State of the art: Nonverbal communication

PETER BULL *on how our bodies can speak volumes.*

BELIEF in the importance of nonverbal communication is nothing new. 'Not to watch a person's mouth but his fists' was a celebrated aphorism of Martin Luther, the 16th century Protestant reformer. The term *nonverbal communication* was popularised in the 20th century, although it is not always clear exactly what it means. Because the term *nonverbal* only excludes communication through words, the features it may include are virtually limitless. It can refer to communication through touch or smell, through various kinds of artefacts such as masks and clothes. It has also sometimes been used to include vocal features such as intonation, stress, speech rate, accent and loudness, although this is more contentious. In addition, it can refer to different forms of body movement – to facial expression, gaze, pupil size, posture, gesture and interpersonal distance. It is communication through body movement that forms the focus of this article.

For communication to occur, nonverbal behaviour does not have to be intended as such. A person's intentions may not always be clear; furthermore, nonverbal communication may take place even against the express intentions of the encoder. A member of a lecture audience might well try hard to appear attentive, but still be incapable of suppressing the occasional yawn. To the speaker, the listener may still communicate boredom, despite the best intentions not to do so! Communication can also take place without conscious awareness, in the sense that neither encoder nor decoder can specify the nonverbal cues through which a message is transmitted. People may be left with the feeling that someone was upset or angry without being able to identify exactly what cues were responsible for that impression. Nonverbal communication can also be idiosyncratic. Hand gestures, for example, may take their meaning from their visual resemblance to objects or actions which they seek to depict, or from the way in which they are used in conjunction with speech.

Studying nonverbal communication

The fact that nonverbal communication can be unintentional, unconscious and idiosyncratic makes it a particularly difficult topic to study. Indeed, the scientific study of nonverbal communication only became possible with the development of sophisticated recording apparatus. Most contemporary studies are based on either film or videotape.

The great advantage of video over 'live' observation is that it allows for repeated viewing. This is particularly important for complex sequences of movement that are inaccessible to the naked eye. These can be replayed time and time again, if necessary, in slow motion. There are now sophisticated computer programs available such as THEME (e.g. Magnusson, 1996), whereby an observer can code the onset and offset of selected behavioural categories from a digitised video recording directly into a computer. THEME can then perform sophisticated statistical analyses to identify sequential relationships between different behavioural categories or combinations of categories. These patterns may be hidden from the naked eye, or simply too complex to uncover without this kind of technical assistance.

The major disadvantage of video is that a human observer still has to transcribe and (if necessary) code the behaviour into appropriate categories. As an alternative, researchers are seeking to develop fully automated systems of measurement. Typically, such systems have involved attaching recording apparatus to the body (e.g. Harling & Edwards, 1997); this has the disadvantage that participants may become self-conscious, while their movements may also be restricted. But breakthroughs in computer image analysis now hold the promise of fully automated coding without the need for any such attachments. One study demonstrated that six facial actions could be coded from

video image analysis with 91 per cent accuracy, which is as good as expert human coders and significantly better than non-experts (Bartlett *et al*., 1999). Completely automated systems should not only dramatically increase the speed of coding, they should also improve reliability and precision. As such, facial expression measurement would become much more widely accessible as a research tool in behavioural science, medicine and psychophysiology.

Functions of nonverbal communication

There is now a substantive research literature on nonverbal communication, extending back over several decades. In this tradition, nonverbal behaviour is typically contrasted with speech, its forte the communication of emotion and interpersonal relationships. But there is another viewpoint. Given the close interconnectedness of nonverbal behaviour and speech, their separation would appear to be highly artificial; in particular, hand and facial gestures may be seen as visible acts of meaning, and arguably should be treated as part of natural language (Bavelas & Chovil, 2000). This more recent perspective differs markedly from the popular notion of 'body language' as an alternative to speech. These contrasting approaches to nonverbal communication are discussed below.

Emotion The most influential contemporary perspective on the nonverbal communication of emotion is still undoubtedly the neurocultural model of facial expression (Ekman, 1972). According to this model, there are at least six fundamental emotions with innate facial expressions, which can be modified through the learning of what are called 'display rules'. Display rules are norms guiding the expression of emotion in different social contexts, and vary both within and between cultures.

Ekman's model is based on a distinction between two principal types of facial expression: those which are spontaneous, and those under voluntary control. A great deal of neuropsychological evidence is consistent with this proposal. There are cases where a person has suffered paralysis of voluntary facial movement (they may be unable to retract the mouth corners on command), but can still smile spontaneously on the paralysed side if something strikes them as amusing. There are also cases of paralysis of spontaneous facial expression, where the person still retains the ability to exercise voluntary control over facial movements (Rinn, 1991).

The neurocultural model is also supported by extensive cross-cultural evidence, based on experiments in which observers are asked to identify emotion categories from photographed facial expressions. At least six emotions (happiness, sadness, anger, fear, disgust, surprise) have been shown to be decoded in the same way by members of both literate and pre-literate cultures (e.g. Ekman *et al*., 1972); there is also possibly a seventh universal emotion, that of contempt (Ekman & Friesen, 1986).

Widely accepted for about 20 years, the neurocultural model has been seriously called into question in the last decade. For example, the language used to describe emotion is by no means universal: neither the words for so-called basic emotions such as anger and sadness, nor even the word for emotion itself is found in every culture (Russell, 1991). Furthermore, forced-choice experiments that oblige people to identify facial expressions from only six or seven emotion categories may well overestimate universality by producing an artificially high level of agreement (Russell, 1991).

One way of addressing criticisms of the forced-choice methodology is to give raters an additional option to the effect that 'none of these terms are correct'. Even with this option, participants were still found to select Ekman's six emotion categories at a level significantly above chance (Frank & Stennett, 2001). Moreover, when raters were given this option together with additional emotion labels (alarmed, bored, contempt and excited), they still tended to select the six emotion categories.

The whole theoretical basis of the neurocultural model has also been called into question. According to what has been called a 'behavioural ecology' approach, there are neither fundamental emotions nor fundamental expressions of them; there are simply behaviours that manifest social intent and are dependent upon social context (Fridlund, 1994, 1997). For example, what in the neurocultural model might be described as a facial expression of anger would in the behavioural ecology approach simply be described as a readiness to attack. From this perspective the whole conceptual structure of the neurocultural model is regarded as no more than an unnecessary encumbrance.

In a comparison of these two approaches an experiment was conducted in which Canadian, Chinese and Japanese observers were shown photographs of Ekman and Friesen's seven universal emotions (Yik & Russell, 1999). Participants rated the facial expressions either in terms of Ekman's emotion categories, or in terms of Fridlund's descriptions of social intent. There was no significant difference in observer agreement between the social intent and emotion category conditions, either across the three cultures, or within each culture. Thus, faces convey social messages with as much consensus as they convey emotional ones. But whichever view one takes – the neurocultural model or that of behavioural ecology – facial movements are still regarded as a highly important form of nonverbal communication of emotion.

Interpersonal relationships Because nonverbal cues are important in emotional communication, they have also been regarded as central to interpersonal relationships. Indeed, when participants in one study were requested to describe their own intimate experiences, they often actually defined intimacy in terms of nonverbal behaviour (Register & Henley, 1992). One individual wrote that 'a touch of the hand…the meeting of our eyes, a kiss, conveyed our intimacy better than a thousand words'.

Nonverbal cues are not only important within a relationship; to an outside observer, they can also provide important signals about relatedness. In one experiment observers judged interpersonal rapport in conversations between unacquainted pairs of students under five

different conditions: from a transcript only, audio only, video only, video plus transcript, or video plus audio (Grahe & Bernieri, 1999). These judgements were correlated with the students' self-ratings of rapport. Correlations were highest in the video-only condition, lowest for the transcript. Thus, nonverbal cues appear to be more important than speech in judgements of rapport. Indeed, when the video was combined with transcript or with sound, the correlations were actually lower than in the video-only condition, although not significantly so.

Observers can also guess the identity of an unseen conversational partner from the nonverbal behaviour of one participant alone. Even very young children can do this; they can accurately identify whether their mother is conversing with a friend or a stranger (Abramovitch, 1977). Adult observers can identify not only the gender of the unseen conversational partner, but also whether the person was a friend or a stranger, and whether the person was of the same age as the other conversationalist (Benjamin & Creider, 1975).

A series of studies has been conducted on nonverbal communication in the context of marriage, with interactions between marital partners video-recorded and coded by trained observers (Gottman, 1994). Facial displays of contempt and disgust in particular can indicate trouble for the relationship. The husband's facial expressions of contempt are a powerful predictor of physical illness reported by the wife four years later. The wife's facial expressions of disgust are highly correlated with the number of months the couple will be separated in the next four years. The break-up of a marriage has been likened by Gottman to a cascade, in which overt displays of contempt play a central role. In this 'cascade model', complaining and criticising lead to contempt, which in turns leads to defensiveness, which leads to withdrawal from the interaction. Gottman refers to these four corrosive marital behaviours as 'The Four Horsemen of the Apocalypse'.

Links with speech Nonverbal communication has sometimes been regarded as a kind of language of emotion and interpersonal relationships. But nonverbal behaviour is also closely related to speech. 'Self synchrony' refers to a process whereby the body of a speaker moves closely in time with speech (Condon & Ogston, 1966). Self synchrony is not simply confined to hand gestures; movements of all parts of the body are closely synchronised with speech, particularly in terms of vocal stress. Spoken English is produced in groups of words, typically averaging about five in length, where there is one primary vocal stress, conveyed principally through changes in pitch, also through changes in loudness or rhythm (Halliday, 1970). In one study of student conversations it was found that over 90 per cent of primary stresses were accompanied by some kind of closely synchronised body movement (Bull & Connelly, 1985).

Such synchronised body movements may have a variety of meanings. Head movements, for example, can signal a great deal more than just 'yes' or 'no'. Vigorous head-shakes may accompany emphatic words such as 'a lot', 'great', or 'really'. A wide sweep of the head may be used to indicate inclusiveness accompanying such words as 'everyone' or 'everything'. When a person starts to quote directly from someone else's speech, a shift in head orientation may slightly precede or directly accompany the quotation (McClave, 2000). Such nonverbal behaviour can be seen as integral to the spoken message. Indeed, words and gestures can work together to create a sentence, a phenomenon sometimes referred to as 'mixed syntax' (Slama-Cazacu, 1976).

'words and gestures can work together to create a sentence'

Particular advantages of nonverbal communication

As a visual mode of communication, body movement has very different properties from those of speech. Consequently it is particularly suitable for a different range of communication tasks (Kendon, 1985). It is often easier or quicker, for example, to point to an object than to describe it in words. Some gestures are like representative pictures in that they attempt to represent the visual appearance of an object, spatial relationship, or bodily action. Because body movement is visual, it is also a silent means of communication. It may be employed when it is difficult or impossible to use speech. For example, in multiparty conversations, gesture may be employed by people who are not actually talking as a means of commenting on an interaction, without interrupting the flow of the speaker. This may be done co-operatively or critically, so that the commentator does not have to take a speaking turn (Kendon, 1985).

An additional advantage of body movement is that it can be used without the kind of mutual obligation or ritual conduct that seems to be required by conversation. Consequently it may sometimes be quicker to make a passing comment through gesture rather than words. It may also be used in situations where the speaker seeks to be less fully bound or committed to what he or she has to say. It may sometimes be adopted as a substitute for speech, where actually to formulate a thought in words might be regarded as too explicit or indelicate (Kendon, 1985).

Body movement by its very nature is a physical activity, giving it certain advantages in communication. The appearance of behaviour can never be as adequately described in words as it can be represented through movement. Thus, gesture may be of particular importance in mimicry or in demonstrating how particular skills should be performed. Because gestures can be reminiscent of physical actions, they may acquire additional forcefulness as a consequence: a clenched fist may convey anger more effectively than a torrent of words. This may give gesture special importance in communicating emotions and interpersonal attitudes.

Not only is body movement a visual form of communication, it can also be highly visible. One study of a birthday party showed how people used hand gesture as an initial salutation to capture one another's attention before entering into conversation (Kendon & Ferber, 1973). Another study of medical consultations showed how patients used flamboyant gestures to attract the doctor's attention away from his medical notes (Heath, 1986). In this context gesture has the additional advantage of indirectness as well as visibility; a direct verbal request for attention might be seen as some sort of challenge to the doctor's authority.

By emphasising the distinctive properties of body movement, it is possible to acquire a fuller understanding of its distinctive role in communication. Body movement is arguably as fundamental as speech for the representation of meaning (Kendon, 1985). The use of hand gesture has been shown to develop simultaneously with speech in children, and to dissolve together with speech in aphasia (McNeill, 1985). Speech and gesture can be seen to interact in creating meaning: not only does

a gesture clarify the meaning of the speech, speech can also clarify the meaning of the gesture (Kelly *et al.*, 1999). In short, body movement may be seen not just as an alternative to speech, but as an additional resource, as part of a multichannel system of communication, giving the skilled speaker further options through which to convey meaning.

Practical applications

There is no doubt that nonverbal communication research does have considerable practical significance. Of enormous influence has been the proposal that social behaviour can be regarded as a skill (Argyle & Kendon, 1967). As such, it can be taught, learned and improved through what has now become known as communication skills training (CST) (e.g. Hargie, 1997). CST has been used in many different social contexts: for example, employment interviews, therapy with psychiatric patients, intercultural communication, and occupational training with groups such as teachers, doctors, nurses and policemen. CST often includes instruction in nonverbal communication. There are now, for example, tests specifically intended to make objective assessments of social perception (e.g. Costanzo & Archer, 1989), which can also be used as to train people in greater nonverbal perceptiveness (e.g. Costanzo & Archer, 1991).

But the practical significance of studying nonverbal communication goes well beyond such formal training procedures. Even the very act of carrying out research and disseminating results – both through academic publications and the broader spectrum of books, newspapers, radio and television – may be influential. By highlighting the fine details of social interaction, it becomes much easier for people to change their behaviour, if they so desire. In this context, nonverbal communication research can be considered as part of a wider intellectual movement, based on the detailed 'microanalysis' of social interaction through film, audiotape and videotape recordings. From this perspective, communication has now become an object of study in its own right. Its fine details are now no longer necessarily regarded as trivial, irrelevant or unimportant, while terms like *body language* and *communication skills* have also passed into everyday language (Bull, in press).

Conclusions

Awareness of the importance of nonverbal communication goes right back to classical civilisation, whereas its scientific investigation has a relatively short history. According to one research tradition, its particular importance lies in communicating emotion and interpersonal relationships. According to another approach, nonverbal behaviour is so closely synchronised with speech that it should be regarded as part of natural language. From this latter perspective, the study of nonverbal communication should arguably eventually disappear – to be replaced by a message model in which auditory and visual elements of face-to-face communication are treated as an integrated whole.

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