

What About The Children?

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RESEARCH SUMMARY

Familiar Songs Reduce Infant Distress

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Throughout the world, people turn to music when they feel in need of relaxation or comfort. The popularity – and, it must be assumed, the efficacy – of music as an emotional regulator does not seem to depend on nationality, culture or even age; psychologists have recorded its use throughout the world and from toddlerhood to old age.

Babies, however, cannot regulate their own moods or emotions and rely on their care-givers – predominantly their parents – to provide such regulation, particularly when they are distressed. Parents' responses to infant distress strengthen the parent-infant bond and help infants learn to control their own emotions. The commonest strategy that parents employ to soothe distressed infants is to hold or carry them, but vocalisation – speech or singing – is also often used, particularly when it is impossible to pick the infant up.

Most people, including non-parents, will be familiar with 'infant-directed' (ID) speech, which is slower, higher-pitched and more expressive than that used when talking to older children or adults. Infants respond attentively to ID speech and singing, and this attention will often alleviate their distress. Infant-directed singing is generally more effective in attracting attention than ID speech. The songs that are sung to very young children also have characteristics that distinguish them both from other music and from ID speech. They are, typically, regular and repetitive, with different words repeatedly sung to the same tune, and babies are soothed by this repetition.

Recent studies have also suggested that infant-directed singing is more effective than speech in reducing infants' distress as well as in attracting their attention. Furthermore, infants are known to have a surprising ability to remember familiar tunes and to distinguish them from others with the same rhythm. Taken together, this suggests that infants are likely to respond to, and be soothed by, familiar songs more than they are by unfamiliar ones.

Psychologists Laura Cirelli and Sandra Trelub from the University of Toronto, Canada set out to investigate this effect in eight- and ten-month-old infants using a version of the Still Face procedure. This had three steps: firstly, a parent plays with the infant for two minutes; then, the parent adopts a completely unresponsive still face for a minute, stressing the infant; and the third two-minute 'reunion' phase involves the parent soothing the infant by speech or singing. Each parent-infant pair took part in three

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versions of the exercise in which the reunion phase involved, respectively, expressive infant-directed speech; a song that was highly familiar to the infant; and an unfamiliar children's song. These were presented in a random order. A total of 68 parent-infant pairs in each age group took part; the infants were all healthy, with no visual or hearing problems, and had been born at term into middle-class Canadian families. All but four of the parents involved were mothers, and all parents reported that they regularly sang to their babies. Throughout the experiment the babies' behaviour was monitored and their arousal levels estimated from measurements of skin conductance obtained using an electrode attached to the infant's right foot.

The infants were seated in a highchair during the experiment, and simple toys were provided to engage them during the play phase. The toys were removed for the 'still face' which was only begun if the infant was in a calm, happy mood. The reunion phase started after one minute or earlier if the infant was steadily fussing or crying. In this phase, the parents were asked to talk to their infant; sing his or her 'favourite song' or sing an unknown song. They were given a list of songs to help them choose the unknown one, but other choices were allowed. During the 'reunion' they were able to touch the infants but not remove them from the highchair. Each session was videoed and coded according to features such as the time the infants spent looking directly at the parents, smiling, and expressing negative emotions (termed 'negative affect').

A total of 140 parent-infant duos completed the whole procedure. Although the parents selected a wide variety of songs, there was considerable overlap. The most popular 'favourite song' was 'Itsy Bitsy Spider', sung by 18 parents, and the most frequently selected unfamiliar song was 'Row, Row, Row your Boat'. Typically, infants in both age groups became distressed by the still face more quickly as the experiment progressed, so the time they spent in that phase shortened during the experiment, whichever order the 'reunion phase' interventions were presented in.

Statistical analysis of the babies' behaviour during the reunion phase showed that both older and younger infants paid more attention to their parents when they sang familiar songs than during either of the other interventions; this was particularly marked in the 30 seconds immediately after the end of the still face. Talking was the least engaging intervention, and the unfamiliar song fell in between. Similarly, the babies spent most time smiling and showed least negative affect during the familiar song. Interestingly, parents were most likely to touch their infants when they were talking to them, perhaps because they could see that they were less easily soothed.

In general, skin conductance values, which indicate levels of arousal (i.e. the opposite of calming) were higher during the reunion phase for the older infants. In all infants, it was the change in conductance during the reunion phase that differed most with vocal style; interestingly, arousal increased most with talking, some with the familiar song and hardly at all with the unfamiliar song. However, as conductance only measures arousal and does not distinguish between positive and negative moods, these readings have to be combined with an assessment of the infants' behaviour. One plausible way of interpreting these results is to say that the familiar songs were most

effective in changing the infants' state from high arousal and negative affect (distress) to high arousal and positive affect (recognition and excitement).

Taken together, these results show that songs, and particularly familiar songs, are more effective at reducing infant distress than speech, even speech in the cadences most often employed when talking to infants. Speech was also less effective than song in capturing the infants' attention after a still face episode. Previous work has shown that contented infants are as engaged by their care-givers' ID speech than by song, so song seems to be particularly effective at calming distress. Interestingly, most parents chose playsongs, rather than lullabies, as their infants' favourites, and it is at least possible that the infants would have been less aroused by the tempo of lullabies.

Cirelli and Trelub suggest that a parent's singing of a familiar and loved song after an unfamiliar and perhaps frightening still face episode reinstates caregiving behaviour that the infant values and finds highly familiar, and that it might trigger memories of previous occasions when the song was heard. There does appear to be a strong and life-long link between music and memory, but it has been difficult to spot in babyhood. Few differences could be observed between the eight- and ten-month-old infants apart from generally stronger reactions in the older age group. This suggests that familiar songs provide an effective tool for promoting emotional regulation in infants at least as young as eight months. Singing to infants strengthens the parent-infant bond and can be promoted as a tool for relationship building.

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