

immediately has the effect of reducing the distance between them until the infant is held and either rocked, patted or stroked. If the child is already in contact with the parent, or if the crying persists after contact is made, then its body is examined for possible sources of pain. The parental response continues until the signal is switched off (and in this respect it differs fundamentally from the smiling and laughing patterns).

The action of crying consists of muscular tension accompanied by a reddening of the head, watering of the eyes, opening of the mouth, pulling back of the lips, exaggerated breathing with intense expirations and, of course, the high-pitched rasping vocalisations. With older infants it also includes running to the parent and clinging.

I have described this pattern in some detail, despite its familiarity, because it is from this that our specialised signals of laughing and smiling have evolved.

When someone says 'they laughed until they cried', he is commenting on this relationship, but in evolutionary terms it is the other way round: we cried until

we laughed. How did this come about? To start with, it is important to realise how similar crying and laughing are, as response patterns. Their moods are so different that we tend to overlook this. Like crying, laughing involves muscular tension, opening of the mouth, pulling back of the lips, and exaggerated breathing with intense expirations. At high intensities it also includes reddening of the face and watering of the eyes. But the vocalisations are less rasping and not so high-pitched. Above all, they are shorter and follow one another more rapidly. It is as though the long wail of the crying infant has become segmented, chopped up into little pieces, and at the same time has grown smoother and lower.

It appears that the laughing reaction evolved out of the crying one, as a secondary signal, in the following way. I said earlier that crying is present at birth, but laughing does not appear until the third or fourth month. Its arrival coincides with the development of paternal recognition. It may be a wise child that knows its own father, but it is a laughing child that knows its own mother. Before it has learnt to identify its