

Para-language songs as alternative musical stimuli for devices and playthings to enhance caregiver interaction with babies and toddlers and

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ABSTRACT

Background

Musical communications and interactions are important to child development (Longhi, 2009). Although modern day technology and the popularity of concepts such as the ‘Mozart Effect’ have caused social modifications and amplified the frequency of musical engagement for parents and children, in many cases music-based electronic devices are used to replace human musical interactions (Crncec, Wilson, & Prior, 2006; Levine & Rosenquest, 2001). For example, crib-side mobiles are often heard instead of mothers’ singing lullabies. In addition, there are many popular devices renowned as appropriate for babies (i.e., branded as supporting child development) in which the musical stimuli are instrumental music (both classical themes or popular folk tunes) that do not encourage verbal reproduction or human interactions (Custodero, Britto & Brooks-Gunn, 2003; Custodero & Johnson-Green, 2008).

Aims

There were two stages in the study. First we developed an alternative musical stimuli based on Para-language sounds for caregiver interactions, as well as for devices and playthings that can engage babies and toddlers more appropriately. Then, we explored the concurrent validity of Para-language versus other commercial available musical stimuli employed by parents of babies and toddlers

Method

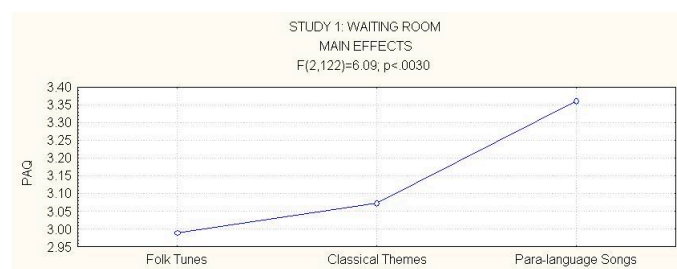
[A] Two *Para-language Songs* were composed and recorded in a sound studio. The songs were developed with two overriding factors in mind: the natural universal pattern/character of children’s songs (i.e., simple repetitive structures, short length, narrow pitch range, small melodic intervals, simple harmony); and use of verbal utterances in place of language (i.e., words/lyrics). The utterances emphasize a limited number of consonants, which are the very first verbal expressions of humans, such as verbal sounds ‘Ba’, ‘Da’, ‘Ma’, and ‘Na’; these have been seen as common to all languages and cultures (Dromi & Ringelwood, 1996; Dromi, Ringelwood, & Bar-Lev, 2000). Our initial pilot studies demonstrated that the songs were very easy to imitate; caregivers felt that the songs could be used for early linguistic exposure that might provide stimulation for babies and toddlers young first verbal utterances. Moreover, the parents reported that they could perform these songs without using other media, and therefore such songs can serve as mediating interactions and communication. The two musical segments employed in the current study consist of female vocals accompanied by an electronic keyboard using *new-age* ‘world-music’ sound textures; one was in a major key while

the other was in a Dorian mode; both were approximately 1.15 minutes in length.

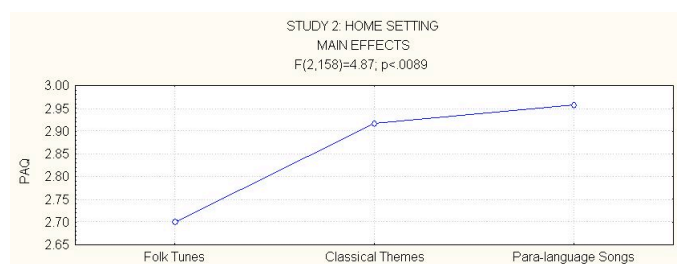
[B] Three field studies were conducted. In Study 1, 62 parents of babies and toddlers were recruited in waiting rooms (*WR*) of Child Care Centers in Tel Aviv. While they waited to see a physician, each completed a *Parents Preference Questionnaire (PPQ)*; an 8-item subset was completed after listening to each pair of three different genres of musical stimuli (classical themes, popular folk tunes, and Para-language songs) via an *iPod* (Apple) with K271 Studio (AKG Acoustics) circumaural closed-back professional headphones. In Study 2, 80 parents of babies and toddlers under went the same procedure as Study 1 but within their own home setting (*HS*). In Study 3, 15 mothers of babies and toddlers completed the *PPQ* subsequent to participation in a small group encounter (*SGE*) that encouraged interactive caregiver-baby movement-sequences accompanied by three music backgrounds presented free-field via a 24w micro-component stereo (JVC UX-T150) with two detachable wooden-cabinet stereo speakers placed on the floor facing the participants.

Results

The *PPQ* was tallied for each musical stimulus in each study. These were entered into separate within-subjects repeated measures analysis of variance (ANOVA). There were main effects for Study 1: $F_{(2, 122)} = 6.09$, $MSe = 0.3861$, $p < 0.01$, $\eta_p^2 = 0.09$.



That is, mothers of babies and toddlers rated Para-language songs significantly higher in preference than classical themes or popular folk tunes ($M = 3.36$, $SD = .63$; $M = 3.07$, $SD = .66$; $M = 2.99$, $SD = .77$). Further, there were main effects for Study 2: $F_{(2, 158)} = 4.87$, $MSe = 0.316$, $p < 0.01$, $\eta_p^2 = 0.06$.



That is, mothers of babies and toddlers rated Para-language songs and classical themes significantly higher in preference than popular folk tunes ($M = 2.96$, $SD = .58$; $M = 2.92$, $SD = .53$; $M = 2.70$, $SD = .60$). However, there were no main effects for Study 3: $F_{(2, 28)} = 1.80$, $MSe = 0.35$, $p < .18$, $\eta_p^2 = 0.11$. That is, mothers of babies and toddlers rated Para-language songs, classical themes, and popular folk tunes in a similar fashion ($M = 2.95$, $SD = .63$; $M = 3.30$, $SD = .81$; $M = 3.31$, $SD = .67$).

Conclusions

The results of the current study suggest that as consumers, parents of babies and toddlers are open to consider options for alternative musical genres to enhance experiences and interactions with their children. Certainly, creative provocative marketing efforts, which have been based on quasi-empirical data, have falsely mounted parental beliefs about some music stimuli in devices and playthings for babies and toddlers; that is, that classical themes and the more traditional folk tunes are beneficial to their child's development and might even increase their cognitive skills and intelligence. Hence, good parents should prefer these musical stimuli.

We suggest that the newly developed Para-language Songs stimuli be incorporated into musical toys, devices, playthings, and products for babies and toddlers – in place of the current commercial practice that reproduces classical themes and popular folk tunes, which may be inappropriate for babies and toddlers. The new stimuli can assist parents and caregiver interactions, as they are simple to reproduce in real-time. Moreover, engagement with the songs can support more appropriate emotional development and language acquisition.

Keywords

Para-language Songs, Musical Communication, Musical Interaction, Music Devices, Child Development.

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