Abstract—Canadian and Japanese 4- and 5-year-old children were asked to create a happy song or a sad song. Approximately 60% of Canadian preschoolers produced a song under these circumstances in contrast to roughly 40% of Japanese preschoolers. Of the Japanese children who produced a song, most simply reproduced a familiar song. By contrast, Canadian children typically included novel words, melodies, or both. The lyrics of Canadian children’s happy songs focused on candy, friends, family, and vigorous physical activity. Their sad lyrics focused on thwarted goals and the absence of family and friends. Their happy melodies showed influences of the major mode, along with dotted or syncopated rhythms, whereas their sad songs showed suppressed melodic range and contour. Japanese children made much less use of emotion words or emotion-evoking events in their happy or sad songs. We discuss socialization and early music education differences across cultures that may contribute to the observed differences.

Keywords—invented song, emotion, preschool children, cross-cultural

Although there has been considerable investigation of preschool children’s singing of invented and standard songs (e.g., Campbell, 1998; Davidson, 1985; Davidson, McKernon, & Gardner, 1981; Davidson & Scripp, 1994; Dowling, 1984; Kelley & Sutton-Smith, 1987; McKernon, 1979; Moog, 1968/1976; Moorhead & Pond, 1941, 1942; Omi, 1994), relatively little is known about the communication of expressive intentions in their singing. In musically oriented homes, mothers often convey information to toddlers in the context of improvised songs, and toddlers respond by joining the “singing conversation” (Kelley & Sutton-Smith, 1987). These sung exchanges are likely to continue beyond toddlerhood, with mother and child taking turns at improvising song variations (Umezawa, 1990, cited in Adachi, 1994).

Young children generate idiosyncratic songs for communicative purposes such as stopping a baby brother from touching food (Omi, 1994). These spontaneous songs, or “musical utterances” (Campbell, 1998, p. 67), often trigger improvised musical exchanges among friends, who repeat, modify, and extend the melodic motif while transmitting ideas and messages to each other (Campbell, 1998, pp. 28-30; Whitman, 2001). Although preschoolers successfully communicate verbal instructions in their invented songs, it is unclear whether they can create songs to convey distinct emotional messages.

Much research on the communication of emotion in music has focused on musicians’ contrastive performances (e.g., happy, sad) of the same piece of music or on listeners’ perception of the intended emotion (Gabrielsson & Juslin, 1996; Juslin, 1997; Juslin & Sloboda, 2001; Ohgushi & Hattori, 1996; Senju & Ohgushi, 1987). By contrast, relatively few studies have explored how musically untrained adults (Yamasaki, 2002) and children communicate emotion in their musical performances (Adachi, 2000; Adachi & Trehub, 1998, 1999a; Umemoto, 1994; Yamasaki, 2006). Such research has indicated that untrained Japanese adults and young children (5- to 6-year-olds) use variations in loudness and tempo to express happiness, sadness, and anger in their improvised percussion performances.

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In addition to variations in loudness and tempo, Canadian children 4-12 years of age vary pitch level and tone of voice to distinguish happy from sad versions of a familiar song (Adachi & Trehub, 1998).

In their invented songs, Canadian 6- to 12-year-olds express happiness by means of dotted or syncopated rhythms, and they express sadness by means of isochronous rhythms, legato articulation, and affectively negative lyrics (Adachi & Trehub, 1999a, 1999b). Japanese 8- to 10-year-olds vary tempo, loudness, rhythm, and interval size to generate distinctive melodies to go with prescribed happy and sad lyrics, but the melodies generated by 5- and 6-year-olds are unrelated to the emotions expressed in the lyrics (Umemoto, 1999, pp. 56-57).

In the present investigation we sought to ascertain how preschool children use lyrics and melodies to convey happiness and sadness through their invented songs. Although preschoolers seem to be capable of creating songs (Campbell, 1998; Kelley & Sutton-Smith, 1987; McKernon, 1979; Moog, 1968/1976; Moorhead & Pond, 1941, 1942; Omi, 1994), it is unclear whether they can express their emotional intentions consistently or conventionally in such songs. Although Japanese 5- and 6-year-olds failed to use distinctive melodic features for happy and sad lyrics (Umemoto, 1994), the provision of set lyrics may have interfered with their performance. Children in the present study had complete flexibility with the lyrics and melodies of their invented songs.

We explored the expression of emotion in invented songs by preschoolers from Canada (Experiment 1) and Japan (Experiment 2). The focus on North American and Japanese children had the potential to reveal differences arising from contrasting cultural values such as individualism versus collectivism (Stephan, Stephan, Saito, & Barnett, 1998), different display rules and attitudes about self-expression (Pittam, Gallois, Iwawaki, & Kroonenberg, 1995; Safdar et al., 2009), different socialization practices (Abe & Izard, 1999; Hayashi, Karasawa, & Tobin, 2009), and different systems of music education (Adachi & Chino, 2004). In contrast to North American children, who are socialized to value the expression of emotion in public, Japanese children are encouraged to develop robust boundaries between their private and public persona (Barnlund, 1975; Doi, 1986; La Voy et al., 2001). That may be why Japanese children’s figure drawings are less likely to include smiles than those of American children (La Voy et al., 2001). One might also expect more muted musical expressiveness from Japanese preschoolers than from Canadian preschoolers.

**EXPERIMENT 1**

In previous research, 6- to 12-year-old Canadian children created happy and sad songs by manipulating the lyrics and expressive performing style (Adachi & Trehub, 1999b). Their sad songs exhibited more legato articulation than their happy songs regardless of children’s age, sex, or singing ability. Older girls (11- to 12-year-olds) used dotted or syncopated rhythms, and the more proficient singers capitalized on modality (i.e., major for happiness and minor for sadness). To some extent, then, school-aged Canadian children made use of emotional expressive devices that are conventional in Western art music (e.g., Juslin, 1997, 2001). Our goal in the present experiment was to examine younger Canadian children’s free expression of happiness and sadness in lyrics and melodies.

**Method**

**Participants**

The participants in the present experiment were part of a larger investigation of the development of expressive singing in Canadian children 4-12 years of age (for details, see Adachi & Trehub, 1998). Although the original sample included 83 Canadian preschoolers 4-5 years of age from middle-class families, technical difficulties reduced the available sample to 66 preschoolers. Of those 66 children, 40 of them, 14 boys ($M = 4.50$ years, $SD = .52$) and 26 girls ($M = 4.42$ years old, $SD = .50$), provided material for detailed auditory analysis in the present study.
Apparatus and Procedure

Testing was conducted in a sound-attenuating room with only the child and a female tester present. To make the room friendly to young children, some color drawings of animal characters were pasted on the wall. VHS recordings were made with a Panasonic VW-1500 camera, and separate digital audio-recordings were made with a Sony TCD-D7 recorder and a Sony ECM-95A microphone. Of the 66 preschoolers, 35 were instructed to make up a happy song and 31 to make up a sad song. To assist them with this task, children were presented with a picture of a rabbit displaying the target emotion, and were asked to describe how the rabbit was feeling and why the rabbit was feeling that way. After children identified the target emotion (i.e., feeling happy or sad), they were asked to make up a happy (or sad) song that would sound just like the way the rabbit was feeling. Substantial encouragement and prompting (but no provision of specific ideas) were given to children who exhibited difficulty with the task. On average, children who completed the task took 2 min or less to do so. By contrast, those who showed initial difficulty generally failed to complete the task despite the encouragement offered.

Content analysis of lyrics

A native speaker of Canadian English who was familiar with children’s songs transcribed the lyrics of each song. These transcriptions were confirmed independently by a second native speaker of English. The following aspects of the lyrics were coded categorically.

1. Type of lyrics. The lyrics were coded as “known” if they reproduced those of an existing song, as “variation” if they consisted of modifications of the lyrics of an existing song, as “original/personal” if the lyrics were original and depicted the child’s everyday experience, and as “original/others” if the original lyrics included make-believe stories or incantations.

2. Positive emotion words. This category was coded “present” if the lyrics contained one or more positive emotion words such as happy, glad, fun, good, laugh, smile, love, like, favorite, delicious, clean, and thank you. Otherwise, it was coded “absent.”

3. Negative emotion words. This category was coded “present” if the lyrics contained one or more negative emotion words such as sad, scary, lonely, alone, bad, angry, hate, disappointed, irritated, cry, sorry, and separated. Otherwise, it was coded “absent.”

4. Positive emotion-evoking events. This category was coded “present” if the target lyrics contained one or more descriptions of a positive event (e.g., “Everyone wanted to play with him.” “A bunny was eating an ice cream.”). Otherwise, it was coded “absent.”

5. Negative emotion-evoking events. This category was coded “present” if the target lyrics contained one or more descriptions of a negative event (e.g., “He was bullied.” “He could not play with his friends.”). Otherwise, it was coded “absent.”

Inter-rater reliability for each coding category was evaluated by calculating Cohen’s kappa (Siegel & Castellan, Jr., 1988) between the first author and an independent rater who coded five happy and five sad songs (i.e., 25% of songs) that were selected randomly. High reliabilities were confirmed for all coding categories ($\kappa$s = .75-1.0). Coding from the first author was used for statistical analyses.

Content analysis of melodies

Digital recordings of children’s songs were converted to acoustical files by means of Sound Designer II Software (Digidesign). Two music teachers who had experience with young children listened to five happy and five sad songs (i.e., 25% of all songs), confirming that the following categories could be coded reliably ($\kappa$s = .69-1.0). Coding from the first author was used for statistical analyses.

1. Melody type. Each melody was coded as “known” if it was a nearly exact copy of another song that the child knew, “variation” if it was a variation of an existing song, “original rhythm” if its novelty was primarily rhythmic, and “original melody” if it featured original pitch and rhythmic patterns.

2. Modality. Most melodies whose modality was apparent were closer to the major than to the minor mode. A melody with minor influences was coded as “minor.” We also coded melodies as “minor” if they had a flattened or reduced pitch range.
or compressed contour. Melodies were coded as “unclear” if the modality was not readily identifiable or if both modalities were evident.

3. **Rhythm.** A melody was coded as “dotted” if its rhythm sounded more dotted than isochronous, as “isochronous” if it sounded more isochronous than dotted, and as “unclear” if the rhythm was not readily identifiable.

4. **Beat.** Each melody was coded as “regular” if the singer held a relatively steady beat throughout, as “partly regular” if the singer held a relatively steady beat for a portion of the song, and as “irregular” if there was no evidence of a steady beat.

**Results and Discussion**

As noted, 40 of the 66 children (60.6%) produced songs in response to the request for happy or sad songs. Specifically, 20 of 35 children (57.1%) produced happy songs, as requested, with the remaining 15 children producing no song. Moreover, 20 of 31 children (64.5%) produced a sad song in response to that request, with the remaining 11 children producing no song. All analyses were based on the 20 happy and 20 sad songs produced by these children.

**Lyrics**

Regardless of their intended emotion (happy or sad), 36 Canadian preschoolers, or 90% of the sample, produced original lyrics (n = 36). For the songs with original lyrics, 72.5% (n = 29) featured animal characters such as a bunny (suggested by the picture provided) or dinosaur (original/others) and 17.5% (n = 7) featured personal experiences (original/personal). Only 10% (n = 4) of children used the lyrics of familiar songs, the remaining children creating variations of familiar lyrics or creating entirely novel lyrics. Thus, subsequent analyses of the lyrics included novel lyrics as well as those borrowed from familiar songs.

Positive emotion words (e.g., happy, love, hug, kiss) were used more often in happy songs (n = 8) than in sad songs (n = 2), $\chi^2(1, N = 40) = 4.80, p = .03$. Positive emotion-evoking events were also used more frequently in happy (n = 6) than in sad (n = 1) songs, $\chi^2(1, N = 40) = 4.33, p = .04$. Negative emotion words (e.g., sad, crying, lonely) appeared exclusively in children’s sad songs (n = 14), $\chi^2(1, N = 40) = 21.54, p < .0001$, but negative emotion-evoking events occurred more frequently in sad (n = 15) than in happy songs (n = 3), $\chi^2(1, N = 40) = 14.55, p < .0001$.

In Adachi and Trehub (1999a), Canadian 6- to 12-year-olds used positive emotion words or positive emotion-evoking events regardless of the intended emotion. For preschoolers in the present study, however, such lyrical devices featured prominently in happy songs. Table 1 depicts examples of emotion-laden themes in the lyrics of preschoolers’ songs. Positive lyrical themes involving candy, cake, or ice cream were significantly more frequent in happy than in sad songs, $\chi^2(1, N = 40) = 11.61, p = .001$. Similarly, actions like hopping, jumping, running, or playing were significantly more frequent in happy than in sad songs, $\chi^2(1, N = 40) = 5.63, p = .018$.

In previous research, death was the prototypical sad theme for older children (Adachi & Trehub, 1999a), but only a single preschooler mentioned death in the present study (Figure 1). Instead, the most typical verbal theme in preschoolers’ sad songs was the blocking of desired actions (i.e., not getting what you wanted), which appeared in half of the sad songs (n = 10) but in none of the happy songs, $\chi^2(1, N = 40) = 13.33, p < .0001$. Although friends, family, and related words (Mom, Dad) occurred in both happy and sad songs, their usage differed substantially. For example, happy songs featured family and friends together with the main character (Figure 2), $\chi^2(1, N = 40) = 3.75, p = .05$, in contrast to sad songs, which included no family or no friends, $\chi^2(1, N = 40) = 2.06, p = .15$ (see Table 1).

Just as older children sometimes convey happiness or sadness through repetition of emotion words in their invented songs (Adachi & Trehub, 1999a), preschoolers did likewise. For example, one 5-year-old girl sang the following: I’m happy, I’m happy. My friends are happy, too. One 5-year-old boy began his sad song with similar word repetition and ended as follows: Sad words, sad words, sad words, sad. Sad words, sad words, sad words, word. The word was crying and the other one was laughing. The other one stole his ball and he started crying. And then he ran.
Some preschool children dramatized the emotional context by means of onomatopoeia and character dialogue: (1) I was sad from all the day. I cry from day to do today. Wah, wah, wah from all the way home... Wah, wah, wah, wah, wah, wah, wah, ... (5-year-old boy); (2) the dinosaurs Rex came and took that toy away. And then the elephant said, 'No way ballface!' And then the door came and slammed... (4-year-old boy). These story-telling strategies, which were used by 18% of the children to express happiness or sadness, were not evident in the invented songs of 6- to 12-year-olds (Adachi & Trehub, 1999a), which suggests that boundaries between songs and stories are not as clear-cut for younger children as for older children.

**Melodies**

The majority of children (75%, n = 30) generated original melodies, with only 25% using familiar melodies, either keeping the entire song (e.g., Barney) intact (10%, n = 4), or borrowing tonal motives (e.g., ABC, Mary had a Little Lamb) for use with original lyrics (15%, n = 6). For children who generated original melodies, most (55%, n = 22) combined original melodic and rhythmic elements, in contrast to a minority of children (20%, n = 8) whose creative emphasis was on rhythm.

Happy melodies exhibited greater influence of the major mode while sad melodies exhibited greater influence of the minor mode, including reduced pitch range and compressed contour, $\chi^2(2, N = 40) = 16.67, p < .0001$ (Figure 3). Happy melodies tended to include more dotted rhythms than isochronous rhythms, with the reverse for sad melodies, $\chi^2(2, N = 40) = 3.89, p = .14$ (Figure 4). This tendency was confirmed statistically when rhythmically unclear songs were removed from the analysis, $\chi^2(1, N = 38) = 3.89, p = .049$. The intended emotion was unrelated to beat regularity: 27.5% of songs (n = 11) were primarily regular, 37.5% (n = 15) were partially regular, and 35% (n = 14) were irregular.

In previous research with older Canadian children (Adachi & Trehub, 1999a, 1999b), happy songs showed more influence of the major mode than did sad ones, but sad songs exhibited no such

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**Table 1**

Emotion themes in Canadian preschool children’s lyrics

<table>
<thead>
<tr>
<th>Theme</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy lyrics</td>
<td></td>
</tr>
<tr>
<td>candy, desserts</td>
<td><em>… One day, he gave me a chocolate bar too…</em></td>
</tr>
<tr>
<td></td>
<td><em>… it saw ice cream shop…</em></td>
</tr>
<tr>
<td>hopping, jumping, running, playing</td>
<td><em>… Happy bunny running in the forest…</em></td>
</tr>
<tr>
<td></td>
<td><em>… He hopped all the way to school…</em></td>
</tr>
<tr>
<td></td>
<td><em>Bunny rabbit, jump jump…</em></td>
</tr>
<tr>
<td></td>
<td><em>The dinosaur went out to play.</em></td>
</tr>
<tr>
<td>friends, family</td>
<td><em>… Bunny rabbit, bunny ba.. maked a new friend…</em></td>
</tr>
<tr>
<td></td>
<td><em>… ’N I know that we are a family… I love you, mom,…</em></td>
</tr>
<tr>
<td>Sad lyrics</td>
<td></td>
</tr>
<tr>
<td>no friends, no family</td>
<td><em>… I have no friends, that’s why I’m lonely…</em></td>
</tr>
<tr>
<td></td>
<td><em>… She can’t find her mom or dad or brother or sister…</em></td>
</tr>
<tr>
<td>blocking of desired actions/hope</td>
<td><em>… She was so sad because she didn’t get what she wants…</em></td>
</tr>
</tbody>
</table>
Figure 1. A sad song invented by a 5-year-old girl. The score, transcribed by the first author, was checked with a few musicians.

Figure 2. A happy song invented by a 4-year-old girl. The score, transcribed by the first author, was checked with a few musicians.
differentiation. In fact, only good 11- and 12-year-old singers clearly differentiated modality across happy and sad songs. Canadian preschoolers in the present study reduced the size of intervals or compressed the melodic contour for their sad songs, but there was little evidence that the minor mode was used consistently to convey sadness (see Figure 1). Twelve (30%) of the preschoolers’ songs were characterized by unclear mode. In four instances, the songs (two happy, two sad) sounded more like spoken narrations than like singing, resulting in unclear rhythm. A number of other instances sounded like chant (Moorhead & Pond, 1941) or rap, lacking a sense of melody but possessing a clear sense of rhythm.

**EXPERIMENT 2**

The results of Experiment 1 revealed that many preschoolers could use their singing to communicate happiness and sadness. As was the case for older Canadian children (Adachi & Trehub, 1999a), the intended emotion of Canadian preschoolers’ songs was reflected in their lyrics. However, the predominant association of sad feelings with thwarted goals (e.g., “having no sweets”) and isolation from family or friends was in marked contrast to the predominant death theme of older children’s sad songs (Adachi & Trehub, 1999a).

Canadian preschoolers incorporated emotionally appropriate words and events in their happy and sad lyrics. In addition, the use of rhythmic and melodic features differentiated their happy from their sad intentions. The purpose of the present experiment was to examine whether young Japanese preschoolers would respond in a similar manner.

**Method**

**Participants**

The participants in the present experiment were part of large cross-cultural investigations of children’s singing (e.g., Adachi, 2000). The present sample included 34 middle-class Japanese preschoolers 4 to 6 years of age. Only 15 of these 34 children, or 44.1%, produced materials for auditory analysis—7 boys ($M = 4.43$ years old, $SD = .54$) and 8 girls ($M = 4.63$ years old, $SD = .74$).

**Apparatus and Procedure**

Recordings were done in a quiet, unfamiliar room at the children’s preschool by means of a Sony DCR-PC1 digital video camera, a Sony TCD-D8 digital audio recorder, and a Sony ECM-MS957 microphone. The room was decorated with color drawings similar to those used in Experiment 1. Half of 34 children in the sample were asked to make up a happy song and half were asked to make up a sad song. All of the instructions, pictorial props, encouragement, and prompts were similar to those used in Experiment 1.
Content analysis of lyrics

The lyrics of each song were transcribed by a native Japanese speaker and confirmed by means of independent transcriptions of another native Japanese speaker. The coding categories for the lyrics from Experiment 1 were used in the present experiment. Inter-rater reliability for each coding category was evaluated by calculating Cohen’s kappa (Siegel & Castellan, Jr., 1988) between the first author and the independent rater who coded each category for three happy songs and two sad songs (i.e., 33% of all the lyrics) selected randomly. High reliabilities were confirmed for all coding categories (\(\kappa = .90–1.0\)), and the first author’s coding was used for statistical analyses.

Content analysis of melodies

Digital recordings of children’s songs were converted to acoustical files by means of Protools Software (Digidesign). Two musicians who were familiar with young children’s singing listened to three happy and two sad tunes (i.e., 33% of all tunes) and determined that the categories from Experiment 1 could be coded reliably (\(\kappa = .65-1.0\)). The first author’s coding was used for statistical analyses.

Results and Discussion

Overall, only 44.1% (15 of 34) of Japanese preschoolers produced any kind of song in response to the request for a made-up song that expressed happiness or sadness, with compliance being considerably higher for happy songs (11 of 17, or 64.5%) than for sad songs (4 of 17, or 23.5%). The proportion of sad songs produced by Japanese children (23.5%) differed significantly from the proportion produced by Canadian children (20 of 31, 64.5%), \(\chi^2(1, N = 48) = 7.38, p = .007\), but the proportion of happy songs for Japanese (64.5%) and Canadian children (20 of 35, or 57.1%) did not differ, \(\chi^2(1, N = 52) = 0.60, p = .272\).

Of those Japanese children who produced happy or sad songs, only 20% (\(n = 3\)) created original lyrics (original/others), which consisted of story-like phrases (e.g., portraying a sparrow or bunny) or simple word repetition (e.g., “Micky”). The remaining children (80%, \(n = 12\)) used the lyrics of familiar songs, with a small modification in one case. Japanese children’s tendency to use the lyrics of familiar songs rather than creating new lyrics approached conventional levels of significance, \(\chi^2(1, N = 15) = 3.07, p = .08\). The distribution of original lyrics differed across emotion categories, with 2 of the 4 sad songs and only 1 of the 11 happy songs having original lyrics. This outcome contrasts markedly with the 90% incidence of original lyrics produced by Canadian children for their happy and sad songs.

Unlike Canadian preschoolers’ songs, neither positive emotion words (e.g., daisuki [love], omoshirō [seemingly having fun], kirei [pretty], oishii [delicious]) nor positive emotion-evoking events (e.g., yume o kanaetekureru [a dream comes true], okashi o mitsuketa [found candy]) were reliably associated with happy intentions. However, none of the happy songs had negative emotion words, \(\chi^2(1, N = 11) = 11.00, p = .0009\), or negative events, \(\chi^2(1, N = 11) = 11.00, p = .0009\). By contrast, negative emotion words (e.g., kanashii [sad], naiteita [crying]) or events (e.g., “Suzume-chan ga tobenakunatte imashita [A sparrow could not fly]”) were observed in the sad songs. The differential use of negative lyrics was statistically significant for words, \(\chi^2(1, N = 15) = 6.35, p = .012\), and approached conventional levels of significance for events, \(\chi^2(1, N = 15) = 2.95, p = .086\). Thus, Japanese preschoolers’ use of expressive verbal cues was apparent for sad songs, but not for happy songs, unlike Canadian preschoolers in Experiment 1, who used positive verbal cues for happy songs and negative verbal cues for sad songs.

Despite the use of similar visual prompts in the Canadian and Japanese contexts, the words “candy” and “playing” appeared consistently in Canadian preschoolers’ happy songs but in only 2 of the 11 Japanese preschoolers’ happy songs, where they were simply adopted from existing songs. Canadian preschoolers’ typical negative themes, such as the blocking of desired actions or the absence of family or friends, had no counterpart in Japanese preschoolers’ sad songs, which may be due to the small number of original lyrics produced by the Japanese sample.
Three children in the present experiment selected “Suzume no Kyodai [Sparrow Brothers],” as their happy song despite its lyrical theme of blocked hope, which pervaded the sad songs of Canadian preschoolers. In the song, the sparrow brothers converse: “What shall we become when we grow up?’ ‘I will become a hawk!’ ‘I will become a penguin!’ Chirp, chirp, chirp, ... But, even when they grow up [after all], sparrows are sparrows. Chirp, chirp.” This song, which was popular across age groups in Japan at the time of data collection (1999), had musical features associated with happiness such as the major mode and occasional staccato articulation. The song can be viewed as having conflicting cues to emotion because of blocked verbal desire (implying sadness) and happy melodic features. It is unclear whether the lyrics were noticeable and comprehensible to young listeners. Although there are suggestions that young children focus on verbal rather than melodic features when evaluating a speaker’s or singer’s feelings (Morton & Trehub, 2001, 2007), that may not always be the case. For example, few children or adults express concern about the plight of the three blind mice in the well-known children’s song (e.g., “She cut off their tails with a carving knife. Did you ever see such a sight in your life?”) It is difficult to know whether singers of the sparrow song in the present experiment chose it because of melodic features typically associated with positive affect, pleasant memories associated with the song, or the song’s popularity and consequent accessibility.

As they did with the lyrics, 80% (n = 12) of Japanese preschoolers used melodies from familiar songs. Only 20% (n = 3) generated original melodies, in contrast to 75% of the Canadian children. Comparing across emotion categories, 2 out of the 4 sad melodies produced by Japanese children were original, in contrast to only 1 of the 11 happy melodies. None of the Japanese children modified the melodic features of familiar songs, unlike their Canadian counterparts. Japanese children’s tendency to use familiar melodies rather than generating entirely new melodies or engaging in improvisation with familiar melodies approached significance, \(\chi^2(1, N = 15) = 3.07, p = .08\).

The Japanese children’s happy melodies exhibited influences of the major mode (n = 8) or unclear modality (n = 3), \(\chi^2(2, N = 11) = 8.91, p = .012\), but no modal tendency was evident for their sad melodies. Unlike Canadian preschoolers’ songs in Experiment 1, Japanese preschoolers showed no differential use of rhythm across happy and sad melodies. Rather, the rhythms of Japanese preschoolers’ happy melodies sounded more isochronous than dotted or unclear, \(\chi^2(2, N = 11) = 12.18, p = .002\), quite the opposite of that observed with Canadian preschoolers.

**General Discussion**

The present study revealed Canadian and Japanese children’s ability to express feelings of happiness and sadness in their singing. However, their approach to the challenge of inventing an emotionally expressive song was starkly different. In response to requests to create a happy or sad song, over 60% of Canadian preschoolers produced some kind of song in contrast to roughly 44% of Japanese children. Although Canadian and Japanese children were similar in the proportion of happy songs produced, Japanese children produced a substantially smaller proportion of sad songs. Most Canadian preschoolers expressed their emotional intentions by means of invented songs featuring novel lyrics, melodies, or both, but Japanese preschoolers did so largely by means of familiar melodies and lyrics.

What accounts for Japanese children’s reluctance to produce sad songs and their limited creativity in the context of expressive singing? Although Japanese preschoolers are encouraged to be sensitive to the feelings and needs of others, there is less encouragement for expressing their feelings, especially negative ones, than is the case for American children (Hayashi et al., 2009; Yogo & Onoue, 1998; Zahn-Waxler, Friedman, Cole, Mizuta, & Hiruma, 1996). Japanese schoolchildren, for example, show less emotional expressiveness in their drawings of human figures than do American schoolchildren (La Voy et al., 2001). Japanese preference for restraint in the expression of strong emotions, even for positive emotions, remains evident in adulthood (Safdar et al., 2009). Moreover, although Japanese children are more compliant than American children in the early
years of elementary school, tolerance for noncompliance at the preschool level seems to be greater in Japan than in North America (Abe & Izard, 1999). Finally, Japanese children’s inclination to sing familiar songs coupled with the prevalence of happy songs in the children’s repertoire may have made noncompliance seem like a suitable option. In short, a variety of factors could have contributed, separately or in combination, to the difference in complying with the request to create happy or sad songs.

The frequent use of invented songs by Canadian preschoolers and their infrequent use by Japanese preschoolers raise the possibility of differences in musical creativity favoring young Canadian children. When Japanese first graders in a previous study were asked to make up a happy or sad song, 70% of them sang familiar songs (Adachi, 2001). Japanese preschoolers’ and first graders’ reliance on songs in their repertoire may be influenced by preschool curricula, which feature daily singing of familiar songs in the same key with piano accompaniment (Trehub, Schellenberg, & Nakata, 2008) and weekly learning of new songs but no creative music-making (Adachi, 2001, in press). These experiences may carry the implicit message that music is something to be learned rather than created, interfering, perhaps, with the imaginative or divergent thinking that underlies creative music-making (Adachi & Chino, 2004). By contrast, musical utterances shared among playmates in North America (Campbell, 1998) and Australia (Whiteman, 2001) as well as rhymes and chants observed in playgrounds throughout the world (Opie & Opie, 1973) have their roots in free play and freely expressed exuberance. Such unbounded activity may enhance creative music-making both on and off the playground.

Even though Japanese preschoolers also engage in exuberant playground singing, almost all of the songs produced are either standard songs with Western tonal influence or traditional songs with Japanese tonal influences (warabe-uta) that were invented by previous generations of Japanese children, with some improvisation of word rhythms (Fujita, 1997, 2000, 2001, 2002; Fujita & Nakakura, 1996; Ogawa & Imagawa, 2008). This is in sharp contrast to the spontaneous songs observed in an Australian daycare center, the majority of which are invented (Whiteman, 2001). When creative music-making is introduced to the elementary-school curriculum in Japan (Adachi & Chino, 2004), it unleashes the creative musical potential of Japanese children. By the fourth grade, 75% of those Japanese children provide original songs when asked to do so (Adachi, 2000, 2001).

Nevertheless, there are suggestions that the creative potential of Asian individuals is inhibited by prevailing cultural values of submissive individuality and conformance to group ideals (Ng, 2001). The idealization of conformance is evident in the well-known Japanese proverb, “the nail that sticks up gets hammered down.” Children are exposed to these cultural values in a variety of ways, including the lyrics of popular songs such as “Sparrow Brothers.” Being correct or doing the right thing in the eyes of adults may also be implicated (Ng, 2001). In that respect, choosing a familiar song would be less risky than creating one that might be considered inappropriate or substandard.

Cultural pressures for conformity can be countered, to some extent, by settings that nurture individuality or free expression. For example, Japanese first-graders who attend daycare programs that emphasize individual expression invent happy or sad songs twice as frequently as their peers in standard daycare settings (Adachi, 2004). In any case, the net result of Canadian preschoolers’ predominant use of invented songs and Japanese preschoolers’ predominant use of familiar songs was that Canadian children’s productions provided greater insight into their developing expressive abilities.

On the surface, the happy songs of Canadian preschoolers showed conventional musical influences such as the major mode and dotted or syncopated rhythms. While it is tempting to attribute implicit understanding of modality to preschoolers because of influences of the major mode on happy songs and minor mode in the sad songs, it is premature to do so. For one thing, the categories of major and minor were defined very broadly for use with a sample of preschoolers. Moreover, the sad melodies were characterized primarily by
reduced interval size or compressed contour rather than specific features of the minor mode. Adults also use compressed contour to convey sadness in their speech (Scherer, 1981), and Canadian children do so in their sad renditions of familiar songs (Adachi & Trehub, 1998). Finally, children do not associate major and minor modes with happy and sad emotions until about 6 years of age (Dalla Bella, Peretz, Rousseau, & Gosselin, 2001). With respect to timing, children’s differential use of dotted or syncopated rhythms for happy contexts may reflect associations between specific actions (e.g., skipping, jumping, dancing) and positive mood.

The style of Canadian preschoolers’ invented songs ranged from storytelling-like to highly musical. For example, the happy song of one 4-year-old (Figure 2) featured the major mode along with dotted or syncopated rhythms and affectively positive lyrics. The sad song of one 5-year-old (Figure 1) manipulated modality from major to minor as the final theme of death was introduced. For the most part, however, sad songs featured compressed contours and affectively negative lyrics. In general, the melodies of happy and sad songs were integrated with the lyrics and exhibited some expressive devices characteristic of Western art music.

The lyrics of Canadian preschoolers’ invented songs featured typical everyday experiences, much like those that appear in their stories (Saarni, 1999). In contrast to death as the primary sad theme for 6- to 12-year-old Canadian singers (Adachi & Trehub, 1999a), the primary sad theme of Canadian preschool singers was absent friends or family. Interestingly, happy themes were more consistent in preschoolers’ lyrics than in those of older children (Adachi & Trehub, 1999a), which may reflect older children’s increasing experience and verbal fluency.

Japanese preschoolers’ overwhelming production of familiar songs (80%) rather than original songs made it difficult to assess their developing expressiveness. The features observed in their lyrics and melodies largely reflected the practices of composers and popular performers rather than the children’s own expressive abilities. Perhaps it is not surprising, then, that child-like emotional themes were largely absent from the lyrics.

Performances in a storytelling (i.e., speech-like) manner were uncommon both for Canadian and Japanese preschoolers, in contrast to the higher incidence reported by Umemoto (1999). Perhaps the necessity of generating melodies for prescribed texts in Umemoto’s study increased the prominence of the lyrics, promoting spoken narration.

In sum, the present study revealed that preschoolers are capable of expressing happy and sad intentions by means of singing, either by inventing songs, as Canadian children did, or by performing familiar songs, as Japanese children did. It remains to be determined whether the emotional intentions of such invented songs are interpretable to child and adult audiences. It would also be of interest to determine whether preschool children who fail to generate novel songs exhibit comparable inhibition in other creative realms such as drawing, fantasy play, and dancing.

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