groups moved into new areas, they evolved in slightly different ways. Skin colour is the most obvious of these differences. The differences, however, are literally just skin-deep. Our internal

organs, including our brains, are basically the same the world over. Since basic emotions are largely determined by the structure of our brains, it really should come as no surprise that they too are fundamentally the same in all cultures.

Now that the psychological unity of humankind is more widely acknowledged, it can be hard to understand how the cultural theory of emotion ever gained such widespread acceptance. Perhaps the answer lies in the (equally universal) human tendency to exaggerate the small differences between the various human groups. In the search for cultural identity, we naturally fix on the things that set us apart from others, rather than on the things that link us together. When it comes to emotions, we often pay attention to the small cultural differences, and ignore the overwhelming similarities.

European attitudes to the peoples of South-East Asia are a case in point. For a long time in England and other parts of Europe, people from Japan, China, and countries in South-East Asia were commonly described as being mysterious and unfathomable. This stereotype of the 'inscrutable oriental' was due in large part to the fact that European travellers found it hard to read their emotions. They wondered whether the poker face of the Japanese might conceal emotions that were very different from their own.

The Japanese do, in fact, take greater pains to hide their emotions than do people in Europe and North America. Every culture has its own rules that define the socially acceptable forms of emotional expression. In Europe and North America, these 'display rules' encourage vivid facial expressions of emotion; a poker face is generally regarded as dull or deceptive. In Japan, on the other hand, excessive emotional displays are often perceived as rude, and Japanese people consequently make more of an effort to attenuate their emotional expressions.

Underneath these display rules, however, the emotions are the same. In an interesting experiment conducted by Paul Ekman and Wallace Friesen, American and Japanese men were videotaped while they watched film clips. Some of the clips were of neutral or pleasant events, such as a canoe trip, while others were of rather disgusting things such as a ritual circumcision, the suction-aided delivery of a baby, and nasal surgery. In one showing, the subjects watched the clips in private, while in another an interviewer was present. When alone, similar facial expressions were observed in both American and Japanese subjects. When the interviewer was present, however, the Japanese smiled more and showed less disgust than their American counterparts.

The most interesting thing about this experiment,



however, became apparent only when the videotapes were viewed in slow motion. Only then was it possible to observe that, when the interviewer was present, the Japanese subjects actually started to make the same expressions of disgust as the Americans did, and succeeded in masking these expressions only a few fractions of a second later. In other words, the same basic emotions were felt by both the Americans and the Japanese. These biological responses were automatic, beyond voluntary control. Only after consciousness caught up, a few hundred milliseconds later, could the learned display rules be imposed on top of the basic biological response.

The inscrutable oriental, then, is concealing not radically different emotions, but the very same emotions as those felt by all other human beings the world over. The European travellers who suspected that an alien mind lurked beneath the less expressive oriental countenance were misled by the superficial differences between their display rules.

As the experiment with the American and Japanese men demonstrates, basic emotions such as fear and disgust are automatic, reflex-like responses over which we have little conscious control. And, like reflexes, they are much faster than anything we do voluntarily. Thus the culturally determined display rules always arrive on the scene after the basic emotional response has been set in

motion. The basic emotions are hardwired, etched into our neural circuitry by our genes rather than by our culture, part of the basic mental design that is common to us all.

### *On being a wild pig*

The same is not true for all emotions, however. Some emotions, it seems, really *are* culturally specific. There is an emotion felt by the Gururumba people of New Guinea, for example, that is apparently never experienced by people from other cultures. It is known as the state of 'being a wild pig', because people who experience it behave just like wild pigs: they run wild, looting articles of small value and attacking bystanders.

Emotions like this would certainly not qualify as 'basic' in Ekman's sense of the word. They are not universal. Nor are they innate. Now, the word 'innate' has been used in lots of quite different ways, and some biologists and philosophers have recently argued that we should abandon the term altogether. I think the term is fine, so long as we are careful to say what we mean by it. When I say that some trait is 'innate', I mean that it needs very few special conditions for it to develop. In other words, so long as you give a child the basic things

it needs to survive, such as food, shelter, and company, that child will develop all the traits that are innate in humans. Language is innate in this sense; you do not need to provide lots of special instruction materials for a child to acquire a language. All you need to do is bring the child up in a group of other humans who can speak. The ability to speak a particular language, such as English or Japanese, is, of course, not innate. Special conditions over and above the basic necessities for survival are required for such a trait to develop. These conditions do not obtain everywhere.

In saying, then, that culturally specific emotions are not innate, all I am saying is that they will not develop unless special conditions are in place, conditions that are provided only by particular cultures. The main such condition is that you *learn* about this emotion when you are a child. In other words, unlike basic emotions, which develop willy-nilly, culturally specific emotions develop only if you are exposed to them by your culture. For emotions like 'being a wild pig', then, it really *is* the case that you would not feel them unless you had first heard about them. It is this that distinguishes them from basic emotions such as fear or anger, which you would have the capacity to feel even if you had never heard of them.

The fact that different cultures can produce human

beings with different emotional repertoires is testimony to the remarkable plasticity of the human mind. If you believe that the human mind works in a particular way, then, even if your theory is wildly inaccurate as an account of human psychology in general, *your* mind will probably start behaving partly as your theory predicts. In other words, theories about the mind are, to some extent, self-fulfilling prophecies. If your culture teaches you that there is an emotion called 'being a wild pig', then the chances are that you will experience this emotion. And this experience will not be a calculated act of deception. If deception is involved at all, it is a kind of *self*-deception, though this is probably not a very good way of putting things, as culturally specific emotions do not *feel* fake. In fact, they feel no different from basic emotions, which are universal and innate. Gurrumba men (it is only men who experience this emotion) really feel as if the emotion of 'being a wild pig' has taken them over against their will, in the same way that basic emotions such as fear or disgust just 'happen to us', without any conscious decision on our part. Those in the grip of culturally specific emotions like 'being a wild pig' are not faking it.

An interesting feature of culturally specific emotions like 'being a wild pig' is that they often provide people with a way out of difficult situations. Gurrumba men

who are in the grip of this emotion are treated with remarkable tolerance; the emotion is seen as an unwelcome but involuntary event, and so people suffering from it are given special consideration, which includes temporary relief from their financial obligations. By a curious coincidence, it so happens that the emotion is mainly experienced by men aged between 25 and 35—precisely the age when they first encounter the financial difficulties that arise in the early years of marriage. How fortunate it is that, just when a man's economic obligations increase, he may experience an emotion that causes others to allow him some leeway in meeting those obligations.

Of course, it is really no coincidence that the state of 'being a wild pig' afflicts just those people who might derive some benefit from it. The psychologist James Averill has argued that it is precisely the function of many emotions that they help people to cope with the particular demands of their culture. If this is true, it is true only of culturally specific emotions. Basic emotions are not tailored to fit the specific demands of a particular culture, but designed to help us meet the fundamental challenges faced by humans everywhere, as we will see in the next chapter.

### *Enduring love?*

From the way I have presented things so far, it might seem as if there were two quite clear-cut categories of emotion. On the one hand, there are basic emotions which are universal and innate. On the other hand there are culturally specific emotions such as 'being wild pig'. However, things are not really this simple. Innateness is not an all-or-nothing thing; but a question of degree. When investigating emotions or any other biological or psychological trait, we should not really ask whether it is innate or not, but rather *how* innate it is. The more 'special conditions' over and above the basic necessities of survival that are required for the development of a trait, the less innate it is. Learning language is less innate than growing legs, since growing legs requires only a normal genome, basic nutrition and the luck to escape nasty accidents, whereas learning a language requires all these things *plus* interaction with other speaking humans. Learning English is less innate still, since it requires that the other speaking humans be English-speakers.

So, rather than thinking of basic and culturally specific emotions as two completely different kinds of thing, we should see them as sitting at opposite ends of a single spectrum. Depending on how many special

conditions are required for a given emotion to develop, and on how special they are, the emotion will be located more towards the 'basic' end of the spectrum or more towards the 'culturally specific' end. Basic emotions are much more innate than culturally specific emotions, but they still require some minimal conditions to develop.

With some emotions, it is relatively easy to see where they are located on the innateness spectrum. There is much evidence to suggest that fear and anger are very basic, while it is clear that 'being a wild pig' is very culture specific. With other emotions, however, things are not so clear. One emotion in particular that has divided opinion is romantic love. Some maintain that it is a universal emotion, hardwired into the brain just like fear and anger. Others disagree, arguing that romantic love is more like the state of 'being a wild pig'. La Rochefoucauld famously declared that 'some people would never have fallen in love if they had never heard of love'. Those who think romantic love is a culturally specific emotion go even further: they claim that *nobody* would fall in love if they had not previously heard romantic stories.

The most famous proponent of this view was the writer C. S. Lewis, who argued that romantic love was invented in Europe in the early twelfth century. It was

around this time that 'courtly love' became the central theme of much European poetry. In many of the poems a nobleman would fall in love with a lady at the royal court. He would become her knight and devote himself to her service, though his passion for her would rarely be consummated. The love of Lancelot for King Arthur's wife, Guinevere, is perhaps the best-known story to emerge from this literary genre.

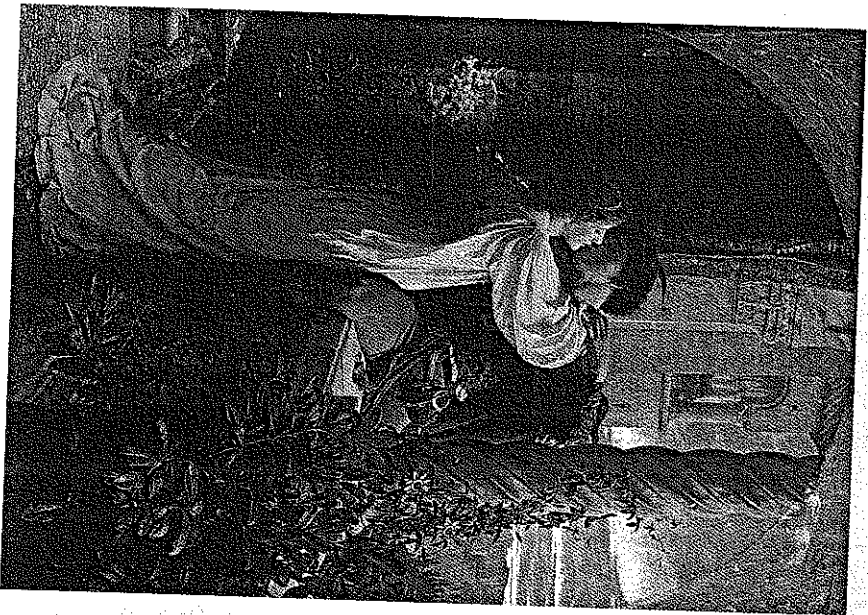
If romantic love really *were* an invention of some medieval poets, nobody could have felt this emotion before the Middle Ages. C. S. Lewis was quite happy to accept this consequence of his provocative thesis, and proclaimed that 'no one falls in love in Homer or Virgil!'

This must surely be among the front-running candidates for the most ridiculous idea of the twentieth century. It seems hard to believe that a sensitive man like C. S. Lewis could fail to detect the unmistakable passion expressed in the *Song of Songs*, a book in the Old Testament:

What a wound thou hast made, my bride, my true love,  
 What a wound thou hast made in this heart of mine!  
 And all with one glance of an eye,  
 All with one ringlet straying on thy neck!

Yet this text pre-dates the medieval poetry of courtly





4 Romantic love: is it just a literary invention?

love by over a thousand years. In fact, romantic love probably goes back much further than this, perhaps even to the dawn of humankind. A hundred thousand years ago, while our ancestors were still confined to the African plains, their physical activities were very different from ours, but their emotional lives were probably very similar. The first humans spent much of their time scouring the terrain for edible plants and making temporary shelters, activities now completely absent from all but a few human communities. But many evolutionary psychologists have argued that they also spent a lot of time getting infatuated with one another, making love, feeling jealous, and getting heartbroken, just as we do today.

Romantic love can also be found in cultures separated from our own by space as well as time, in the remote preliterate societies studied by anthropologists. Yet, if romantic love were a European invention, it could not be experienced by peoples who had had no contact with Europe. This simple consideration allowed two anthropologists to put the cultural theory of romantic love to the test. First, they needed a working definition of romantic love, so they identified the following core features of the idea: a powerful feeling of sexual attraction to a single person, feelings of anguish and longing when the loved one is absent, and intense

joy when he or she is present. They also listed other elements, including elaborate courtship gestures such as giving gifts and showing one's love in song and poetry. They then examined the anthropological literature and counted the number of cultures in which this collection of features was described. To their surprise, they found that it was described in 90 per cent of the cultures on record. If anthropologists have actually *observed and noted down* incidents of romantic love in 90 per cent of the societies they have studied, it is a fair bet that this emotion exists in the remaining 10 per cent too.

In the light of all this evidence, it seems hard to believe that anyone could doubt the universality of romantic love. However, there is a small grain of truth in the view of romantic love as a European invention. Even basic emotions differ from culture to culture, though only to a small degree. To return to the musical analogy, the symphony sounds slightly different when played by different orchestras, even though the score is the same. In a similar way, romantic love is played out slightly differently in different cultures. In the West it is marked by special features not found elsewhere. These special features include the idea that romantic love must take you by surprise, the idea that it should be the basis for a lifelong commitment, and the idea that it is

the supreme form of self-fulfilment. So, while romantic love is a universal theme, it is a theme that admits of some minor variations.

Romantic love may not be a culturally specific emotion like 'being a wild pig', but nor is it a basic emotion like fear. The philosopher Paul Griffiths has argued that there are not two kinds of emotion, but three. In addition to basic emotions and culturally specific emotion he claims that there are 'higher cognitive emotions'. This is fine, so long as we realize that these categories are not black and white. As already noted, the distinction between basic emotions and culturally specific emotions is one of degree rather than of kind. There is a spectrum of innateness, with basic emotions being located at the 'very innate' end, and culturally specific emotions at the 'least innate' end. Adding a third category called 'higher cognitive emotions' is to divide the spectrum up into three sections rather than two. Higher cognitive emotions are less innate than basic emotions, but more innate than culturally specific ones. As well as differing from basic emotions in the degree of innateness, higher cognitive emotions also differ in a number of other ways. They are not so automatic and fast as basic emotions, and nor are they universally associated with a single facial expression. Love is a case in point. Although love at first sight

possible, it is relatively rare; it seems much more common for love to grow gradually over the space of several days, weeks, or even months. Contrast this with the emotion of fear, which typically overtakes a person in a matter of milliseconds. And, while fear is easily recognizable by its typical facial expression, there is no specific facial expression associated with the emotion of love.

Griffiths proposes that emotions like love should be called 'higher cognitive emotions', because they involve much more cortical processing than basic emotions. While basic emotions are largely processed in sub-cortical structures buried beneath the surface of the brain, emotions like love are more associated with areas of the neocortex. The neocortex is the part of the brain that has expanded most in the past five million years of human evolution, and supports most of our most complex cognitive abilities such as explicit logical analysis. The fact that the higher cognitive emotions are more cortical than the basic emotions means that they are more capable of being influenced by conscious thoughts, and this in turn is probably what allows higher cognitive emotions to be more culturally variable than the basic emotions. However, despite their greater cultural variability, the higher cognitive emotions are still universal. Like basic emotions, but unlike

#### Higher cognitive emotions

Higher cognitive emotions are universal, like basic emotions, but they exhibit more cultural variation. They also take longer to build up, and longer to die away, than basic emotions. Higher cognitive emotions include the following:

- Love
- Guilt
- Shame
- Embarrassment
- Pride
- Envy
- Jealousy

Some basic emotions can also be co-opted for the social functions that apply *higher cognitive* emotions. When someone feels disgusted by the sight of latrines, this is a basic emotion. When you feel disgusted by an immoral act, however, the basic emotional response designed to keep you away from infections or poisonous things is co-opted for the *social* function of keeping you away from untrustworthy people.

culturally specific emotions, the higher cognitive emotions are part of human nature, shaped by our common evolutionary history.

What other higher cognitive emotions are there, besides love? Possible candidates include guilt, shame, embarrassment, pride, envy, and jealousy (see Box above). Perhaps *amae* is also best classified as a higher cognitive emotion. This list suggests a further property of higher cognitive emotions: all these emotions are fundamentally *social* in a way that basic emotions are not. You can be afraid of, or disgusted by, inanimate objects and non-human animals, but love and guilt require other people for their existence. You might feel guilty about hurting an animal, and some people claim to be in love with their pets, but it seems unlikely that guilt and love evolved for such purposes. The higher cognitive emotions seem to have been designed by natural selection precisely to help our ancestors cope with an increasingly complex social environment. As we will see in the next chapter, these emotions may be the cement that binds human society together.

## Why Spock could never have evolved

**I**f you ever watched *Star Trek*, you'll remember Spock, the pointy-eared alien. Spock was half human and half Vulcan—a species of alien that, by some quirk of fate, happened to look remarkably human in all respects other than those tell-tale ears.

The visual similarity, however, concealed a deeper difference. Behind the human-like face lay an alien brain, far superior to ours. In particular, the Vulcan race had no emotions. At some point in their past, the Vulcans had dispensed with these primitive vestiges of their animal origins, and, no longer encumbered by passion, they had attained a superhuman degree of rationality.

In supposing that a creature devoid of emotions would be more intelligent than we are, the creators of *Star Trek* were perpetuating an ancient theme of Western culture. Ever since Plato, many Western thinkers have tended to view emotions as obstacles to intelligent