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Home music engagement among families of culturally closed communities

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ABSTRACT

No study thus far has investigated music engagement in the home among sectors of society, that because of cultural and/or ethno-religious characteristics, have a drastically different lifestyle and home environment than typically ordinary conventional local residents, who represent the more hegemonic popular Western liberal-minded secular culture. The current study recruited 96 families belonging to one of two subgroups: Modern-Orthodox ($n = 49$) or Ultra-Orthodox ($n = 47$) Jews in Israel. They completed the *Children's Music Behavior Inventory* (CMBI). The findings show no differences between the overall Orthodox sample to a matched sample of the general population. However, when comparing between the two subgroups significant differences surfaced concerning parent-initiated music activities in the home environment. The study demonstrates that even among families who do not fit into the mainstream of society, music is a crucial part of family life embedded in the home, and that music engagement is an essential component within parent–child relationships.

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Introduction

The image of a care-giver, most often a mother, face to face with her young child, singing a short song, often accompanied with simple rhythmic patterns and movement sequences, symbolizes natural spontaneous parent–child interactions. Such widespread musical behaviours incorporating music and in many cases rhythmic movements, are referred to as *parental musical engagement* (Brodsky, Sulkin, & Heffer, 2020, 2021). Musical interactions of parents and care-givers with young children are implemented across cultures and throughout history from the dawn of evolution (Costa-Giomi & Benetti, 2017; Custodero, Britto, & Brooks-Gunn, 2003; Ilari & Young, 2016). Nonetheless, one might think that in the technologically-based post-millennial era we live in today, new care-giving behaviours have caused a full eclipse of yesteryear's traditional forms of parenting. For example, pre-recorded music programmes have long-ago been employed as a replacement for the singing of lullabies (Brooks, 2016; Sulkin & Brodsky, 2015; Young, 2008). In addition, developments from the current screen-saturated environment, such as digital devices (e.g. smartphones and tablets) with downloadable applications, have become welcomed tools for child-rearing routines (Elias & Sulkin, 2019). On the other hand, recent findings (e.g. Brodsky et al., 2020, 2021; Politimou, Stewart, Mullensiefen, & Franco, 2018) do reveal that traditional behaviours involving spontaneous musical interactions of parents and their young children can be seen today *as if* performed by generations past.

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Musical interactions initiated by parents with their very young children (from birth through to age five) are not trivial by nature (McPherson, 2009). Musical activity sanctions a remarkable training platform for the advancement of motor-cognitive-emotional skills that integrate the basic elements of music, language, and movement (Beck, 2018; Degé & Schwarzer, 2011; Gordon, 2003; Moreno et al., 2011), and transfer cultural knowledge including the acquisition of norms and rules that are essential for scaffolding the foundations of community (Custodero & Johnson-Green, 2003; Sheham & Scott, 1995). Children under the age of five experience music every day, not only by *formal* training as found in educational frameworks (e.g. nursery, preschool, enrichment lessons), but for the most part in their natural home environment alone and/or with family members that can be viewed as *informal* training. In fact, from early infancy throughout toddlerhood to preschool age, children engage in various non-educational deliberate musical activities in their home; these include performing more traditional and educational playsongs, singing, dancing, listening to pre-recorded music, watching and imitating video-clips from various types of screens (e.g. TV, computer monitors, tablets, and smartphones), and even creating music with other siblings and parents (Brodsky & Sulkin, 2011, 2020; Cirelli, Periris, Tavassoli, Recchia, & Ross, 2020; Dean, 2020; Flohr, 2005; Politimou et al., 2018; Wallace & Harwood, 2018). Initially, parental singing may be the central musical behaviour in early musical interactions when babies and infants are rather limited in active ability (Costa-Giomi, 2014; Costa-Giomi & Ilari, 2014; Shoemark & Arnup, 2014), but as they grow older, their behavioural repertoire of musical activity widens and becomes more varied, subsequently including: vocalizing and singing, moving and dancing, rhythmic play and the handling of musical instruments, listening to music, and watching music videoclips.

Measurement of music engagement in the home

It should be noted that only few studies have focused on musical interactions in the home setting (for a review, see: Brodsky et al., 2020, 2021). Nonetheless, since the millennium there has been increased attention on parental music engagement (e.g. Barrett, 2009; Wallace & Harwood, 2018; Romanik, 2016). Valerio and colleagues (2011, 2012) developed the *Children's Music-Related Behavior Questionnaire*. This measure was designed for parents to document observed music behaviours of their children younger than five years old, as well as to detail parent-initiated music activities. The questionnaire requires parent-respondents to provide information about occurrences during the previous month. Valerio, Reynolds, Morgan, and McNair (2012) demonstrated high construct validity and reliability for *CMRBQ* among 616 parent-respondents of American families. The questionnaire consisted of eight parts (also referred to as subscales). Parts I-VII outlined child-initiated music activity as recalled by the parent, while Part VIII assessed the frequency of parent-initiated musical activities. Valerio et al. reported eight valid reliable *CMRBQ* subscales: I. *Affect & Emotion* ($\alpha = 0.77$); II. *Vocalizations* ($\alpha = .83$); III. *Moving* ($\alpha = .83$); IV. *Daily Routines* ($\alpha = .83$); V. *Requests* ($\alpha = .90$); VI. *Taking Turns* ($\alpha = .88$); VII. *Creativity* ($\alpha = .89$); and VIII. *Parent Musical Activities* ($\alpha = .97$). For mean scores and standard deviations of each subscale, see Table 1. In 2015, Valerio and Reynolds re-released the questionnaire as the *Children's Music Behavior Inventory* (CMBI). Then in 2017, Brodsky et al. (2020, 2021) translated *CMBI* to the Hebrew language adapting the inventory for local Israeli culture, and recruited 300 families from the general population of Israel to participate.[1] This version is referred to as *CMBI V.972*.[2] Like its American *CMRBQ* counterpart, the Israeli version demonstrated eight reliable subscales: I. *Affect & Emotion* ($\alpha = 0.90$); II. *Vocalizations* ($\alpha = .85$); III. *Moving* ($\alpha = .89$); IV. *Daily Routines* ($\alpha = .73$); V. *Requests* ($\alpha = .91$); VI. *Taking Turns* ($\alpha = .85$); VII. *Creativity* ($\alpha = .86$); and VIII. *Parent Musical Activities* ($\alpha = .91$). For mean scores and standard deviations of each subscale, see Table 1. The researchers reported *CMBI* to be *culture-free*, and claimed the findings of the Israeli sample may even be a more reliable portrait of music engagement in the home than those presented by Valerio et al. who employed a somewhat predisposed biased sample.

A second effort by Politimou et al. (2018) was titled *Music@Home*. The team developed two questionnaire formats: (a) Infant version (17 items); and (b) Preschool version (18 items). *Music@Home*

Table 1. *CMBI V.972* subscale scores and total score of published samples versus the current sample.

	American *CMRBQ*[a]		*CMBI V.972* GenPop[b]		*CMBI V.972* Orthodox[c]	
Subscales	*M*	*SD*	*M*	*SD*	*M*	*SD*
Part I Affect & Emotion	3.56	0.47	3.18	0.82	3.34	0.59
Part II Vocalizations	3.24	0.64	2.76	0.79	2.74	0.75
Part III Moving	3.26	0.62	2.68	0.79	2.69	0.81
Part IV Daily Routines	2.67	0.68	2.26	0.75	2.31	0.72
Part V Requests	2.67	0.76	2.46	0.82	2.51	0.80
Part VI Taking Turns	2.90	0.98	2.24	0.87	2.33	0.76
Part VII Creativity	2.76	0.81	2.18	0.84	2.08	0.84
Part VIII Parent Musical Activities	2.80	0.58	2.59	0.57	2.49	0.84
TOTAL INVENTORY SCORE	2.98	0.33	2.54	0.34	2.56	0.38

[a]*CMRBQ* American Sample: $N = 616$ (Valerio et al., 2012).
[b]*CMBI V.972* Jewish General Population: $N = 300$ (Brodsky, Sulkin, & Hefer, 2021).
[c]*CMBI V.972* Orthodox: $N = 96$.

teased out 12 different aspects of musical experience in the home, classifying them into five independent components among 347 children aged 0–23 months, or four component factors among 395 children aged 24–66 months. The Infant version: General Factor ($\alpha = .87$); 1. *Parental Beliefs* ($\alpha = .69$); 2. *Emotional Regulation* ($\alpha = .60$); 3. *Child's Active Engagement* ($\alpha = .84$); 4. *Parent-Initiation of Singing* ($\alpha = .81$); and 5. *Parent-Initiation of Music-Making* ($\alpha = .86$). The Pre-school version: General Factor ($\alpha = .81$); 1. *Parental Beliefs* ($\alpha = .71$); 2. *Child's Active Engagement* ($\alpha = .77$); 3. *Parent Initiation of Musical Behavior* ($\alpha = .80$); and 4. *Breadth of Musical Behavior* ($\alpha = .60$). The researchers noted strong associations between all component factors with *CMBI* (Part VIII: *Parent Music Activities*). Most recently, Schaal, Politimou, Franco, Stewart, and Müllensiefen (2020) translated *Music@Home* into German. All factors were validated among 656 German families. The Infant version: General Factor ($\alpha = .81$); 1. *Parental Beliefs* ($\alpha = .64$); 2. *Child's Active Engagement* ($\alpha = .74$); 3. *Parent-Initiation of Singing* ($\alpha = .80$); and 4. *Parent-Initiation of Music-Making* ($\alpha = .53$). The Pre-school version: General Factor ($\alpha = .82$); 1. *Parental Beliefs* ($\alpha = .71$); 2. *Child's Active Engagement* ($\alpha = .66$); 3. *Parent Initiation of Musical Behavior* ($\alpha = .79$); and 4. *Breadth of Musical Behavior* ($\alpha = .70$). The research team found positive associations between both versions with two subscales of the *Gold-MSI* (a measure of musical training and active engagement), as well as with subscale of the *SBE* (a German language development assessment tool) exclusively among the 2-year old children.

Culturally closed communities; the case of Orthodox Jewry in Israel

For the most part, all the above studies investigating music engagement in the home have recruited samples consisting of individuals that would be considered *mainstream*. That is, the enlisted samples represent more hegemonic popular cultures. No study thus far has employed sectors of society, that because of their alternative cultural communal background, including a more demanding ethno-religious regime, have a drastically different lifestyle and home environment. Although on the one hand, these families live *within* society, on the other hand they seem to live their lives *along-side* society. For the most part, such groups who are often referred to as *plain-people*, decline from and enforce restrictions to: conventional education; employment; grooming, dress, fashion, body adornment, and cosmetics; national news broadcasting, and local paper and electronic media; digital technologies, popular music and culture; and interpersonal contact, with specific rules, customs, and conventions that guide face-to-face contact. As a society, these groups are culturally confined. They view most others as 'outsiders' or 'foreigners'. The term 'closed communities' refers to being cut-off – sometimes even gated by architectural barriers – from the diversity found in other more open communities including mental attitudes, liberal freedoms, and the technological advancements of the modern world. Among sects fitting this description are Adventists,

Amish, Anabaptists, Apostolic Lutherans, Caneyville Christians, Cooperites, Fundamentalist Christians, Hutterites, Quakers, Later-day Saints (Mormons), Mennonites, Puritans, and a host of factions from within Evangelical, Jewish, and Muslim faiths. With this in mind, Israel may be a highly compelling locality to conduct research on music engagement in the family and home settings among culturally closed communities that live on the fringe of modern-day society. For empirical reasons, such as the employment of an assessment measure in Hebrew describing musical activity associated to Western music cultures, we have chosen to exclusively target Jewish communities – albeit those recognized for living on the side-lines of the more standard commonplace society in Israel. Namely, the current study focuses on families associated with very strict religious Orthodox lifestyles.

Most recently, the Israel Central Bureau of Statistics (2020) surveyed the total populous of 9,136,000 citizens; they found that the residents of Israel are comprised of Jews (74%), Muslims (18%), Christians (2%), Druze (2%), and other convictions (4%, including Samaritans, Bahais, and Armenians). Two years earlier, the Israel Central Bureau of Statistics (2018) reported that among the Jewish population, 45% describe themselves as 'secular' while 25% report they are 'traditional',[3] and the remaining 30% affiliate with a spiritual lifestyle known as 'Modern-Orthodox' (16%) or 'Ultra-Orthodox' (14%). The picture that surfaces is one pointing to one-third of all Jewish inhabitants in Israel who live their everyday lives according to sacred traditions well beyond middle-of-the-road Israeli culture. Most specifically, these sectors live according to the *Torah* (the Old Testament Bible) and *Halacha* (literal meaning 'the way', which are the laws and ordinances having evolved since biblical times) to regulate daily conduct based on religious observances. It would be pertinent to view Orthodox rituals as precise guidelines based on a spectrum from 'moderate' to 'extreme' standards of existence; these instructions specifically define the habits, traditions, prohibitions, and customs of being (Arian & Keisar-Shugerman, 2009).

The current study targets Israeli families affiliated with the more observant forms of Judaism, known as *Modern-Orthodox* and *Ultra-Orthodox*. We point out that both of these groups believe in the same holiness of the Torah, and both carefully follow Halacha. Although Hebrew is the official national language of Israel, members of the Ultra-Orthodox community prefer to speak *Yiddish* – a German-derived language written with the Hebrew alphabet, historically spoken by Ashkenazi Jews from central and eastern Europe (dating back to the nineteenth Century). One difference between the two, is that the Modern-Orthodox tend to recognize the value of secular knowledge, and partake in activities of daily life as do many non-Orthodox (Dale, 2017). For example, the Modern-Orthodox often participate in academic scholarship, professional training, employment among the service trades within the local public, exposure to electronic media, and many enlist in the 3-year national Israeli compulsory military service. In direct opposition to such dispositions, the Ultra-Orthodox are wholeheartedly absorbed with Torah scholarship, and conduct their lives within segregated communities. Although the Ultra-Orthodox community is divided into three branches (based on historic genealogies and pedigrees, also referred to as dynasties), all are highly similar in their strict observance of Jewish law, their styles of dress, familial roles, and cultural behavioural observances as practiced in home environments.

Family life for both Modern-Orthodox and Ultra-Orthodox are driven by commandments from the Torah and Halacha. For example, the commandment to 'be fruitful and multiply' is taken literally, resulting in high birth rates among Orthodox families. Hleihel (2017) claims that in the year 2017, the average Israeli family was comprised of 2.5 children, while Modern-Orthodox families averaged 4 children per household, and Ultra-Orthodox families averaged 7.2 children per household. Unlike more common depictions of family life whereby fathers go to work in order to earn wages to support the family while mothers are left to care for the children, among Ultra-Orthodox families the men are those who need to fulfil a superior archetype by concentrating their efforts on Torah study. Namely, Ultra-Orthodox men intentionally leave all aspirations of individualism and career development, as well as daily needs (including income, home maintenance, and child-rearing) to women (Layush, 2014). Orthodoxy has always been profoundly committed to patriarchy and more traditional gender roles (Finkelman, 2015); accordingly, a woman's duty is to be a wife, mother, and

breadwinner, while a man's mission is to pursue religious studies in a *Kollel Yeshiva* (literal meanings a 'communal place to sit and learn'). Nonetheless, the past few years have seen changes in this characteristic model of familial functioning; while economic necessity continues to require women to exit the domestic sphere and enter the workplace (Kulik, 2016), the complexities of raising large child-centred families require men to take on tasks in the home (Stadler, 2012). Finkelman points out that as a result, some men have begun to participate in housework, and have become responsible for some child rearing. Employment rates among Ultra-Orthodox men in 2018 (before the Covid-19 outbreak) were just about 50% compared to 90% for all other Jewish men residing in Israel (Malach & Cahaner, 2019). However, in reality, such changes among the Ultra-Orthodox family practices are ever so subtle, and the inter-relationships between gender and parental roles are still far from those of the more acceptable behaviours among the modern liberal-minded secular hegemonically mainstream general population (Wagner, 2015).

Both Modern-Orthodox and Ultra-Orthodox parents view children's education as critical. Religious education is conceived not only as a means to impart knowledge, but also as a platform to instil traditional practices in the minds and hearts of young children (Marks & Dollahite, 2012). Within this mandate fathers teach their sons the prayers they are expected to recite as mature men; engaging in daily prayers three times a day, on festival days of special worship, as well as the Sabbath (Finzi-Dottan & Gilerenter, 2018; Seri, 2015; Wagner, 2015).

Music and musical home environment among Orthodox Jewry in Israel

Music plays a central role in the religious sector. Foremost, there is a vast repertoire of traditional tunes (both in Hebrew and Yiddish); some melodies are particular to religious rituals (*liturgical*), while others are associated to community and family (*para-liturgical*). In an interesting development during the past two decades, there has been a surge of popular ultra-religious music reflecting a new hybrid of liturgical words accompanied by pop-rock music backgrounds (Gilboa, 2010; Seri & Gilboa, 2018). Ironically, there is a vibrant music industry of professionally packaged CDs. Especially as there are widespread restrictions on internet usage among Ultra-Orthodox communities, including music streaming (e.g. *Spotify*, *Apple Music*, *Pandora*, *SiriusXM*, *GooglePlay*, *YouTubeMusic*, etc.), CDs are a prevalent format of music consumption. For the most part, the music found on CDs are performed, produced, and monitored (e.g. regulated) for content deemed as appropriate. Music CDs for children not only provide a commercial blend of themes from everyday Orthodox life and religious topics, but there are didactical songs intended to assist religious toddlers and preschool children to learn materials as well as to develop their memory.

Songs are employed as a means for budding Ultra-Orthodox males between ages 3–7 years old when they are expected to undergo a significant transformation from being an 'infant/toddler' cared for and taught by female figures at home or in small day-care centres, to maturing into a 'preschooler/school-aged child' taught by male figures in the *Cheider* (literal meaning 'room', a formal educational setting for teaching Orthodox boys). The advancement to a Cheider has major implications for the song repertoire at this stage. First, boys are encouraged to refrain from hearing the female singing voice; thereafter they are exclusively exposed to musical repertoire in educational settings performed by male singing voices. Second, the contents of songs are abruptly aimed at keeping the religious code and *loving the Torah* (Seri, 2015); all previously treasured repertoire such as playsongs and other childlore are banned.

The current investigation

Despite what may be known about the place of music among Orthodox families, the nature of Parental Musical Engagement has not been investigated. The current investigation, then, aims to fill this gap. The main goal is to explore musical activity in the home setting among families, that live – because of their religious convictions – on the fringe of mainstream society. If musical interactions

of parents and care-givers with young children are truly implemented across all societies, then we might assume that at least in Western societies, there would be no quantitative differences among families based on colour, spiritual belief, or even revenue. But, rather we would expect to find differences reflecting qualitative variations.

The study

Methodology

Participants

Initially *CMBI V.972* was completed by 107 parents. Recruitment was limited to Jewish Orthodox residents, as the selected representative sample of a culturally closed community; these individuals also have a Western ear allowing for comparison of music activities in the home as found among *CMBI* items developed in America. During data analyses, nine cases were dropped: two account for children over 60 months of age; two contained unreliable data; four were completed by respondents other than a parent (e.g. aunt, grandmother); and one was for a child born as a twin. The final sample of respondents ($N = 96$) was comprised of 81 (84%) mothers, who were roughly 31 years old ($SD = 6.56$, range = 22–49 years). More than half ($n = 68$, 69%) of the respondents had earned a university degree. The majority ($n = 84$, 88%) of participants were local-born, while the others ($n = 12$, 13%) immigrated from seven other countries (including: Ethiopia, Europe, Mexico, Russia, and USA); albeit, when recruited these parents had already resided in Israel for an average 19 years ($SD = 5.32$, Range = 11–26 years). The parent-respondents self-reported to belong to a slightly lower-to-middle middle-class; 32 (33%) earned an average household income of $1,600 per month, 40 (42%) earned $3,000 per month, and 13 (14%) earned $4,500+ per month. An estimation of socioeconomic status (SES) was borne out by calculating education (four categories) and income (five categories); then combining them into a newly formulated value (i.e. (education + income)/2) to produce an *SES Scale* (Range = .05–4.5). The average SES of the current sample was very near the midline ($M_{SES} = 2.68$, $SD = 0.56$). Finally, the majority of respondents (77%) reported that on average two adults lived in their home (but we note Range = 1–6 adults), with one-to-three children under the age of 18 living in their home for 61% (but we note Range = 1–9 children).

The target children ($N = 96$) were comprised of 36 (38%) female and 59 (61%) male babies, infants, toddlers, and young children; they were roughly 2.5. years old ($M_{months} = 29$, $SD = 16.97$, Range = 2–58 months). There were 44 (46%) firstborn children, 15 (16%) second-borns, 10 (11%) third-borns, three (3%) fourth-borns, seven (7%) fifth-borns, seven (7%) sixth-borns, five (5%) seventh-borns, three (3%) eighth-borns, and two (2%) ninth-borns. All of the children were singletons. We note that all data was collected during a time period prior to the onset of the Covid-19 pandemic that surfaced in Israel towards the month of February 2020.

By self-report the sample identified themselves as belonging to one of two subgroups: Modern-Orthodox ($n = 49$) and Ultra-Orthodox ($n = 47$). An analysis of descriptive data reveals that the Modern-Orthodox parents were more educated by having attained an increased number of university degrees (Modern-Orthodox = 88% *vs* Ultra-Orthodox = 49%; $t_{(93)} = 3.43$, $SE = 0.14$, $p < 0.01$, $d = 0.69$, CI [0.733–0.196]), and while the two subgroups were about equal in their average household monthly income (Modern-Orthodox = $2,700 *vs* Ultra-Orthodox = $2,500), this difference was enough to impact on the Modern-Orthodox population as belonging to a slightly higher socioeconomic status (Modern-Orthodox $M_{SES} = 2.86$, $SD = 0.52$ *vs* Ultra-Orthodox $M_{SES} = 2.51$, $SD = 0.56$; $t_{(88)} = 3.08$, $SE = 0.11$, $p < 0.01$, $d = 0.65$, CI [0.576–0.124]). In addition, there were noteworthy differences between the number of mother respondents versus father respondents (Modern-Orthodox Moms = 71% *vs* Ultra-Orthodox Moms = 98%), as well the age of the respondents (Modern-Orthodox $M_{Age} = 28$ years, $SD = 5.89$ *vs* Ultra-Orthodox $M_{Age} = 36$ years, $SD = 6.14$; $t_{(91)} = 4.81$, $SE = 1.25$, $p < 0.001$, $d = 0.99$, CI [3.520–8.480]). Although the target children were younger among the Modern-Orthodox subgroup ($M_{Age} = 27$ months, SD = 17.26 *vs* $M_{Age} = 32$ months, SD = 16.47), this age difference was

not statistically significant. Nonetheless, Modern-Orthodox families reported to have less children under 18 years old living in their home (Modern-Orthodox $M_{\text{Children}<18} = 1.73$, $SD = 0.95$ *vs* Ultra-Orthodox $M_{\text{Children}<18} = 4.76$, $SD = 2.25$; $t_{(92)} = 8.64$, $SE = 0.35$, $p < 0.001$, $d = 1.76$, CI [2.333–3.727]), and subsequently, the target children chosen for the Modern-Orthodox families were much lower in birth order (Modern-Orthodox $M_{\text{TargetChild}} = 1$st–2nd borns *vs* Ultra-Orthodox $M_{\text{TargetChild}} = 4$th–5th borns; $t_{(94)} = 8.10$, $SE = 0.37$, $p < 0.001$, $d = 1.64$, CI [2.228–3.676]).

Given these differences of family composition, and the fact that the study focuses on music engagement in the home, it seemed warranted to view the two subgroups as diverse and therefore analyses presented below compares all data between the two subgroups.

Measure

CMBI V.972 is an 11-page booklet, slightly adapted from the American *CMBI* (previously known as *CMRBQ* by Valerio et al., 2012). The inventory consists of 97 items clustered into eight subscales: Parts I-VII (68 items) outline child-initiated music activity as recalled by the parent-respondent; Part VIII (29 items) assesses the frequency of parent-initiated musical activities. Among the Orthodox sample, *CMBI V.972* demonstrated acceptable-to-high reliability: I. *Affect & Emotion* ($\alpha = 0.75$); II. *Vocalizations* ($\alpha = .85$); III. *Moving* ($\alpha = .74$); IV. *Daily Routines* ($\alpha = .84$); V. *Requests* ($\alpha = .90$); VI. *Taking Turns* ($\alpha = .85$); VII. *Creativity* ($M = 2.08$, $\alpha = .87$); and VIII. *Parent Musical Activities* ($\alpha = .91$). More details about the inventory can be seen elsewhere (see: Brodsky et al., 2020, 2021). Mean scores and standard deviations of each subscale, can be seen in Table 1.

Procedure

Prior to the onset, the study was approved by a college review board for ethical treatment of human subjects (IRB). Initially, a 'Call for Participation' was sent via email to 150 undergraduate students registered in five courses at two religious-oriented colleges. Twenty-five students volunteered for the study to serve as recruiters; they were all female, between 20–30 years of age. Each undergraduate was asked to enlist three parents from Orthodox households with children between 0–5 years old; for the most part they recruited relatives and other members from within their community. Dean (2020) stated that exploring musical home life is problematic because of the difficulty in accessing private homes. Therefore, this procedure of Orthodox undergraduates recruiting religious families can be seen as a form of *insider research*. Seri (2015) claims that Orthodox families – most specifically the Ultra-Orthodox – are less likely to comply as informants for initiatives by external agencies and researchers because of suspicions, feeling alienated, and insecurities about exposing personal details to outsiders.

Every undergraduate participated in a single 60-minute training session to learn a standardized script for recruiting parents, as well as uniform procedures for completing the questionnaire. Each parent was briefed verbally, read an information letter, and signed an 'Informed Consent' form. Although data collection for each student was completed within three months, the period of collecting data was spread out over an entire academic season.

Results

Foremost, *CMBI V.972* subscale scores of the current Orthodox sample were compared to the original scores of *CMRBQ* among American families (See Table 1). As can be seen in Table 1, all subscale scores of the Orthodox community were lower than those reported by Valerio et al. (2012). Moreover, similarly to families from the general population described by Brodsky et al. (2020, 2021), and when employing a Bonferroni correction for multiple comparisons ($p < 0.001$), all subscale scores (except Part V) and the Total Inventory score were statistically significantly lower than American responses: I. *Affect & Emotion* ($t_{(710)} = 4.297$, $SE = 0.054$, $p < 0.001$, $d = 0.41$, CI [0.3951–0.1249]); II. *Vocalizations* ($t_{(710)} = 6.949$, $SE = 0.072$, $p < 0.001$, $d = 0.72$, CI [0.6413–0.3587]); III. *Moving* ($t_{(710)} = 8.149$, $SE = 0.071$, $p < 0.001$, $d = 0.80$, CI [0.7197–0.4403]); IV. *Daily Routines* ($t_{(710)} = 4.786$, $SE = 0.075$,

$p < 0.001$, $d = 0.51$, CI [0.5077–0.2123]); V. *Requests* ($t_{(710)} = 1.905$, $SE = 0.084$, $p = 0.06$, $d = 0.21$, CI [0.3249–0.0049]); VI. *Taking Turns* ($t_{(710)} = 5.448$, $SE = 0.105$, $p < 0.001$, $d = 0.65$, CI [0.7754–0.3646]); VII. *Creativity* ($t_{(710)} = 7.613$, $SE = 0.089$, $p < 0.001$, $d = 0.82$, CI [0.4438–0.1762]); VIII. *Parent Musical Activities* ($t_{(710)} = 4.548$, $SE = 0.068$, $p < 0.001$, $d = 0.43$, CI [0.4438–0.1762]); and Total Inventory Score ($t_{(710)} = 11.354$, $SE = 0.037$, $p < 0.001$, $d = 1.18$, CI [0.4926–0.3774]).

Then, the current 96 Orthodox families were matched to a sample of families from the general population in Israel; these other 96 cases were taken from a larger dataset of 300 families collected between 2016 and 2018 (Brodsky et al., 2020, 2021). Cases were matched on four descriptive variables: (1) age of the target child (months); (2) sex of the target child (boy/girl); (3) sex of the parent respondent (mom/dad); and (4) birth position (1st, 2nd … 6th, 7th). It should be noted that matching on all four variables was successful for 81 (84%) cases of the sample; there were an additional 10 (11%) cases where children were matched ± one month of age, 4 (4.1%) cases in which the sex of the parent-respondent was opposite, and 5 (5.2%) cases in which the children's birth position was nearly the same. While the analyses found that *CMBI V.972* subscale mean scores (as well as the Total Inventory score) were slightly higher for the Orthodox families compared to families from the general population, none of these differences were statistically significant. Moreover, when analyzing subgroups separately, scores for each subgroup were slightly higher than the general population, but again none of these were statistically significant.

Finally, *CMBI V.972* subscale scores were compared between the two subgroups (Modern-Orthodox *vs* Ultra-Orthodox, See Table 2). As can be seen in Table 2, only *PMA* (i.e. parent-initiated music activity) surfaced as statistically significantly different. This difference indicates that Modern-Orthodox parents engaged in more musical activity in the home than did Ultra-Orthodox parents ($t_{(94)} = 2.14$, $SE = 0.11$, $p < 0.05$, $d = 0.43$, CI [0.447–0.019]). It should be noted that differences between the subgroups for Part V (*Requests*) only neared significance.

In an effort to comprehend these differences, an exploratory item analysis of *PMA* was undertaken (See Tables 3 and 4). This analysis of the content indicated that all items could be coded by 'category of engagement'. These were: *Singing* songs and rhythms (9 items: 1, 2, 4, 6, 8, 13, 21, 26, 27); *Playing* toys and music instruments (5 items: 21, 22, 26, 27, 28); *dancing* and moving (4 items: 15, 16, 17, 18); *Listening* to pre-recorded music (2 items: 12, 13); *Composing* songs and rhythms (4 items; 2, 3, 4, 5); *Reading* books on topics related to music (1 item: 23); *Observing* child engaged in music (2 items: 19, 20); *Encouraging* child to engage with music (3 items: 11, 14, 29); and *Attending* children's music classes or concerts outside of the home (2 items: 24, 25). The mean score for category of music engagement was entered into an analysis for differences between the two independent subgroups (See Table 4). As can be seen in Table 4, Modern-Orthodox parents reported higher levels of self-initiated engagement for all categories (except *Encouraging* child to engage with music). More specifically, while one category only neared significance (i.e. *Dancing* and moving), four categories were statistically significant: *Singing* songs and rhythms; *Listening* to pre-recorded music; *Reading*

Table 2. *CMBI V.972* subscale scores and total score; comparisons between orthodox subgroups.

	Modern-Orthodox[a]		Ultra-Orthodox[b]		
CMBI (V.972) Subscale	*M*	*SD*	*M*	*SD*	*p*
Part I Affect & Emotion	3.30	0.66	3.37	0.52	0.58
Part II Vocalizations	2.66	0.84	2.83	0.64	0.26
Part III Moving	2.70	0.95	2.67	0.63	0.85
Part IV Daily Routines	2.33	0.76	2.29	0.69	0.77
Part V Requests	2.65	0.86	2.37	0.72	0.09
Part VI Taking Turns	2.33	0.76	2.32	0.76	0.95
Part VII Creativity	2.03	0.91	2.14	0.76	0.52
Part VIII Parent Musical Activities	2.60	0.51	2.37	0.55	0.03
TOTAL INVENTORY SCORE	2.74	0.55	2.66	0.44	0.43

[a] $n = 49$.
[b] $n = 47$.

Table 3. *CMBI* Part VIII: parent musical activity. Developed by Valerio and Reynolds (2015).

1.	I sing songs or perform rhythms/rhymes for my child
2.	I make up songs or rhythms/rhymes using words for my child to listen to
3.	I make up songs or rhythms/rhymes using words with my child
4.	I make up songs or rhythms/rhymes using nonsense syllables for my child to listen to
5.	I make up songs or rhythms/rhymes using nonsense syllables with my child
6.	I sing songs or rhymes for my child to listen to during daily routines such as bathing, dressing, cleaning up toys, getting ready to go somewhere
7.	I sing songs or rhymes with my child during daily routines such as bathing, dressing, cleaning up toys, getting ready to go somewhere
8.	I sing songs or rhymes and leave out a note or phrase to see what my child does
9.	I sing songs or perform rhymes when my child asks me by using verbal or non-verbal communication
10.	I encourage my child to make up his/her own songs/rhymes
11.	I compliment my child's made-up songs/rhymes
12.	I play recorded music for my child in the house or car when he/she is awake
13.	I sing along with recorded music while my child is listening
14.	I encourage my child to sing along with recorded music
15.	I dance around with my child while playing music CDs or music DVDs
16.	I dance around with my child while I sing songs or perform rhymes for my child
17.	I dance around with my child while he/she sings songs or performs rhymes
18.	I dance around with my child while we sing songs/rhymes together
19.	I notice that my child's musical vocalizing sounds rhythmic, but not like singing
20.	I notice that my child's musical vocalizing sounds like singing
21.	I play toy instruments for my child to listen to/observe
22.	I play toy instruments with my child
23.	I read books that have a music theme to my child
24.	I attend early childhood music classes with my child
25.	I attend music concerts, ballets, or musicals with my child
26.	I play a musical instrument by itself while my child listens
27.	I accompany myself on a musical instrument while i sing for my child
28.	I play songs on a musical instrument while my child sings along
29.	I invite my child to play my musical instrument

books on topics related to music; and *Attending* music classes or concerts with children outside of the home – were all higher for the Modern-Orthodox families. A second content analysis indicated that items could be coded by 'mode of engagement'. These were: *Self-engaged* (i.e. parent-alone, 9 items: 1, 2, 4, 6, 8, 12, 21, 26, 27); and *Co-engaged* (i.e. parent–child dyad, 11 items: 3, 5, 7, 9, 10, 15, 16, 17, 18, 22, 28). The mean score for mode of music engagement was entered into an analysis for differences between the two independent subgroups (See Table 4). As can be seen in Table 4, Modern-Orthodox parents reported higher levels of engagement for both modes, but these only neared levels of significance.

Table 4. Activities of music engagement in the home by parents.

	Modern-Orthodox[a]		Ultra-Orthodox[b]		
Parental Musical Activities	*M*	*SD*	*M*	*SD*	*p*
Singing (songs/rhythms)	2.82	0.56	2.56	0.62	0.033
Playing (toys/instruments)	2.01	0.76	1.89	0.72	0.432
Dancing (movement)	3.05	0.80	2.72	0.91	0.064
Listening (to recorded music)	3.65	0.71	3.24	0.85	0.012
Composing (songs/rhythms)	2.38	0.75	2.16	0.76	0.172
Reading (books on music topics)	2.41	1.14	1.83	1.01	0.001
Observing (music child)	2.64	0.92	2.50	0.92	0.450
Encouraging (music child)	2.49	0.83	2.55	0.84	0.710
Attending (music classes/concerts)	1.60	0.82	1.18	0.51	0.003
Self-engaged Parent	2.57	0.51	2.37	0.57	0.073
Co-engaged Parent	2.59	0.62	2.36	0.69	0.092

[a] $n = 49$.
[b] $n = 47$.

Discussion

The main goal of the study was to explore musical activity in the home setting among families that live – because of their religious convictions – on the fringe of mainstream society. These families are often referred to as living among culturally closed communities. Several well-known sects of society fit this description. The current study recruited two subgroups from the Jewish faith as a representative sample for a culturally closed community.

If musical interactions of all parents and care-givers with young children are truly implemented across all societies, then the current study would not have expected to find differences among parents of children below five years of age regardless of colour, spiritual belief, or socio-economic status. In our previous study (Brodsky et al., 2020, 2021) we found Valerio and Reynold's *Children's Music Behavior Inventory* to be just as valid among families residing in Israel as it was for families living in America. One could see such disparity as evidence for incumbent natural behaviours, such as vocalizing, singing, rhyming, rhythmic play, instrument learning, moving, dancing, listening, improvising, and composing music – all of which seem to be embedded in children's daily routines, allowing them to experience self-initiated participation (such as making requests), as well as learning specific sets of social skills (such as taking turns).

The collective verdict of twenty-first century Music Science and Music Education research is that home-based musical interactions with very young children are implemented to endorse the development of motor-cognitive-emotional skills, as well as to integrate elements of music into everyday language and movement, and to interconnect the underpinnings of one's cultural foundations to their person. Certainly, all families – even those living on the fringe of mainstream culture – will have their children's best interest at heart. Then, we might wonder if, at least among those living in (or *alongside*) society, would there be quantitative differences, or rather, if variances do surface would they be qualitative by nature? Nonetheless, we know little about musical behaviours among families who live under inordinate restrictions and limitations. Some of these not only decline from conventional education, employment, grooming and dress, electronic media and digital technologies, as well as popular music genres and culture, but also prohibit their young from hearing female voices, and renounce childlore repertoire and music play-games.

Our first major finding points out, that all children seem to be more alike than different – at least as far as music behaviour is concerned. When looking at the responses of two matched-groups (Orthodox families *vs* families from the general public), all children were reported to behave similarly. Employing *CMBI* as an inventory of behaviours, parents reported observable tasks reflecting normal musical development. That is, the study found that music reflects a common denominator uniting all people despite differences of socioeconomic level, cultural outlook, and religious customs. Even when considering the two Orthodox subgroups (Modern-Orthodox *vs* Ultra-Orthodox), the picture that surfaced was one in which all children were reported to perform in an almost equal quantitative manner, and these levels of behaviours were stable even when compared to a matched group of families from the general public. Nonetheless, all families in Israel, whether or not from the general population or Orthodox community, were always significantly lower on all eight *CMBI* subscales compared American families as reported by Valerio et al. (2012). Despite the vast restrictions of their life-styles, the findings of the current study demonstrate that young Orthodox children up to five years old vocalize, sing songs, move and dance, clap rhythms, listen to pre-recorded musics, request to hear singing and instrumental performance, take turns, initiate, and share with others during musical activity. Like parents of families from the general public, Orthodox parents initiate musical activity including singing, reproducing declamation rhymes, moving and dancing, and playing pre-recorded musics. However, they did report to rarely accompany their children to music classes or to attend concert venues with their children, nor did they accompany themselves on a music instrument when singing to their children – two behaviours reported to occur much more often among American parents.

A second major finding surfaced when comparing between the two Orthodox subgroups themselves. Although no differences surfaced for parental observations of their children's musical

behaviours (*CMBI* Parts I-VII), significant differences surfaced for parental-initiated musical activity (*CMBI* Part VIII). This difference indicated that Modern-Orthodox parents reported to engage in more musical activity with their children in the home setting than parents of the Ultra-Orthodox. Looking at what kinds of musical activities may account for such variances, we found that Modern-Orthodox parents reported they more often sang songs and rhythms, listened to pre-recorded music, read storybooks on topics related to music, and even danced with their children. In addition, Modern-Orthodox parents reported to more often attend afternoon music classes with their children, and to escort them to concerts outside of the home than did Ultra-Orthodox parents; however, both of these activities were still rather scarce, and both significantly less frequent than as reported by American parents. We also found that parents of both Orthodox groups hardly played musical toys and instruments, and seldom composed songs and rhythms. Finally, compared to the Ultra-Orthodox, Modern-Orthodox parents initiated more musical activity of themselves (e.g. *self-engaged* when singing-alone to the child), as well as collaborative musical activity (e.g. *co-engaged* when singing with the child).

In an attempt to explain the variances between the two Orthodox subgroups, we first account for socio-demographic distinctions. According to Miksza (2007), musical engagement is very much influenced by socio-economic status. As reported earlier, the Modern-Orthodox families in the current sample demonstrated higher socio-economic status as based on self-reported levels of education and overall household income. Attaining a higher education may be related to parental practices. Further, a more liberal-minded education seems to be associated with more progressive attitudes regarding child education, endorsements of developmental activities, and child rearing routines. Subsequently, parents with higher education may be more inspired to implement a wider range of approaches and activities including music in the home setting. Moreover, increased household income could have something to do with free time and leisure habits; it is reasonable to consider that greater resources allow parents to devote themselves to 'non-essential' daily practices and behaviours – such as music engagement. Finally, parents with fewer children might have more opportunities to offer individual attention to each child.

Nonetheless, when focusing on religious life-style, we not only see the Ultra-Orthodox as stricter in their beliefs, but perhaps even exceptional in their music practices at home; these may indicate *qualitative* differences that are not necessarily accountable by the inventory. We therefore find that *CMBI* is much more biased towards Western industrialized mainstream societies – than we previously considered (e.g. Brodsky et al., 2020, 2021). As an example, the parents of Ultra-Orthodox families did report to sing less rhythms and songs than Modern-Orthodox parents. Yet, there is every possibility that they not only sing a great deal more than they report, but perhaps sing far more with their children than occurs among the Modern-Orthodox and families from the general public. As Ultra-Orthodox families do not sing rhythmic materials or rhyming texts, do not make up songs or rhythms or rhymes using nonsense syllables or words, do not sing during bath time or when dressing or cleaning up toys or getting ready to go somewhere, and do not often sing along with pre-recorded music, then the item responses of the Ultra-Orthodox parents are notably lower than those of parents from the Modern-Orthodox and the general public. From the point of view of music engagement in the homes, Modern-Orthodox families are more like families of the general public. While Dean (2020) documented that home contexts inspire above 30% of all music activity (such as bath time, play time, nap time, meal times, and bed time), perhaps when one needs to care for six-to-eight children there are strict time limitations to daily routines (including bathing, dressing, eating, and cleaning up); therefore, singing and other music activities might not necessarily be welcomed. Further still, whereas book reading occurs very often among the Ultra-Orthodox, books on topics related to music may be far less than an infrequent occurrence as most texts are exclusively related to topics and content of a spiritual nature. Finally, while there are eurythmic classes in many Ultra-Orthodox kindergartens, afternoon cultural enrichment clubs are not customary, and therefore escorting children to music classes outside of the home is

less common. Finally, attending concerts, conceptualized as no more than a public gathering, is refuted for reasons of modesty unless performances are segregated by gender.

It should also be noted, that as most Ultra-Orthodox families exist within a structure whereby the mother is the selected parent to exit the home to earn an income to sustain the household, many smaller children are cared for by an older female sibling. Although we tend to assume that young children are closely supervised by parents, when parents are not always in close proximity, or when they are attending to other parental duties, some behaviours may be under/over-estimated or even overlooked altogether (Costa-Giomi & Benetti, 2017; Dean, 2020). Therefore, perhaps lower responses for many *CMBI* items (e.g. *I play toy instruments with my child*) may simply reflect the genuine truth that many music activities are undertaken by another family member besides the mother parent-respondent. Hence, *CMBI* may present many limitations of soliciting valid responses from parents demonstrating children's musical behaviour and parent-initiated music activity, especially if the respondents do not easily fit within Westernized mainstream societies. As an example, whereas Dean (2020) documented that at least 5% of children's singing in the home is singing to imaginary listeners (and in this connection she lists imaginary listeners as pets, toys, playmates, and even media), children of families from culturally closed communities also seem to sing to a spiritual listener (and to a much greater extent than 5%, but such an occurrence is not documented) whereby the imagined listener is the Lord himself.

Finally, we recognize several limitations of the current investigation. Foremost, the current sample might seem to be biased by being comprised of significantly more female respondents ($84\%_{\text{Mothers}}$) than male respondents. Nonetheless, such a predisposition was equally found for both subgroups (Modern-Orthodox = $71\%_{\text{Mothers}}$ *vs.* Ultra-Orthodox $98\%_{\text{Mothers}}$). We point out that in our previous study among the general population (Brodsky et al., 2020, 2021) we also found that respondents were significantly more females ($77\%_{\text{Mothers}}$) than males. It is interesting that such a tendency was also found by Valerio et al. (2012) in their American study reporting that 'the majority [of respondents] were Caucasian females' (p. 191). Certainly, working mothers might not always be aware of the daily activities of their children, and hence the results reported by some mothers may not necessarily represent the everyday reality of their children's musical experiences; especially if fathers and/or older siblings spend time with younger children, and perhaps they engage more frequently in musical activities than mothers. Another limitation relates to the fact that members of the Ultra-Orthodox community are less likely to be willing to participate in research studies. Hence, there could be some bias in our sample regarding the parent respondents who agreed to participate; that is, there is a possibility that the respondents were *a priori* more open minded compared to the more average Ultra-Orthodox parent.

In his annotation note describing the background of the *CMBI V.972* study, Brodsky writes:

> We have come to view the use of *CMBI* as a set of parent observable items (i.e. tasks) reflecting normal musical development, that more than anything else, may be indicative of biologically innate human behaviours, which certainly reflect a common denominator uniting all people despite differences of socioeconomic level, cultural outlook, religious custom, and political beliefs. (Brodsky et al., 2020, p. 157)

On the coattails of that study, and considering the findings of the current investigation, more than ever we believe that the *Children's Music Behavior Inventory* illuminates music behaviour as a crucial aspect of children's development and family life; these also come to the surface for families who do not fit into the mainstream, living *along-side* society in culturally closed communities. The similarities found between the general population and Orthodox families seem to imply a more natural evolutionary origin of music. Namely, parent-initiated music engagement as a platform to support early child development and to solidify bonding among familial members.

Notes

1. Within the current context, the term 'general population' indicates a sample of participants exclusively recruited among the general Jewish population of Israel. The Jewish population of Israel in year 2020 represents 74% of

the population (see below). Other groups, such as Israeli Arabs, Bedouins, Christians, Druse, Palestinians, as well as foreign residents living in Israel at the time of data collection, were not recruited to participate in the study.
2. '972' is the international calling (dial) code for Israel.
3. It should be noted that some more liberal-minded residents do partake in religious ceremonies based on ritual practices reflecting a more contemporary level of custom referred to as Reform-Progressive Judaism and the Conservative-'Masorti' Movement.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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