

From: The Face of Man
Paul Ekman, 1980

Introduction

Looking at the faces of people who are completely different from ourselves in virtually all aspects of their life (language, customs, beliefs, physical environment, clothing, and more) can teach us about ourselves and about all people. The faces of these New Guinean people, who were emerging from an isolated, Stone Age existence, suggest an answer to the most fundamental question about the expression of emotion: Are all human beings linked by common facial expressions of emotion, or do faces vary as much as languages?

If facial expression is like language, then these New Guinean faces will seem strange, their expressions unrelated to the situations shown in the photographs. On the other hand, if facial expressions of emotion are biologically based, the product of evolution and the same for every human being of no matter what culture, race, age, or sex, then the feelings shown by these exotic New Guineans will be as familiar and recognizable as those of your next-door neighbor.

Paul Ekman
The Face of Man

THE QUESTION

I traveled to New Guinea in 1967 and 1968 to study the facial expressions of people who were isolated from other societies and who had not been able to learn how to show emotions by imitating what they saw on television, at the movies, or in picture books or magazines. If the facial expressions of these people differed from those shown by people in other countries, then I would have to consider facial expression as akin to languages, where the vocabulary differs from culture to culture. But if these people showed the same facial expressions for each emotion that we do, and I could be certain the people had not learned them by imitating Western visitors or watching the same actors on television, then I could conclude that facial expression was universal.

I began to study the facial expressions of emotion in 1966. Trained in traditional American psychology, my bias was that anything important about social behavior was entirely the product of environment, not heredity. Facial expressions of emotion would be the product of learning, not evolution, and therefore would differ across cultures. However, I had just made the acquaintance of a heretical psychologist, Silvan Tomkins, who claimed exactly the opposite. In a few hours Tomkins showed me how to read all kinds of things in people's faces which I had not been attuned to before. Although that did not prove that facial expressions are universal, still I could not easily dismiss Tomkins's theories.

I was intrigued and amazed that such a fundamental question still was unresolved, despite a century of argument. There seemed some urgency to the matter now, for there was little time left in which any people would remain isolated from the mass media and Western culture. Before planning my research I reread the past literature about facial expression, to reconsider the nature of the argument. It soon became understandable why wise men disagreed. Both sides of the argu-

ment seemed sensible, and even persuasive, but neither side had definitive evidence.

Charles Darwin, famous for his book on evolution, had also written a book on emotional expression, in which he made what was still the most convincing case for the universal side of the dispute (Darwin, 1965). Darwin claimed that facial expressions of emotion are inherited, a product of our evolutionary past, and therefore are universal for all human beings. His evidence included descriptions of how animals other than man showed emotional expressions. He described how his own children showed facial expressions at such a young age that he could not believe they had learned them. He also cited instances of blind persons, who could not have learned their expressions by watching others, showing the same facial expressions of emotional as sighted persons. Of great importance to Darwin were the answers he received to a list of questions about facial expression which he sent to various people living in different parts of the world. Even by correspondents observing people who had "associated but little with Europeans," he was told the same facial expressions of emotion occurred.

But it was easy to discount Darwin's views. Darwin did not observe people in different cultures himself, and the way he worded his questions about facial expression revealed to his correspondents the answer he was seeking. His observations of animals were also at secondhand. Until very recently, few scientists have been ready to admit that animals have emotions; and who will believe what a father says about his own children? Perhaps more important than these flaws in his methods, Darwin's emphasis on inheritance has not been popular with the social scientists of this century. The emphasis has been instead on what is learned in social behavior. Darwin's ideas also run counter to the tendency among some anthropologists to focus on what differs from culture to culture rather than on what is pancultural.

Social scientists repeatedly contradicted Darwin's claims, and their views, not his, became widely accepted. A psychologist, Otto Klineberg, in the 1930s quoted accounts of how among the Orokaiva of Melanesia the men were reported to greet their welcomed guest with a seemingly fierce look, not a smile; how Samurai women were said to show joyful faces when they heard their husbands or sons had been slain. He found many descriptions in Chinese novels of facial expressions which did not fit what might be expected in Western culture. The notion that human expressions were related to those of other animals was disproved, Klineberg believed, by an experiment in which college students could not tell how a chimpanzee was feeling by looking at photographs of his face. Although Klineberg never actually used these words, the statement "what is shown on the face is written there by culture" became the catch-phrase describing his views. Writing ten years later, Weston La Barre strengthened this viewpoint by providing numerous fascinating anecdotes of how facial expression and gesture differed in many exotic

cultures around the world. In the 1950s and 1960s Ray Birdwhistell, an anthropologist specializing in the study of body movement and facial expression, added his arguments to the dispute. Birdwhistell felt he had been misled by Darwin. He started out searching for universals, only to discover, he said, that such a search was itself ethnocentric: If you thought you had found universals, it was only because you were reading your own culture's meanings into the behavior of another culture.

Unfortunately, Birdwhistell never explained how he made his discovery that Darwin was wrong. La Barre cited anecdotes but did not systematically study the question of universality, and Klineberg relied on secondhand evidence, the reports of others usually not primarily concerned with this issue.

Here, then, were two plausible, contradictory viewpoints, each persuasive but lacking definitive evidence. There had been no research designed specifically to pursue this question, and the answer mattered. It was not solely a matter of scientific curiosity about a basic research question. There were important practical issues at stake as well. For example, how one tries to alleviate misunderstanding between people from different cultures might depend upon whether facial expressions are universal or not. In our age people from one culture increasingly interact with people from other cultures, for example on vacations, in business, in diplomacy, at airports, hospitals, universities, social gatherings. If it is true that facial expressions are universal, then people should be able to make use of this common element in cross-cultural communication. There are so many barriers because of differences in language and custom that any common element, and especially something as important as how people show their feelings, would be an invaluable aid. On the other hand, if facial expressions are usually different, it could be a disastrous error to consider them universal. Two business executives, one Greek-speaking and the other English-speaking, are mutually aware of their linguistic differences and will not be misled into thinking they understand each other's speech. But, if they think facial expressions are universal while in fact they are not, one of our fictitious executives might easily misinterpret a facial expression without realizing it. The Anglophone might think that the Greek gentleman's face showed anger when in fact his "angry" look means sadness in his culture.

Teaching people how to read faces more accurately within a society also depends upon the answer to the question about the universality of facial expression. There are many people who want to improve their ability to read emotion from facial expression: psychotherapists, counselors, ministers, personnel officers, salesmen, trial lawyers, bank loan officers, and so on. Can people be taught a universal set of emotional expressions, or must they learn the facial expressions of each cultural group? In a country like the United States, where people from Mexican-American, Chinese-American, Puerto Rican-American, Japanese-

American, Afro-American, Italian-American, and Polish-American backgrounds live, that could be a formidable task.

To settle the question would need many experiments, studying emotions in different countries in different ways. It was obvious that one study would have to be of people who were isolated, visually separated, from the rest of the world. For if everyone studied had seen motion pictures, photograph books, or television, the interpretation of the results would be arguable. Suppose we were to discover that people in the United States, Japan, Chile, Argentina, and Brazil all associated the same face with the same emotion (which we did indeed find a few years later), would it mean similar facial expressions because of common evolution, as Darwin would explain it? Or similar facial expressions because all the people studied had learned how to move their faces from watching the same people—John Wayne, Charlie Chaplin, Lucille Ball—as Birdwhistell would explain it? (Just this argument was made by Birdwhistell a few years later when we told him of our findings in South America and Japan.)

I heard that there were films of just the kind I needed in a laboratory at the National Institutes of Health in Washington, D.C. Carleton Gajdusek and E. Richard Sorenson had built a film archive which included extensive footage of two peoples from the South East Highlands of New Guinea, the Fore and the Anga. Gajdusek had become interested in the South Fore people because of a strange neurological disease, *kuru*, which afflicts only these people. He made these films partly because *kuru* is manifest in a shaking of the limbs, but also because he and Richard Sorenson realized the importance of documenting the lives of these virtually Stone Age people. As part of this interest in studying culture and child development, they also filmed the lives of people in another culture, the Anga. They took tens of thousands of feet of color film of the people of these two cultures over a ten-year period. While their focus was not on facial expression, it seemed almost certain their films might contain what I needed.

They generously lent me a copy of all their films. Over a six-month period Wally Friesen, my co-worker, and I spent hundreds of hours looking at their film, time and again, in slow motion. We found that these people showed a familiar range of facial expressions, and there were few which we had not seen within our own culture. At least we could say their facial expressions were not unique; but did their facial expressions signify the same emotions as they would in our culture? Often we had no way of knowing, since the film would not show the total context. Occasionally we knew what had happened before; for example, we could see friends greet each other with a "happy" face. Sometimes we knew what happened afterwards; someone would cry after first showing a "sad" face. This was not definitive evidence, but we became convinced, as we examined these films, that the appearance of the face with at least some emotions must be universal.

Still we worried about whether our judgments of facial expression in these films might have been biased, for when we had made those judgments, we already had seen the films more than once. Our impression that someone looked happy at this point, then afraid, might have been influenced by a memory, conscious or not, of what came next in the film. As a check we invited Silvan Tomkins to visit our lab. We did not tell him anything about the people he would see, other than that they were from two preliterate cultures. Each time we showed him a facial expression we were careful that he not see what happened before or afterward. Tomkins judged the emotions "correctly," in the sense that the emotion he saw usually fit with what came before or afterward. When we stopped the action in the film and held an expression on the screen, Tomkins had no difficulty in pointing to exactly what it was in a face which told him what emotion was being experienced. Our doubts began to disappear, and when we asked him what his impressions were of these two cultures, he performed what seemed almost an act of magic. One group of people, said Tomkins, seemed quite friendly. The others he suspected were explosive in anger, highly suspicious if not paranoid in character, and homosexual. It was the Anga Tomkins was describing (whom we did not study), and his account fit what we had been told by Gajdusek and Sorenson. They were still an "uncontrolled" group, having repeatedly attacked Australian officials who tried to maintain a government station; they were known by others in New Guinea for their fierce suspiciousness, and they led homosexual lives until the time of marriage!

That did it. In the next few months, I developed a theory which could explain how it was that facial expressions could be universal and yet be thought to be culture-specific by keen observers such as Klineberg, La Barre, and Birdwhistell. The theory proposed that facial expressions are the product of both evolution and culture, and are thus both universal in some respects and specific to each culture in others. The theory proposed that it is the appearance of the face for each emotion—produced by particular, different actions of the facial muscles—which is the product of evolution. When someone feels an emotion and is not trying to disguise it, his or her face appears the same no matter who that person is or where he or she comes from. It was this which Darwin had noted and, indeed, explained.

Culture influences facial expressions in three important ways. First, culture influences what causes us to experience a particular emotion. What makes me angry may make you amused, and be the stimulus to fear for someone else. What disgusts a person in one culture may be attractive to a person in another culture. Not all human beings are afraid of the same things, or angry about the same matters, or even surprised, or necessarily saddened or pleased by the same set of events. In largest part we are *taught* how to feel about what happens to us, and culture is the teacher. It is just because of this difference between cul-

tures that anthropologists noted variations in facial expressions from culture to culture. For example, the death of a family member may be accompanied by a sad-looking face in one culture and a happy look in another culture because death is not a universal cause of sadness.

While it seems obvious that people from different cultures may react to the same event with different emotions, no one has yet systematically described these differences. There is no catalog of the ten or fifteen most frequent or important causes of anger (or disgust, or sadness) in each culture, or even across ten or twenty cultures; and it may well be that the most frequent causes of anger, or any other emotion, will vary within a culture depending upon who is being made angry—a young or old person, a male or female, a single or married person.

The second major way in which culture influences facial expression is in establishing norms about the control of facial expression. People in many lands learn to manage the appearance of their faces, at least in public. "Wipe that look off your face." "Don't look that way at your father (teacher, sister, and so on)." "Don't you know you shouldn't be smiling in church (when your brother cries, in school, etc.)?" Children are taught what we have called *display rules*—regulations about what feelings they are allowed to show, when, and to whom. In one culture, for example, the rule might be for the mourner to cover sadness with a happy look, while another culture might encourage free or even exaggerated expressions of sad feelings. Little wonder the observer might see different facial expressions, even when the same emotion is felt.

In one experiment, described in detail in chapter 4, we tried to show how display rules might give the mistaken impression that people from different cultures have different facial expressions for the same emotion. We conducted a study comparing Japanese and American college students. In Tokyo and in Berkeley we videotaped the facial expressions of students while they watched pleasant and unpleasant films. Our hypothesis was that the Japanese would be less likely than the Americans to allow negative feelings to be seen in their faces. Part of the time each student was alone. In this setting, where there was no social constraint on expression, the facial expressions of the Japanese and Americans were nearly identical. Part of the time the student watched the films while being interviewed by a member of his own culture. Now, in a social situation, cultural-display rules operated to mask the facial expressions of the Japanese. The Japanese looked much more polite and constrained, showing less negative feeling than did the Americans.

The third way in which culture influences facial expression is by teaching people what to do *after* they have shown a particular emotion; therefore, a facial expression may be predictive of different behavior in different cultures. If you see an angry-looking expression on a man's face, does that tell you what he is going to *do*? Maybe. It would be a safe bet that he might be more likely to fight than flee; but unless you want to gamble, you need to know his culture and its rules for that emotion

when experienced by a person in his social niche. He might not just opt for fight or flight, he might turn the anger on himself, or laugh it off, or deny it. What we do about each emotion depends upon what we have been taught to do in each type of social situation.

Having developed this theory, which could reconcile the previously contradictory viewpoints about facial expression, we set out to prove whether it was right or wrong. From 1966 to 1970 we conducted research in Brazil, Chile, Argentina, the United States, and Japan, and made two trips to New Guinea. In both trips to New Guinea we studied the same people, the South Fore, whose pictures are shown in this book. Because we were not anthropologists and were not able to spend years with these people, we relied heavily upon the help of those who had: Carleton Gajdusek and E. Richard Sorenson, and Neville Hoffman, an Australian who had been a public-health doctor in that area. The brief description of the South Fore which follows is based on the writings of Gajdusek and Sorenson.

The South Fore live on the edge of a mountain range at an elevation of about 7,000 feet. They were not influenced by the outside world until the mid-1950s, when Australian government expeditions brought in metal, cloth, and other products of outside technology. The South Fore were a culturally and linguistically separate group of people. Their society entailed a permissive style of child rearing and generally egalitarian social relations without chiefs, medicine men, or patriarchs. The hamlet was the important social unit; subsistence gardening was the basic activity. Western culture changed the South Fore with the introduction of roads, trading posts, missionaries, schools, and the rest. Some hamlets remained traditional in their way of life; others were completely changed and modernized.

In 1967, when I made my first trip, it was still possible to find South Fore people living in the traditional way, who had minimal contact with the outside world. Those we studied had never been to the Australian district center; they had never worked for Australians or other Caucasians; they still dressed in traditional clothes; and they neither spoke nor understood English or pidgin. To the best of our knowledge, they had never seen photographs, magazines, or motion pictures. In 1968 we again studied such people, but they were harder to find.

We carried out two types of experiments. In one study we determined whether a face which was angry (or sad, afraid, and so on) to us would be considered by them to be showing the same emotion. Our first step was to show the New Guineans photographs of facial expressions which had been judged to represent each of the different emotions by people in Western and Eastern literate cultures. We asked the New Guineans to make up a story about each face, describing what was happening now, what had happened before, and what would happen afterward. Although this was a difficult task for these people and language translations were awkward, this part of the research revealed the

most common themes or plots for each emotion. A year later we utilized these plots to allow the New Guineans to judge emotion without having to use words. A translator would read one of the plots and show photographs of three different facial expressions. The New Guinean would then point to the person described in the plot. For example, we would lay out three faces, one judged in Western cultures as "sad," another "angry," and another "fearful." The translator would say to the New Guinean, "Show me the person whose child has died." If facial expressions were not universal, the New Guinean might well choose the "angry" or the "fearful" face. Instead, in this instance, and in almost all other tests we made, he picked the face which had the same emotional meaning as it does in all other cultures. In the second type of experiment we reversed matters, asking the New Guinean to show us how his face would appear if, for example, he was angry enough to fight, happy that friends have come, and so forth. Later, when we analyzed the videotapes and photographs of our respondents' faces, we found that they moved the same facial muscles as do people in other cultures when feeling or trying to simulate these emotions.

The only remaining doubt was that perhaps we had come too late, and these members of the South Fore had already been touched enough by the outside to have learned Western facial expressions. It seemed very unlikely, given the precautions we had taken—studying only those who spoke no pidgin and had never worked for a Caucasian or experienced Western culture in the media. But the real resolution of our doubt came a few years later. Karl Heider and Eleanor Rousch Heider conducted the same study in another area of New Guinea, with the Grand Valley Dani. These people had had much less contact with the outside world than the South Fore. The results were the same, as described in chapter 4 under the heading "Ekman and Friesen: Preliterate-Culture Study."

Attempts to Demonstrate Universality

I turn now to the recent judgment studies conducted in literate cultures by my own research team and by Izard. My team and Izard's worked independently, conducting research at the same time but unaware of each other's work until very near the end of the studies. Both were influenced by Silvan Tomkins's theories of facial expression (see chap. 2). Both made some methodological improvements over the previous studies: many different persons' facial expressions were included, many cultures were compared, and the facial expressions were screened in advance to eliminate blends of nonaffect faces. While, as we shall see, the evidence is consistent and strongly suggestive of universal facial expressions, it too is inconclusive, because visually isolated cultures were not studied. This problem was finally met by a set of judgment studies, conducted by our own research group and replicated by an independent research team, on the judgment of facial expressions among visually isolated, preliterate peoples in New Guinea.

Ekman and Friesen: Literate-Cultures Study

We (Ekman, 1968, 1972; Ekman, Sorenson, and Friesen, 1969) conducted an experiment in which photographs of facial expression were shown to

college students in five literate cultures crossing four language groups: Japan, the United States, Brazil, Chile, and Argentina. In designing our research we thought the crucial question was how to select the faces to be shown.

We rejected the selection procedures of past investigators. We thought a collection comprised simply of an actor's poses (as were Triandis and Lambert's, and Dickey and Knower's) or of spontaneous facial expressions (as were Winkelmayr's et al. and Vinacke's) would be likely to include many blends of emotional expression. This expectation was based on our theory (Ekman and Friesen, 1967, 1969a, 1969b) that blend expressions occur more frequently than single-emotion expressions, whether a person poses or shows emotions spontaneously, and that the interpretation of blends may vary with culture. Another procedure for selecting photographs, used by Izard, is to present to people in other cultures only those faces which observers in the United States have clearly agreed upon. We rejected this procedure because of the possibility that the collection might still include blends, and if so, that observers in one culture might respond more to one of the emotions in the blend, while observers in another culture might pay more attention or give more weight to the other. The other reason for not selecting pictures on the basis of judgments made within a single culture is that such a procedure might allow the inclusion of emblematic expressions interpretable within one culture, but not within another. It was important to utilize a selection procedure which would include only emotional expressions or good simulated expressions and exclude blends and emblematic expressions.

The novel element in the selection procedure we adopted was that we looked at facial expressions and based our selection on our theory of the facial-muscular movements associated with each emotion. Although we did not publish this theory until some years later (Ekman, Friesen, and Tomkins, 1971), at the time we had already developed a complete theoretical description of the universal facial appearance of each primary emotion.

We examined over 3,000 still photographs, checking each one to see if it contained all of the muscular movements and wrinkles which we postulated as showing a particular emotion. The photographs included almost all those which had been used in studies of the face from 1930 to 1966, the time at which we made our selection (Engen, Levy, and Schlosberg, 1957;¹⁰ Frois-Wittmann, 1930; Tomkins and McCarter, 1964), as well as our photographs of mental patients (Ekman and Friesen, 1968). These were both posed and spontaneous facial expressions, of adults and of children. To determine what emotion, if any, each expressed we did not consider the poser's intent (if it was a posed expression) nor the circumstance (if it was a spontaneous expression), nor what observers had previously judged the picture to show. Instead we compared each photograph with a description of the muscular

movements we hypothesized as relevant to each emotion. We found many photographs of happiness, sadness, disgust, and anger, but only a few of surprise and fear; most of those pictures showed fear-surprise blends. Our selection yielded thirty pictures of fourteen different persons, with pictures for each of six emotions.

We chose to study the six emotions (happiness, sadness, anger, fear, surprise, and disgust) which had been previously found by all investigators who sought to determine what emotions can be judged from the face (Frijda, 1968; Osgood, 1966; Plutchik, 1962; Tomkins and McCarter, 1964; Woodworth, 1938; as reanalyzed by Ekman, Friesen, and Ellsworth, 1972, chap. 13). The logic of our experiment did not require any final decision on our part as to whether there are six or four or nine universal expressions of emotion. Our purpose was to show that for more than the simple distinction between happiness and unhappiness, there are the same facial expressions for the same emotions, regardless of culture. In every culture we studied, the observers were given the words for these emotions in their own language and were required to choose one word for each picture (the only exception was that for disgust, both the words "contempt" and "disgust" were used).

If facial expressions of emotion are entirely specific to each culture, or if our theory as to the appearance of the face for each emotion was wrong, then these faces would be judged as showing different emotions by people from the different cultures. The results, shown in Table 1, provided strong evidence in support of universal facial expressions. The table shows that the expressions interpreted as conveying a particular emotion by the majority of observers in one culture were interpreted the same way by the majority of observers in other cultures.¹¹ The table also shows a very high level of agreement within each culture. Figure 5 shows some of the faces included in this study, and how these faces were judged in each of the five cultures.

In this experiment we were concerned with a second question, namely whether the judgment of the intensity of emotion varies with cultures. We reasoned that, while the type of emotion is universally evident (whether fear, anger, disgust, and so on), judgments of intensity could vary with culture (whether the emotion is slight, moderate, or extreme). Such variations might be expected if cultures differ in the customary level of overt emotional expression. For example, if the stereotype is accurate that in Latin cultures there is less constraint in showing emotion than in the United States, then what appears as extreme emotion to Americans might be seen as moderate to Latins. To check this possibility, we asked observers in four of the cultures (all but Japan) to rate each facial expression on a seven-point intensity scale (slight to extreme). We found no significant differences in the intensity ratings from one culture to another (see note 11). Instead, the intensity ratings were almost identical across cultures. The correlations between the United States and the Latin cultures were close to perfect: .93 for

Table 1 *Judgments of Emotion by Observers in Five Literate Cultures (Ekman and Friesen, 1971b)*

	Japan	Brazil	Chile	Argentina	United States
Happiness	87 ^a	97	90	94	97
Fear	71	77	78	68	88
Surprise	87	82	88	93	91
Anger	63	82	76	72	69
Disgust/Contempt	82	86	85	79	82
Sadness	74	82	90	85	73
Number of observers	29	40	119	168	99

^aPercentage of observers identifying a set of photographs selected by Ekman and Friesen to represent a particular emotion, as showing that emotion.

Chile-United States, .96 for Brazil-United States and for Argentina-United States.¹² Among South American countries the correlations were equally high.

Izard: Literate-Culture Study

Izard's (1968, 1971) experiment on the judgment of emotion across cultures was almost identical with ours, except that he selected his faces by showing pictures to American observers and used only those pictures which elicited high agreement. He utilized posed facial expressions of adult males and females showing what had been judged within the United States as interest-excitement, enjoyment-joy, surprise-startle, distress-anguish, disgust-contempt, anger-rage, shame-humiliation, fear-terror. This list of eight emotions was based on Tomkins's (1962) theory of primary affects. In each culture college students were given the list of eight pairs of emotion-words, each pair containing a word in their own language for a low- and a high-intensity version of the emotion, and were requested to select the word pair which best described the facial expression. Table 2 shows that in all nine literate cultures the emotion judged by the majority in one culture was almost always the same in the others—quite strong evidence that facial expressions are interpreted similarly, regardless of culture or language.

The table also shows that for the African observers and for the Japanese observers a significantly lower percentage of agreement was found than for the other cultural groups. These differences were probably due to problems within the experiment rather than to any cultural difference. The Africans were the only group who were not tested in their native country and in their native tongue. They were citizens of many different African nations, speaking many different languages, studying in Paris, where they judged the faces in French. The lower

percentage of agreement among the Japanese observers may also have been due to a language problem. Our own Japanese translators considered some of Izard's Japanese translations of the emotion-words to be awkward and dated, and when we utilized Izard's own photographs with our Japanese translations, the agreement among Japanese observers was much higher than that obtained by Izard.

Regardless of whether the lower agreement among the Japanese and the Africans is considered to be of import, Izard's main finding is positive and is consistent with ours. Across literate cultures facial expressions convey the same emotion; if a face is judged by most people within one culture as anger, it will be judged by most people within any other literate culture as anger, and so on for the other emotions studied by Izard and by ourselves.

As we have repeatedly mentioned, one loophole remains—visual contact. While wishing to interpret our results as conclusive evidence that facial expressions are universal, we, like Izard, recognized that our findings might be limited to showing that among peoples who share visual contact, facial expressions are common, but among peoples who have not had the chance to view mass-media portrayals of facial expressions of emotion, facial expression might vary considerably. While this seemed improbable, the argument was made, presumably with some seriousness, by one of the advocates of the view that there are no universal facial expressions of emotion: Birdwhistell.¹³ The only way to establish conclusively the existence of universal facial expressions of emotion was to show that visually isolated people interpret facial expressions in the same way as people from literate cultures. This would establish that exposure to a common source is not responsible for common facial expressions, and Darwin must have been correct in claiming that facial expressions of emotion are universal to man.

Ekman and Friesen: Preliterate-Culture Study

Four experiments were conducted. In our first study, conducted in 1967 (Ekman, Sorenson, and Friesen, 1969), we showed photographs of facial expressions to people in two preliterate cultures in Borneo and New Guinea. We encountered difficulty with the judgment procedure, in which an observer is shown a photograph and asked to choose an emotion-word or category from a list. These people could not read any language, and asking them to remember a list of emotion-words repeatedly read to them after each photograph seemed awkward, tiresome, and by no means easy for the subject. Further, there was some question as to whether we really knew the languages of these people well enough to convey an emotion with a single word in their language.

Our results, while similar to those found for literate cultures, were much weaker; agreement among members of these preliterate cultures was low on most emotions and totally absent on some. Was this because of the difficulty with the judgment procedure? Or was it because, hav-







	United States	Brazil	Chile	Argentina	Japan
	97 Happiness	95 Happiness	95 Happiness	98 Happiness	100 Happiness
	92 Disgust	97 Disgust	92 Disgust	92 Disgust	90 Disgust
	95 Surprise	87 Surprise	93 Surprise	95 Surprise	100 Surprise
	84 Sadness	59 Sadness	88 Sadness	78 Sadness	62 Sadness
	67 Anger	90 Anger	94 Anger	90 Anger	90 Anger
	85 Fear	67 Fear	68 Fear	54 Fear	66 Fear

Figure 5 Percentage agreement in how photographs were judged across cultures

ing finally studied visually isolated cultures, we had now encountered fundamental cultural differences in facial expressions of emotion? It became crucial to settle this question, particularly since in another decade there will be few people left who remain visually isolated from literate cultures. This was one of the last chances to utilize the study of visually isolated people to settle the question first raised by Darwin.

Convinced that defects in the judgment task were responsible for our weak results, we returned to New Guinea a year later with a judgment task we thought would overcome the problems experienced the previous year. The procedure was based on a task first used by Dashiell (1927) for his studies of the ability of young children to judge facial expression. Instead of a single photograph of a face and instructions to select an emotion-word, the observer was given either two or three photographs and asked to select the face which fit an emotion-story. Simple stories, likely to connote only one emotion (not a blend), were developed on the basis of the first study of these New Guinea people. Figure 6 shows one of the sets of three pictures and the three different stories which were used with them.

In this second experiment we (Ekman and Friesen, 1971a) worked only with people in New Guinea, not in Borneo. The subjects were from the Fore linguistic-cultural group of the South East Highlands of New Guinea. Until fourteen years ago this was an isolated, Neolithic material culture. By the time of the second study many of these people had had extensive contact with missionaries, government workers, traders, and American scientists; but some had not. We were most interested, of course, in the latter persons. Subjects who were selected for the experiment met criteria intended to assure, as much as possible, that they were not influenced by exposure to other cultures. They had seen no motion pictures, neither spoke nor understood English or pidgin, had not lived in any of the Western Settlement or government towns, and

Table 2 *Judgments of Emotion in Nine Literate Cultures (Izard, 1971)*

	United States	England	Germany	Sweden	France	Switzerland	Greece	Japan	Africa
Interest-excitement	84 ^a	79	82	83	77	77	66	71	52
Enjoyment-joy	97	96	98	96	94	97	93	94	68
Surprise-startle	90	81	85	81	84	85	80	79	49
Distress-anguish	74	74	67	71	70	70	54	67	32
Disgust-contempt	83	84	73	88	78	78	87	56	55
Anger-rage	89	81	83	82	91	92	80	57	51
Shame-humiliation	73	59	72	76	77	70	71	41	43
Fear-terror	76	67	84	89	83	67	68	58	49
Number of observers	89	62	158	41	67	36	50	60	29

^aSee note to Table 1.



Figure 6 In presenting this task to a particular person, all three photographs would be shown. Only one of the stories would be read and the person would be asked to select the photograph which fits the story.

Fear—She is sitting in her house all alone and there is no one else in the village; and there is no knife, ax, or bow and arrow in the house. A wild pig is standing in the door of the house and the woman is looking at the pig and is very afraid of it. The pig has been standing in the doorway for a few minutes and the person is looking at it very afraid and the pig won't move away from the door and she is afraid the pig will bite her.

Happy—Her friends have come and she is happy.

Anger—She is angry and is about to fight.

had never worked for a Caucasian. The judgment task was administered individually with three photographs for each emotion story to 189 male and female adults, and with two photographs for each story to 130 male and female children.

Table 3 shows how often the observers chose the facial expression for a particular emotion which members of literate cultures had chosen. For example, in the first row, the figure of 92 percent for the adults signifies that when the Fore adults were read a happiness story ("His friends have come and he is happy") and were shown a facial expression previously judged by persons in literate cultures as happy, with two others judged as surprise, anger, sadness, or disgust, 92 percent of their choices were of the happiness face. For anger, happiness, sadness, disgust, and surprise (except in relation to fear), the faces chosen for the emotion are the same as in literate cultures. The Fore failed to distinguish fear from surprise, perhaps because in this culture fearful events are usually also surprising. Even so, these results strongly support the contention that there are universal facial expressions of emotions.

In the third experiment, we (Ekman, 1972; Ekman and Friesen, 1971a) asked other members of this New Guinea culture, who had not been in the prior experiment, to show how their own faces would look if they were the person in an emotion-story. Unedited videotapes of nine of these New Guineans were shown to a group of college students in the United States. These American college students, who had never seen New Guineans, had little trouble accurately judging the emotion in-

tended by the New Guineans for anger, disgust, happiness, and sadness. The fear pose was often judged as surprise, and vice versa (as happened when the Fore themselves attempted this discrimination in judging Caucasian facial expressions). Figure 7 shows some examples of the New Guineans' posed facial expressions.

In discussing the findings of our second and third studies, we wrote:

The only way to dismiss the evidence for both the judgment and posing studies would be to claim that even those New Guineans who had not seen movies, who did not speak or understand English or pidgin, who had never worked for a Caucasian, still had some contact with Westerners, sufficient contact for them to learn to recognize and simulate culture-specific, uniquely Western facial behaviors associated with each emotion. While these subjects had some contact with Westerners, this argument seems implausible for three reasons. First, the criteria for selecting these subjects make it highly improbable that they had learned a "foreign" set of facial behaviors to such a degree that they could not only recognize them, but also display them as well as those to whom the behaviors were native. Second, contact with Caucasians did not seem to have much influence on the judgment of emotion since the most Westernized subjects [we had also studied subjects who had been to mission school and read and spoke English] did no better than the least Westernized and, like the latter, failed to distinguish fear from surprise. Third, the women, who commonly have even less contact with Westerners than the men, did as well in recognizing emotions. [1971a, p. 128]

The best way to dispel any lingering doubts, of course, would be to repeat the experiment with another visually isolated group of people,

Table 3 *Judgments of Emotion by Observers in a Preliterate Culture, the Fore of New Guinea (Ekman and Friesen, 1971a)*

Emotion Described	Percent choosing the emotion expected who agree with judgments by members of literate cultures	
	Adults	Children ^a
Happiness	92	92
Sadness	79	81
Anger	84	90
Disgust	81	85
Surprise	68	98
Fear resulting from anger, disgust, or sadness	80	93
Fear resulting from surprise	43	^b
Number of observers	189	130

^aThe higher figures for the children probably reflect the fact that they were asked to choose from a pair of photographs rather than sets of three.

^bThrough an oversight this discrimination was not tried with the children.



Figure 7 Video frames of attempts to pose emotion by subjects from the Fore of New Guinea. The instructions for the top left photograph was "your friend has come and you are happy"; for the top right "your child has died"; for the bottom left "you are angry and about to fight"; and for the bottom right "you see a dead pig that has been lying there for a long time." Copyright © 1972 by Paul Ekman.

preferably a group who had even less contact with literate cultures. Just this was done by investigators who were not committed to the notion that there are universals in facial expression. This made the replication especially useful, since a scientist may unwittingly bias his own results. In a judgment experiment the investigator might, for example, unwittingly give clues to the subject to indicate the right response. We had taken a number of precautions to prevent such biasing, but the best assurance is to have other investigators who do not hold the same hypothesis repeat the study.

Karl and Eleanor Heider, an anthropologist and a psychologist, were skeptical of our claim that at least some facial expressions of emotion are universal. At the time we met, Karl had already worked with the Grand Valley Dani. These people live in the Central Highlands

of New Guinea and speak a Papuan language which perhaps is remotely related to the language of the Fore. They live some 500 miles to the west of the Fore, in West Irian, the Indonesian half of New Guinea. Only during the 1960s did they give up stone axes and intertribal warfare. Karl and Eleanor Heider were doubtful that the Dani people would judge facial expressions of emotion in the same way as do members of other cultures, particularly in view of the fact that the Dani do not have words for all six emotions studied.

The Heiders spent a few months working with us learning our methods of studying facial expression within a preliterate culture. They returned to New Guinea in 1970 and conducted an experiment with the Grand Valley Dani which was almost identical to ours with the Fore. Their results (reported in Ekman, 1972) were very similar, again showing that a preliterate, visually isolated people interpret almost all of the basic facial expressions of emotion in the same way as do members of literate cultures.

Ekman and Friesen: Study of Spontaneous Expression

Before considering this last set of experiments, let me discuss the differences between posed and spontaneous facial expression. While a few investigators did use photographs of spontaneous facial expression and did find evidence of universals (Vinacke, 1949; Winkelmayer et al., 1971), most used photographs of posed faces. Does this invalidate or limit the finding of universals? Landis (1924) and later Hunt (1941) argued that posed facial expressions are a conventional language, socially learned and unrelated to emotion. If they are right, it would be logical to expect, as they did, that poses of facial expression of emotion would be both performed and judged differently across cultures. The fact that posed facial expressions are similarly judged across cultures, and that not only are Western poses understood by New Guineans but New Guinean poses are understood by Westerners, requires either that these supposedly conventional, arbitrary facial expressions are for some inexplicable reason learned the same way in all cultures, or that Landis and Hunt were wrong, that posed facial behavior resembles and grows out of spontaneous facial behavior. Although not designed for that purpose, these cross-cultural studies of the judgment of posed facial behavior provide the logical basis for concluding that posed behavior must resemble spontaneous facial behavior. Ekman, Friesen, and Ellsworth (1972) in reviewing this evidence have suggested,

posed facial behavior is similar to, if perhaps an exaggeration of, those spontaneous facial behaviors which are shown when the display rules to deintensify or mask emotion are not applied. Posed behavior is thus an approximation of the facial behavior which spontaneously occurs when people are making little attempt to manage the facial appearance associated with intense emotion. [p. 167]

Our most recent observations would suggest that the extent of similarity between posed and spontaneous emotional expression depends upon whether the poser attempts an emblematic or simulated expression, and if simulating, whether a slight or extreme expression is attempted.

The following set of experiments should resolve any question about whether the universality of facial expression could be limited to poses, since it utilized spontaneous facial behavior. It was undertaken at the same time as the studies reported here, but the analysis of the results was not completed until quite recently. We had three objectives: (1) to complement our other cross-cultural studies by using spontaneous rather than posed facial behavior; (2) to use a components approach, directly measuring the movements of the face in two different cultures, rather than measuring observers' judgments of emotion, as was done in other studies; (3) to lend credence to our concept of display rules, and our interpretation of the results of those investigators whose studies showed cultural differences. Concerning this third objective, our aim was to substantiate our notion that their results were due to display rules, by showing in this experiment culture-specific facial expressions when we expected display rules to be operable and evidence of similar facial expressions when we did not expect display rules to operate.

We compared the facial behavior of Japanese and American subjects in two social contexts, when alone and when in the presence of another person. We were intrigued by the idea of studying Japanese subjects, because of the popular notion that the Japanese are inscrutable to the Westerner. In our terms this should be due to the operation of display rules, and it would be evident when a Japanese subject was in the presence of others; when he was alone, he could be expected to show the same facial expression for a particular emotion as anyone else. In addition to requiring that one of the situations be such that display rules would operate minimally, our theory also suggested the need to assure that the same emotion was elicited in both Japanese and American subjects, and that consequences which might obscure the expressions be unlikely.

We chose a situation in which a subject sat alone watching stressful and neutral films. Lazarus, Opton, Tomita, and Kodama (1966) had obtained evidence that these stressful films elicit a comparable verbal report of emotional arousal, suggesting that this situation would elicit the same emotion in both cultures. Watching a stressful film is the type of arousal situation which could be expected to produce little in the way of consequential actions to obscure the expressions. There is little an individual can do to cope with the unpleasant emotions; unless he turns away from the screen, his face remains visible; and the movements of the facial muscles are not distorted by speech.

Twenty-five subjects each from Waseda University in Tokyo and from the University of California in Berkeley participated in the study. An investigator from their own culture explained the experiment as a study of physiological response to stress and connected wires for the

measurement of heart rate and galvanic skin response, then left the subject alone in the room. With a concealed camera, videotape records were made of the subject's facial behavior while he watched both neutral and stressful films. An investigator from his own culture then entered the room and interviewed him about his feelings, continuing to interview him while additional stressful films were shown. Two studies were performed, one with the videotapes made while the subject was alone, the other with the videotapes made when the subject was with the interviewer.

Three minutes of each subject's reactions, while alone, to a neutral film and three minutes of reaction to a stressful film were measured with FAST, our Facial Affect Scoring Technique (Ekman, Friesen, and Tomkins, 1971). To arrive at a FAST score, the experimenter isolates each observable movement of the face, examining separately each part of the face which can move independently and measuring the exact duration of each such facial movement. [The reader interested in how the measurement procedure was applied to these records is referred to Ekman (1972).]

The correlations between the facial behavior shown by Japanese and American subjects in relation to the stressful film were extremely high, ranging from .72 to .96 depending upon whether a particular facial area was compared (such as eyes and lids) or the movement of the entire face. Figure 8 shows an example from the videotapes. This experiment, utilizing a components approach to measure directly the movements of the facial muscles, provides strong evidence that there are universal facial expressions of emotion. There were strikingly simi-



Figure 8 Videotape frames of facial behavior scored by FAST as showing disgust; Japanese subject on the left and American subject on the right. Copyright © 1972 by Paul Ekman.

lar facial responses to a stressful film by Japanese and American subjects when they were alone.

In the second study we measured the facial behavior shown when each subject, in the presence of another person from his own culture, answered questions about his feelings as he watched more stressful films. Here we expected from our theory about display rules that the Japanese more than the Americans would mask negative emotions with polite smiles. We found such a difference between cultures. The Japanese showed more positive emotions than the Americans and fewer negative emotions (Friesen, 1972).

Thus in this one experiment with the same two groups of subjects we found evidence both of universal facial expressions and culture-specific differences in facial expression. When the subjects were alone we found the same facial expressions in response to a stressful film for Japanese as for American subjects. There was also evidence that display rules can produce an overlay of cultural differences. In the presence of another person the Japanese subjects (presumably masking negative facial expressions) showed more positive facial behavior than did the Americans.

This experiment achieved the three objectives given above. Universal facial expressions were found when we measured spontaneous behavior, adding evidence consistent to that found in the previous studies of posed behavior. Universal facial expressions were found by direct measurement of facial behavior, rather than by measuring observers' judgments of facial expression.¹⁴ The utility of our concept of display rules was demonstrated, for, in an experimental context where we predicted cultural difference due to attempts to mask facial expression, that is exactly what was found.

Conclusion

The evidence is remarkably consistent from all of the experiments we have reviewed:

From experiments conducted by investigators primarily interested in culture-specific facial expressions, or committed to the theory that there are no universal facial expressions, as well as from experiments by those who sought to prove universals in facial expression

From experiments which used a judgment approach as well as from the one study which actually measured the components of facial behavior

From experiments which dealt with spontaneous facial behavior as well as from those which dealt with posed facial behavior.

Comparable results were found in studies conducted in thirteen literate cultures, in many of which subjects were studied by more than

one investigator: African nations, Argentina, Brazil, Chile, England (two investigations), France, Germany, Greece (two investigations), Hawaii, Japan (four investigations), Sweden, Turkey, the United States (seven investigations); and in two visually isolated, preliterate cultures: the Fore of New Guinea and the Grand Valley Dani of West Irian (New Guinea).

The same facial expressions are associated with the same emotions, regardless of culture or language. One hundred years after Darwin wrote his book on emotional expression, a conclusion is possible. There are some facial expressions of emotion which are universally characteristic of the human species. This evidence raises two questions about the origins of these universal facial expressions. How does it happen that muscular movements of the face are the same for all people, regardless of culture? Why does a particular muscular movement of the face come to be associated with a particular emotion? (For example, why do we not press our lips tightly together when happy and curve the corners up when angry, rather than the reverse?) Evidence of universality cannot answer these questions, but it does increase the likelihood of certain answers.

Darwin thought the answer to the first question was that facial expression is innately determined. In Chapter 2 I pointed out that universal facial expression could alternatively arise from species-constant learning experiences and explained my own view that some universal expressions may be so derived, but that some must be genetically determined. The question awaits further research for a final answer.

Darwin thought the second question could be answered by looking at the evolution of facial expression, the similarities between man's expressions and those of other primates. He suggested three explanatory principles, which other authors (Charlesworth and Kreutzer, 1973; Petrinovich, 1973) have described in detail. We refer the reader to Chevalier-Skolnikoff (1973) and Redican (1980) for an answer to the question of the similarity between human and other primate facial expression.

This chapter establishes a conclusive answer to one of Darwin's questions, and an answer in agreement with Darwin's own conviction. There are some facial expressions of emotion which are universal.

I will close by quoting from my report (Ekman, 1972) of all of our cross-cultural studies, in which I presented what we have called a neuro-cultural theory of facial expression, which attempts to account for both the universal elements (neurally determined) and the culture-specific (learned) elements in facial expression.

We believe, then, that we have isolated and demonstrated the basic set of universal facial expressions of emotion. They are not a language which varies from one place to another; one need not be taught a totally new set of muscular movements and a totally new set of rules for interpreting facial behavior if one travels from one culture to another. While facial ex-

pressions of emotion will often be culture specific because of differences in elicitors, display rules and consequences, there is also a pan-cultural set of facial expressions of emotion. . . . Our findings, supported by those of others, now provide the basis for settling the old dispute as to whether facial expressions are completely specific to each culture or totally universal. Our neuro-cultural theory maintains there are both universal and culture specific expressions. The evidence now proves the existence of universal facial expressions. These findings require the postulation of some mechanism to explain why the same facial behavior is associated with the same emotion for all peoples. Why are observers in all these cultures familiar with a particular set of facial expressions (a set which is only a fraction of the anatomically possible facial muscular configurations)? But they are not merely familiar with these facial expressions. Regardless of the language, of whether the culture is Western or Eastern, industrialized or preliterate, these facial expressions are labeled with the same emotion terms: happiness, sadness, anger, fear, disgust and surprise. And, it is not simply the recognition of emotion that is universal, but the expression of emotion as well. How do we explain that the same facial muscular movements occur in Japanese and Americans in response to a stress film, or that the same facial muscular movements occur whether a New Guinean or an American is asked to show what his face would look like if his child had died, or if he were angry and about to fight, etc.?

We must abandon the notion that facial expressions are a language, where arbitrary facial muscular movements have a different meaning in each culture; but we must also attempt to explain the basis for the demonstrated pancultural facial expressions of emotion. Our neuro-cultural theory postulates a facial-affect program, located within the nervous system of all human beings, linking particular facial-muscular movements with particular emotions. It offers alternative nonexclusive explanations of the possible origin of the linkages in the affect program between the felt emotion and the movement of the facial muscles. Our theory holds that the elicitors, the particular events which activate the affect program, are in largest part socially learned and culturally variable, and that many of the consequences of an aroused emotion also are culturally variable, but that the facial-muscular movement which will occur for a particular emotion (if not interfered with by display rules) is dictated by this affect program and is universal (1972, pp. 277-279).