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Children's spontaneous vocalisations during play: aesthetic dimensions

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This paper explores the phenomenon of spontaneous vocalisations in the self-chosen, unstructured outdoor play of children aged 3–12. Spontaneous vocalisations encompass the whole range of children's unprompted, natural, expressive vocal soundings beyond spoken language. Non-participant observations at childcare centres and on elementary school playgrounds anchor this investigation into the nature and extent of children's spontaneous vocalising, grounded in scholarship that establishes these musical expressions as socially embedded and culturally contingent. Previous research has usually considered these ubiquitous playground soundings from a functional standpoint. Our project examines the potential of applying Dissanayake's artification hypothesis, specifically her five affective aesthetic devices, to examples of children's vocalisations to make tangible the artistry inherent in these spontaneous soundings. Pedagogical implications are considered.

Keywords: spontaneous vocalisations; children's play; playgrounds; speech-singing continuum; artification hypothesis

Our research investigates children's spontaneous musicking, exploring the musical behaviours of children (aged 3–12) during self-directed play. We have been struck, during two years of field work at childcare centres and on school playgrounds, by the ubiquity of vocalisation during play. These 'musical utterances' (Campbell 2010, 97), which originate in mother–infant communicative interactions and in the 'vocal scribbles and meanders' (Dissanayake 2000, 182) that babies and toddlers universally create, are almost always part of multimodal expressions involving movement, gesture and speech as well as vocables, and are used to express emotions, to make meaning, to communicate and to initiate or extend social connection. They are also usually ignored by the adults who share children's play spaces.

Ellen Dissanayake, whose scholarship draws from such disciplines as ethology, evolutionary psychology and socio-biology, evolutionary theory, developmental psychology, neuroscience, cognitive science, physical and cultural anthropology, aesthetics and cultural history, proposed that the arts, or 'art(ifying)' (2011, 66) are behaviours for 'making ordinary experiences extraordinary'. This notion of arts as doings rather than as artefacts aligns perfectly with Small's (1998) musicking theory,

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which he arrived at through different scholarly routes: sociology, philosophy and education.

Dissanayake (2000, 2001, 2008, 2009a, 2009b, 2009c, 2011) posited an evolutionary path for arts-making that began with mother–infant interactions. These universally practised 'temporally organized communicative exchanges' (2011, 55) became 'a means of coordinating and expressing emotional states of *mutuality* between mothers and infants' (2000, 7), facilitating 'the acquisition of the human cultural way of life'. Dissanayake characterised these 'temporally organized expressive vocalisations and movements' (2009a, 534) of mother–infant communication – communicative musicality in Malloch and Trevarthen's (2009) terms – as 'proto-aesthetic' because the interactions, while spontaneous, employ such aesthetic devices as patterning, repeating, exaggerating, elaborating and manipulating expectations. These devices are exactly those used by artists in all media to attract, sustain and shape the attention and responses of their audiences (Dissanayake 2011, 61).

Over time our ancestors developed systems of ceremonial rituals which copied essential features, or 'aesthetic predispositions' (2011, 57) of those innate mother–baby interactions – rituals were (and are) playful, improvised acts used 'to gain attention, guide emotions and reinforce memory' (2000, 142). These formalised, multimodal, synchronised moves became emotionally powerful vehicles for human connection and collectivity. Dissanayake (2008) argued that:

> ritual participation should be thought of as 'arts participation.' That is, I suggest that emotional/cognitive change and structuring occur, as in mother-infant interactions, through participation with others in sequences of exaggerated and formalized, dynamic, multimodally-presented, emotionally-evocative kinesic, visual, and vocal behaviors – *i.e.*, through the temporal arts. Simply participating in coordinated activity with others requires behavioral (neuromotor) control that can produce a feeling of emotional and cognitive control as well as engendering and sustaining affinitive emotion and accord among members of a group. (180)

Dissanayake's work offers a theoretical grounding for our analysis of children's spontaneous vocalisations, as well as providing a specific analytical tool, as we will illustrate.

We situate our examination of children's spontaneous vocalisations within scholarship that establishes the social nature of children's musicking. We describe and analyse examples of children's vocalisations during play and we ponder implications for music educators.

Children's musicking as sociocultural activity

The sociological turn in music scholarship – exemplified in such work as Small's (1998) exploration of musicking as a social doing, and DeNora's (2000) investigation of how people use music as a mood regulator, a social mediator and a tool for identity work – has created an environment where humans' everyday musical behaviours have become worthy of attention and respect.

Children's self-chosen music-making has received increased scholarly consideration since the publication of Campbell's influential *Songs in Their Heads* (1998, 2010). Campbell's research revealed that children's multiple uses of music are remarkably similar to those uncovered by DeNora with adult participants.

Marsh's (2008) international study of musical games on the playground further enriches our understanding of the socially embedded and culturally contingent nature of children's self-initiated musicking.

Music education scholars who purposefully examine children's spontaneous musicking include Marsh and Young (2006), who noted that music educators can learn much about children's musical competencies, interests and development through attending to and respecting their musical play. Young (2006, 2009) considered the limitations arising from adherence to a performance model of music education in early childhood. By emphasising 'singing' as a stand-alone experience practitioners often miss the naturally multimodal way that children musick, holistically incorporating movement, gesture, language play and dramatic explorations to make sense of their personal and social worlds. Young called for a broader conception of children's musicking, or 'musical childhoods' (2009, 703), grounded in multidisciplinary theoretical understandings. Similarly, McCarthy (2010) suggested that music education researchers explore 'children's musical cultures' (1) holistically – taking account of the social and cultural embeddedness of children's varied musical practices and the interrelationships among those practices. It is within this conception of children's musicking as a situated, social practice that we examine the specific phenomenon of spontaneous vocalisations.

Spontaneous vocalisations

By spontaneous vocalisations we mean the whole range of children's unprompted, natural, expressive vocal soundings beyond spoken language. This vocalising includes rhythmic speech, non-verbal vocalising and singing with or without languaged meaning; these occur both separately and in various combinations. A spontaneous vocalisation is usually part of a multimodal expressive package that combines other temporal modes such as gaze, gesture and movement. Children's vocalisations may be newly improvised expressions or inventive reworkings of pre-existing material, or a mixture of the two. They may remain as fragmentary expressions or they may be extended into longer forms which may or may not feature regularised structures influenced by chants and songs from childlore and popular culture. Some vocalisations are personal and solitary while others are intentionally social; both carry non-linguistic, emotional meaning whether or not they convey linguistic meaning. These spontaneous vocalisations are, Campbell (2010) asserted, musical, 'whether the child intends [them] as music or not' (216).

In addition to Campbell's rich exploration of children's spontaneous vocalisations, several other music education researchers have examined these vocalised soundings from both musical and social perspectives. Young (2002) viewed spontaneous vocalisations as 'borderline speech-music forms' (46) and emphasised their situated nature within complex play scenarios. Young distinguished six categories of utterances with two- and three-year-olds: free-flow vocalisation, chanting and intoning, reworkings of known songs, movement vocalising, vocalising to animate and vocalising actual sounds. We found examples of all of these categories of vocal soundings in school-aged children's play as well.

Lum and Campbell (2007) investigated the self-initiated music-making of children in Grades 1–3 (aged five to eight) at one elementary school over a six-month period. As part of their exploration of children's everyday musicking they

described spontaneous vocalisations – speech-inflected rhythmic play, some of which utilised rhythmic syncopations that adults would consider sophisticated; strongly metric counting and chanting that accelerated in speed; snatches of melodic utterances that featured everything from the descending *sol-mi* interval to diatonic tone sets of an octave or more, often sung in non-symmetric, recitative-like lines that last the length of a breath, and pastiches of new and pre-existing sound material, which exhibited both truncations and extensions of phrases. Lum and Campbell's interpretation of children's self-chosen musicking as 'an unfolding expressive process' (31) echoes Young's (2005) claim that children's spontaneous musicking is an active process of social interaction, existing not as pre-formed *music* in individual minds, but as dynamic, evolving and transforming communication 'continuously recreated in action' (284). These observations are borne out in our fieldwork.

Whiteman (2009) analysed 443 spontaneous songs sung by eight preschoolers over a three-year period. Three hundred and sixty-three of these songs were improvised, and so fall within our notion of 'spontaneous vocalisation'. Whiteman's detailed musical analysis indicated that, rhythmically, children incorporated more metrical qualities as they grew. Melodically, children almost always chose skip-type contours as opposed to stepwise, and the contours exhibited a wide variety of patterns. While children used a wider range of melodic materials than previous studies had found (e.g. a range of G_1–C^2 and tone sets with as many as 19 semitones), individual children did not increase their chosen melodic ranges as they grew over the three years of the study. In terms of phrase organisation, Whiteman noted that children displayed a 'somewhat well-developed sense of Western musical structure' (54), with the ends of improvised songs coinciding with 'the end of a phrase in Western tonal terms' (55).

Whiteman (2009) employed Bjorkvold's (1989) functional model of singing during play, which identified three functions of spontaneous vocalisation: sound play, musical speech acts and accompaniment to other activity. From the hundreds of spontaneous vocalisations we heard and notated and in some cases video-recorded we recognise the validity of these three categories: they do capture various ways that children use their spontaneous vocalisations. And yet, we found many vocalisations that defy a single functional category. Some may start out as solitary vocal play, but then get taken up by a peer and extended into a dramatic exchange. Other vocalisations may emerge from a phrase or fragment of a known song that a child throws out during play. We are also intrigued by the notion of *mood contagion*, which Juslin (2005) explained is the phenomenon of catching the *emotions* of others 'when seeing their facial expressions or hearing their vocal expressions' (102). This seems an apt explanation of what we often witnessed: an energetic wordless vocal swoop would be taken up, mimetically, polyphonically or competitively, by others. We have documented numerous instances where this contagion, in the voices and bodies of girls, aged 8–11, morphed into spirited screaming matches, each vocalist trying to outdo her peers in making the vocalise higher, longer and louder. The transgressive nature of screaming appeared to contribute additional motivation.

In Knudsen's (2008) analysis of improvised vocalisations by children aged three to seven, he confirmed the 'astonishing rhythmic and melodic complexities, executed effortlessly by children with ease and nonchalance' (290) that other researchers have documented. Knudsen theorised improvised vocalisations from three vantage points:

- as part of children's musical learning process, viewed from a wide experiential and social perspective;
- as a paralanguage essential to the child's social and communicative competence – the child sends and receives precise semiotic meaning through musical utterances, manipulating rhythm, pitch, timbre and dynamics to enrich the meaning of the vocal communication, often to negotiate power; and
- as a 'technology of the self', following DeNora (2000). When children vocally improvise on their own they are trying to 'generate or interact with an emotional experience' (292), instances of the Foucauldian idea that we use various cultural tools to achieve and maintain emotional states and self-recognition.

Knudsen's three readings of children's improvised vocalisations resonate strongly for us as we examine the hundreds of examples we have documented.

Children's vocalisations throughout childhood

Spontaneous vocalising accounts for much of the din one associates with a playground where large numbers of children are directing their own play. The focus of much of the literature devoted to children's spontaneous vocalisation is on preschool children (e.g. Young 2002; Mang 2005; Knudsen 2008; Whiteman 2009) which may create the impression that this vocal play is the providence of early childhood only. Developmental models of singing acquisition (e.g. Stadler Elmer 2011) also may inadvertently imply that vocal play is exclusively an early childhood phenomenon.

Extensive psychological research into mother–infant vocal communication, or 'melodic and rhythmic co-creativity' (Malloch and Trevarthen 2009, 4), has led to the formulation of the theory of *communicative musicality* – the notion of an innate human ability to communicate with others by means of temporal narratives involving rhythm, tonal qualities and a sense of sharing time, or attunement. This work may further the misconception that spontaneous vocalising is strictly a baby and preschooler behaviour. Our research on school playgrounds confirms that vocal play does not stop when children enter school: we found it to be prevalent across ages 3–12, although some of the actual sounds change, as the play changes, with age.

Research method

We are in the third year of fieldwork focusing on naturalistic observation of children during non-structured play times at both childcare centres and elementary schools in two Canadian provinces. Our purpose is to better understand the musical qualities within children's communication practices. Following research protocols from our University ethics board and from early childhood education centres and school districts' research review committees we conduct non-participant observations during outdoor play, and sometimes engage children in conversations about their play. In this paper we report on visits to nine elementary school sites and five childcare centres. The schools, representing urban, suburban and rural settings, serve Kindergarten – Grade 6 students, aged 5–12, and the childcare centres serve children aged three to five. To date we have made a total of 183 school visits, each 15–30

minutes in length, resulting in over 86 hours of observation. We have documented over 130 hours of play observations at the childcare centres, where we had permission to audio- and video-record as well.

A qualitative approach underpins our research, and this paper reports specifically on observations and analysis we derive from a non-participant observer stance (Liu and Maitlis 2010). Data collection methods included non-participant observation, researchers' field notes during all site visits, researchers' logs for reflection and initial interpretation of data, and either video or audio recordings at the childcare centres. The research team met regularly to conduct data interpretation and analysis. We proceeded inductively, comparing many collected examples by describing the sounds and pondering their apparent uses. After rejecting several analytical approaches (functions of vocalisations, vocalisations as part of a speech to song continuum and discrete examination of time, pitch, timbre and structure) we determined that Dissanayake's (2000, 2011) aesthetic devices, described below, enabled us to probe the musical aspects that drew us to these vocalisations, without implying Western music categorisations. Two undergraduate research assistants, with their more recent playground memories and with ears attuned to current pop culture, contributed valuable insights to data collection and analysis.

We echo Richards' (2013) description of the realities of collecting data on children's playgrounds, 'sites where the number of fast-moving, disparate and often opaque activities unfolding simultaneously can significantly challenge the intention to observe, record, and classify' (68). Recording children's spontaneous vocalisations in these spaces of constant movement and sound required us to be nimble and flexible in our approach, so as not to interrupt or influence play in progress, and to accept that we were hearing and seeing only a fraction of the action.

Analytical lens: Dissanayake's five aesthetic devices

We introduced above Dissanayake's ethology-based theory that all humans have an evolved capacity to artify, by means of 'aesthetic operations' (2009b, 156). Dissanayake suggested that these operations, or devices, are at the root of all human communication and are universally evident in mother–baby paralinguistic interactions. These five devices – *patterning, repetition, elaboration, exaggeration, and manipulation of expectation* – are formal structuring principles and expressive features used in visual and temporal arts to 'attract attention, sustain interest, coordinate group effort, and provide emotional excitement and satisfaction' (2009b, 156). We found that analysing children's spontaneous vocalisations with Dissanayake's aesthetic devices enabled us to embrace the extraordinary variety of children's vocal soundings, from fragment to extended aria, through a single analytic lens.[1] We embrace the comprehensiveness of this analytical framework to consider the vocalisations both multimodally and cross-culturally. We believe that it complements other approaches to analysing children's musical play, such as Campbell's (2010) use of Merriam's 10 functions of music, Young's (2002) descriptive categories and Knudsen's (2008) broader sociocultural theorising.

We constructed the following music-specific definitions to clarify our application of Dissanayake's devices to the analysis of children's spontaneous vocalisations and to advance our claims about the aesthetic attributes those vocalisations reveal. The authors' varied academic backgrounds and research interests – music education,

literacy education and music cognition – provided a form of triangulation for the following analysis. Every claim that one of us made about a vocalisation episode had to 'make sense' to the others, requiring us to repeatedly interrogate our interpretations of Dissanayake's five aesthetic devices.

(1) *Patterning* (formalising): Spontaneous vocalisations display temporal regularity, tonal qualities and formal structure (organisation into motives or phrases). Even fragmentary vocalisations convey a sense of being set apart, of being different from and more intense than regular behaviour, often through the coordination of voice, facial expressions and kinetics. Dissanayake (2011) uses the term 'formalization' to capture this notion of making ordinary sounds extraordinary (62).
(2) *Repetition*: This term can confuse, because *music* is typically distinguishable by repetition of pattern, and so pattern and repetition seem musically inseparable. In the case of children's spontaneous vocalisations we identify a single, fragmentary pattern or motive by its rhythmic and tonal properties. In repeating the fragment it becomes regularised, which enhances its salience as a musical idea.
(3) *Exaggeration*: Vocalisations are sometimes made 'slower in duration, larger in size, higher in pitch, more undulant in contour' (Dissanayake 2012, 4). These exaggerations create emphasis, which serves to heighten attention and may make the utterance more interesting.
(4) *Elaboration*: Vocalisations are elaborated (lengthened) in various ways. Extension consists of tacking on extra material, while clarification and emphasis are achieved by varying a motive tonally and/or rhythmically.
(5) *Manipulation of expectation*: Patterning, repetition, exaggeration and elaboration can be used, separately and in combination, to manipulate expectation, which attracts and sustains attention and provides excitement or satisfaction.

Dissanayake theorised, in her discussion of ceremonial rituals (2009a, 535), that through these five operations – patterning, repeating, exaggerating, elaborating and combinations of these – everyday movements become dance and spoken language becomes song. The capacities to engage in and respond to these proto-aesthetic devices 'are then available as a sort of reservoir for later intentional aesthetic operations' (2009a, 535). As our analysis will indicate, these devices rarely exist in isolation; rather, they overlap and combine in myriad ways.

Intentionality

In intentional music-making the expectations of fellow performers and listeners are manipulated. The move from proto-aesthetic to aesthetic behaviours, for Dissanayake (2011), involves intentionality: our ancestors began to deliberately apply the five aesthetic devices in their ceremonial rituals, to make 'ordinary experience extraordinary' (66). What can we say about intentionality in children's spontaneous musicking? Bannan and Woodward (2009, 472) suggest that even infants display intentionality when they deliberately repeat certain sounds, either alone or socially. These sounds, now under the baby's control, become manipulable: 'known to the mind and retrievable by it, they are immediately capable of *transferable ownership* and *referentiality*'. Intentionality, in this view, does not require a languaged knowing.

Children's spontaneous musicking, our interest here, is often not considered to be 'music' by the children. 'What may have sounded like music to me, in the pitched inflections and durational patterns of their vocalizations and movements, did not function as music to them: it was play, pure and simple' (Campbell 2010, 85). We suggest that what *is* intentional – calling attention, expressing emotion, enhancing fantasy play, communicating messages, bonding socially – intuitively draws upon 'evolved predispositions to elaborate and to respond to the elaborations of others' (Dissanayake 2000, 208).

Spontaneous vocalisations: descriptions and analysis

We are sensitive to Young's (2002) caution that our Western musical backgrounds inescapably influence what we hear. Converting children's spontaneous vocalisations to standard Western notation, as we do below, cannot fully capture tonal and temporal nuances, and may suggest an evaluation about relative fidelity to Western musical norms. We offer our notated approximations with this important caveat. We further acknowledge Young's (2006) assertion that a focus on one disciplinary slice of these composite behaviours misrepresents the 'interweaving, interrelating and integration of various modes' (277) that constitutes these spontaneous expressions. We address the multimodal nature of the vocalisations we describe, within the limits of the printed word, and, in the case of school yard vocalisations, our inability to video-record and thus revisit these excerpts.

There is a degree of happenstance involved in naturalistic observation. In each of the vocalisations we describe, we happened to be close enough to hear the sounds and make some sense of the context. Nonetheless we cannot claim to have always heard and seen the complete event or to have interpreted its genesis precisely.

Patterning

It is rare to see a child execute a physical play move and *not* simultaneously vocalise the movement. In fact, Boyce-Tillman (2000, 91) suggested that children's ability to control their bodily movements is actually linked to their ability to control sound. Sliding down a hill or a playground slide, for example, is usually vocalised on a sustained, open *ee* or *ah* vowel, with the vocalisation's contour miming the physical move. The seconds-long thrill of sliding across a small patch of ice, of rolling down a grassy hill, of reaching the high point of a swing's trajectory – these and countless other physical moves were almost always sounded with vocalisations that peaked in pitch at the apex of the physical effort. We hear a fragmentary sound pattern, because musical sound is our focus, but we recognise that the sound, the kinetic movement and the expressive gestures (facial expressions, stance, touch, proxemics) create a simultaneously executed, emotionally expressive package, four examples of which we analyse here.

On a cold morning recess in December, a group of children aged six and seven lined up, in self-imposed democracy, to take turns at body-sliding across a small patch of ice. We describe two of many individual vocalised patterns that attended the individual slides (Figures 1a and 1b). The first 'measure' accompanied the running start towards the ice patch, and the second 'measure', a long, high-pitched arching sound, synchronised with the child hurling his/her body onto the ice for a micro-slide

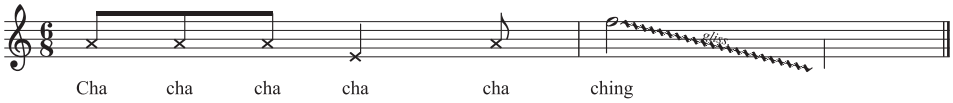

Figure 1a. Ice-sliding solo #1.

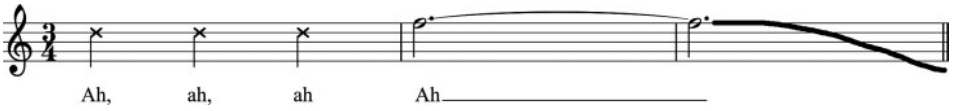

Figure 1b. Ice-sliding solo #2.

of two body lengths at most. These spontaneous sound patterns announced to anyone who cared to notice that risky physical feats were being performed. They also, to our ears, sounded the exuberance and joy of shared individual play.

A boy, aged seven, ran towards a thick wooden plank, loudly singing an upward glissando on *ee*. He jumped onto the plank while singing *yah,* simultaneously raising his arms in triumph as he nailed his move. The movements were perfectly coordinated with the vocalising which when he landed seemed to be at the absolute top of his singing range. While no one else appeared to pay attention to this event, the sound pattern helped the child execute the physical move and increase the emotional intensity of the moment (Figure 2).

Four boys, aged 10, huddled together to execute a pinkie-swear that culminated in their joined hands being raised in the air while vocalising a very fast ascending glissando and a long, dramatic descending glissando, after which they ran off to fulfil the mission (Figure 3).

A nine-year-old boy was part of a chase game involving at least a dozen peers. He had just been caught, which meant that he was now to be a chaser. On being tagged he instantly announced his new status by singing this familiar *Batman* riff as he dashed off (Figure 4).

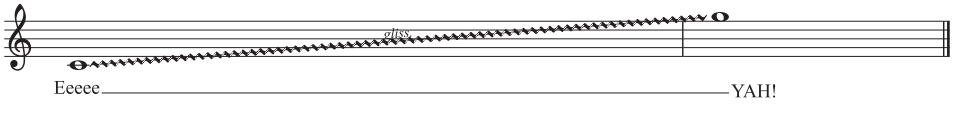

Figure 2. Plank mount.

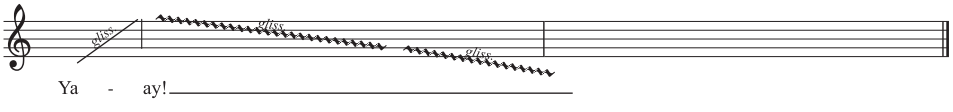

Figure 3. Pinkie swear.

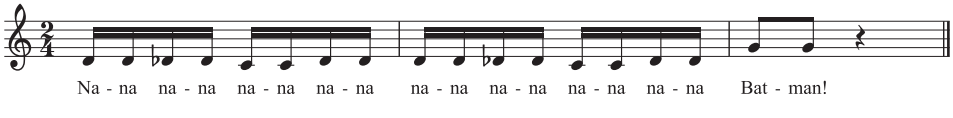

Figure 4. Batman!

Each of the above sound patterns helped synchronise and add emotional salience to a play move. The physical moves and the vocalisations were completely integrated, as Lum and Campbell (2007) also observed, examples of what Young (2006, 274) aptly named 'movement singing'. Despite the fragmentary nature of the vocalisations, each contributed to making that play move an extraordinary temporal event.

Repetition

One of the simplest examples of musical repetition was sounded by a boy, aged 12, who burst through the school doors at the start of recess, singing this call on a clear augmented 4th (Figure 5). The boy led a running pack of six to eight peers whose purpose was to lay claim to a specific play apparatus. Eight unwavering repetitions of this vigorous vocal call carried over the noise of the playground in commanding fashion, and accomplished the goal of securing the desired equipment. Indeed, other children simply moved aside as this phalanx of concentrated energy thundered by (Figure 5).

A boy and a girl, aged eight, sat on adjacent playground swings and coordinated a side-to-side movement with this repeating vocalisation. The swings are not built to accommodate this action and so the repeating words provided a necessary means of coordinating and regulating the play. The quality of the vocalisation, which did not mime the contour of their movements, was artistic: the two complementary actions created a beautifully arch-shaped motive by alternating a rising and falling pitch contour. The tempo was leisurely and there was a momentary, rubato-like pause at the top of the gliss and again at the bottom, allowing time to breathe, of course, but additionally generating a memorable, symmetrical phrase (Figure 6).

A boy, aged seven, roamed the playground holding in front of him a long, Y-shaped stick. In his solitary game the stick was a divining rod or a Geiger-counter, leading him to find alarming quantities of scary particles. For at least five minutes this explorer sang one or the other of these two patterns, multiple times, always on a pure, consistent *G*, as he meandered around the playground on his mission,

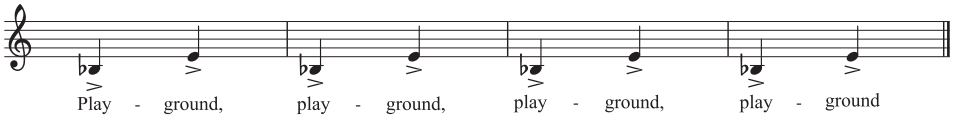

Figure 5. Play-ground.

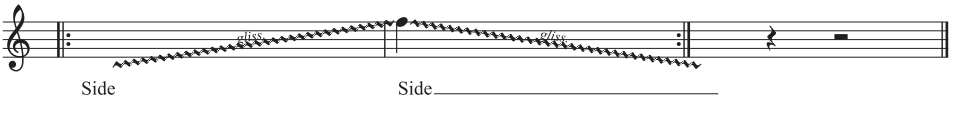

Figure 6. Sideways swinging.

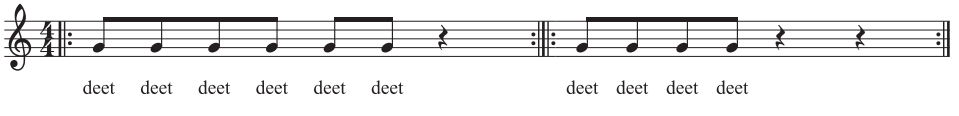

Figure 7. Geiger-counter.

apparently oblivious to the other children. His soundings were continuous for a full minute, creating phrases of varying lengths from pattern one or pattern two, never intermixed within a phrase. After a minute he took a short break from sounding, and then resumed the vocalising as before (Figure 7).

The rhythmic repetition, rock-steady tempo and pure singing tone elevated what could have been unnoticed play-sounds into musicking. His complete focus and commitment to this fantasy play, sustained over such a long time, suggests that he was creating some kind of emotional meaning for himself.

These three examples illustrate children employing the device of repetition in their spontaneous vocalising for varying play purposes: announcing dominance, coordinating a specific manoeuvre on the swings and providing a sound track to a solitary fantasy game. Again, as Young (2006, 275) observed, the activity is 'composite': kinesthetic, visual, auditory and spatial modes synchronously and inseparably built emotional intensity. In each instance the regularising effect of the repetition also contributed emotional satisfaction or comfort as well.

Exaggeration

A large group of Kindergarten children, aged five, played together on a climbing structure. One boy heard a helicopter and, eyes searching for the craft, began sing-chanting *Hel-i-cop-ter* (Figure 8). Many of the children gazed dramatically skyward and took up the chant, repeating it multiple times, some in unison with peers and others maintaining it individually, which created an overlapping effect. After about 20 seconds one girl emphatically chanted over the others in half time. The girl's volume, coupled with her physical position, higher up on the structure than most of the children, enhanced the sense of exaggeration. Musically, she created an almost perfect rhythmic augmentation to her peers' chant. After several repetitions of this, the helicopter was out of sight and hearing and the vocalising ceased.

The next vocalisation (Figure 9) was beautifully sung by a girl, aged nine, within the context of an energetic and complex hiding/chasing game being played on a large play structure. Another player had just sung-chanted the common *Na na-di boo boo*, with typically taunting bravado, and the girl immediately followed with this fragment. She sang in the same key (m = E), but with a completely different attitude and temporal configuration, so that it soared above the chaos of the play. The

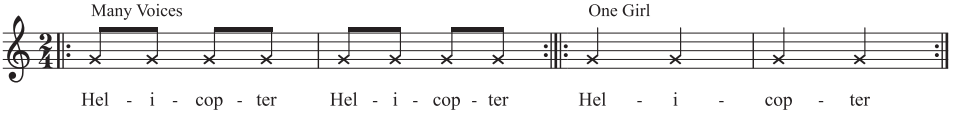

Figure 8. Helicopter.

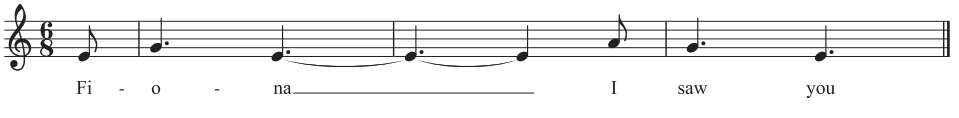

Figure 9. Fiona.

musical exaggeration here – the final syllable of *Fiona* was stretched 2.5 beats – created a lovely, more original tonal motive than the typical chase taunt.

In both of these examples, the exaggerations – the rhythmic augmentation of *Helicopter* and the unexpected elongation of *Fiona* – created musical interest as well as drawing potential listeners' attention. They illustrate children's tendency to playfully experiment (to improvise), and to seek *interactional synchrony* (Sawyer 2005, 52), which scholars like Malloch and Trevarthen (2009) and Dissanayake (2000) argued is a biological disposition. From a sociological perspective, as Knudsen (2008, 291) noted, such improvised soundings are 'a key way in which children learn to know the self as a self'.

Elaboration

The Grade 2's (aged seven) lined up at the end of recess to return to class. Two girls, at the end of the line, were softly singing this short phrase, repeated several times (Figure 10). The extension, adding a second 'favourite girl', was artful, made more so by the girls' telepathic decision to sing the motive even more softly on its repetition. At the end of each reiteration they giggled conspiratorially, which added exactly two beats and so created a four-bar phrase. Their pleasure in this shared vocalisation, and all that it implied, was palpable.

During play time at a childcare centre, a girl, aged four, wandered about with a large paper basketball sticker in her palm. She patted the sticker as she sang, her clapping pattern approximating the down beats of her meandering vocalisation (Figure 11). She elaborated her initial two-bar motive, making the second one more complex tonally and stretching its length to five bars. The third motive returned to the original two-bar length, but was varied again so that it emphasised what we heard as the tonic more forcefully. Despite the internal asymmetry, the overall vocalisation, 12 bars in length, created a coherent improvised song.

A four-year-old boy at a childcare centre awaited his turn to use the washroom. He sat apart from the other children and sang-chanted this improvisation (Figure 12). The contour of the repeated motive (*a*: 'I'm in the last line-up') was always reiterated

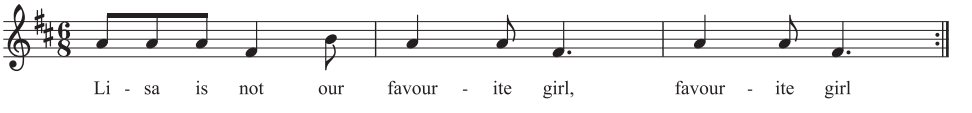

Figure 10. Favourite girl.

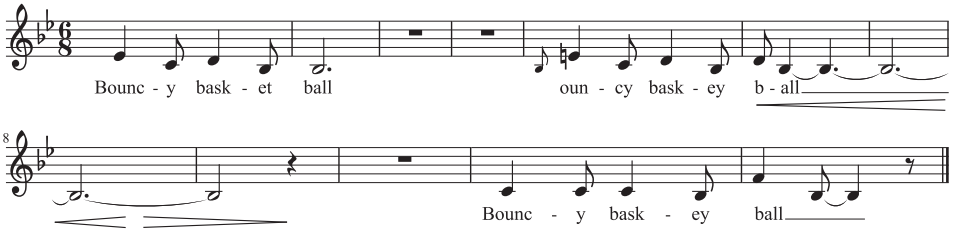

Figure 11. Bouncy basketball.

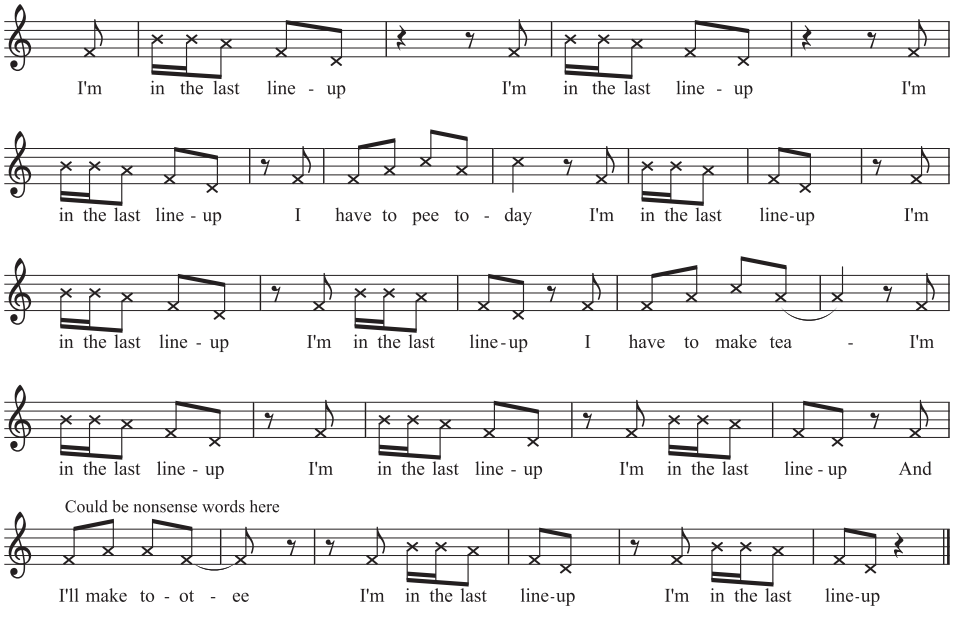

Figure 12. In the last line-up.

exactly, in sets of three, and the metre and rhythms were strongly emphasised. The fourth motive (*b*) came as a total surprise to the listener: the singer used new material rhythmically and tonally and he reversed the melodic contour, elaborating by means of musical extension. He twice repeated this miniature *a a a b* structure, but varied the *b* motive each time. This formal sophistication is noteworthy.

Two girls, aged 11, were creating gymnastics moves on diagonal steel poles that held up a portico to the school entrance. One started singing an improvised phrase 'I am so cold' while continuing to perform her moves (Figure 13). The second girl, who also kept moving, joined her on the second phrase, in perfect unison until the ending, where the originator went to the tonic while her companion meandered. This bit of singing displayed a shared instinct to extend a spontaneously sounded phrase into a musically symmetrical mini-song, sounding their social connection as well as their shared physical prowess.

On a very warm recess break 10 or more girls and boys, aged seven to nine, were locating dried up worms and carrying them to puddles for reconstitution. Call 1 (Figure 14) was sounded multiple times, by groups of two or three, as they roamed over a large swatch of the playground. The emphatic vocal delivery was in ear-grabbing unison.

Call 2 (Figure 15), in rhythmic heightened speech, happened in counterpoint, sounded by different scouts alerting the Call 1 biologists to new finds. Call 2 pitches

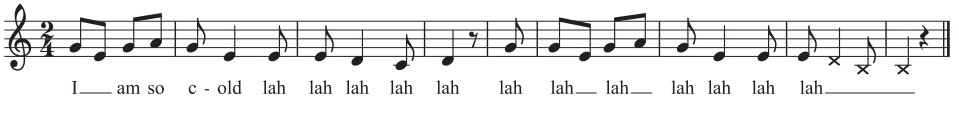

Figure 13. I am so c-old.

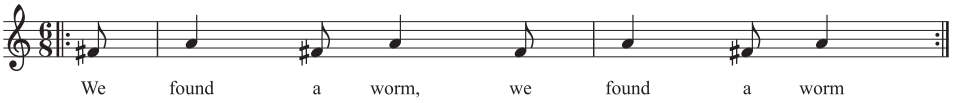

Figure 14. Call 1: We found a worm.

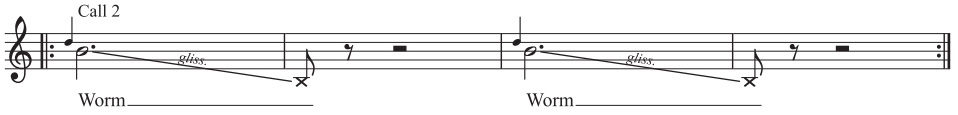

Figure 15. Call 2: Worm!

glissed downward, mostly from B to D, and in head voice that matched the timbre of Call 1.

The two patterns were sung repeatedly, with unpredictable spaces between each group of iterations, during which some players delivered the desiccated worms to the puddles and others continued the hunt for more specimens. These vocalisations illustrate *repetition*, of course, but additionally they feature *elaboration.* Call 1 organised the work of one group, perhaps the originators of the game. The second pattern, in steady dotted half notes, was used by other players to announce new finds further afield. It created a vocal counterpoint, both vigorous and capricious, that made this vocalisation more elaborate and extended than many play utterances.

These five examples of elaboration illustrate individuals, pairs, and a large group, each extending their spontaneous vocalisations in various ways. In *Favourite girl* a simple reiteration of a motive was enough to extend the vocalisation artfully, while in the solo improvisations of *Bouncy basketball* and *In the last line-up* the solitary singers were free to extend their spontaneous songs by creating tonal and textual variations on an initial motive. The additional musical experience of the *I am so cold* girls enabled them to extend an initial improvised phrase with a jointly improvised answer phrase. Some of the players reconstituting worms created an elaborated second call which drew players' attention to new worms and created a more sophisticated sonic guide to the game. Such improvised vocalisations illustrate children's social and communicative competence. The multimodal nature of the communication – where gaze, posture, movement, interpersonal timing, turn-taking, vocalising and rhythmic synchronisation seem effortlessly coordinated – adds 'additional layers of meaning' (Knudsen 2008, 291).

Manipulation of expectation

Three Grade 1 boys, aged six, moved in lovely synchroneity on a swing set (Figure 16). The leader sang out a two-beat pattern, and the second boy instantly

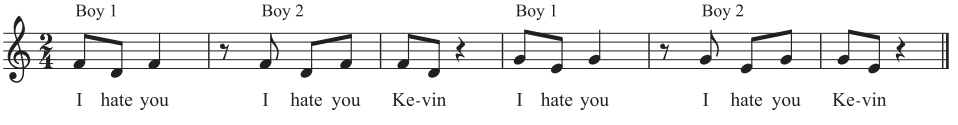

Figure 16. I hate you Kevin.

responded with a more metrically complex answer. This exchange became a call/response duel between the two boys, always preserving the pattern of a two-beat call and four-beat response. As the swings climbed ever higher, so did the pitch, the volume and the tempo of this exchange, until, after about six repetitions they were screaming at the top of their range. Boy three continued to swing in time with his peers but did not vocalise.

This vocalisation, which started as a tease and morphed into a game, used the aesthetic devices of *repetition* and *exaggeration*. Tempo, pitch and volume were all exaggerated, with each reiteration faster, higher and louder than the preceding one until they were screaming. After the heartily screamed final exchange all three boys dissolved into laughter, slowed the swings, jumped off and ran away. Perhaps it was the adult hearer's expectations that were being manipulated!

This repetitive call/response (Figure 17) emerged during outdoor play at a childcare centre. A group of about six children, aged four, was playing in a large sandbox. One boy sang the riff, 'You've got jah-jah' twice (bars 1–2), on a descending interval that moved between M3 and m3. A girl answered (bar 3) with *Yeah* on the down beat, which changed the metric configuration from 2 + 2 to 3 + 2. She also varied the words, changing 'got' to 'have'. The boy responded with his original motive, in duple metre and a faster tempo (bar 4), keeping the word change introduced by the girl. The girl (bar 5) echoed him exactly and accelerated the tempo further. The boy (bar 6) repeated his previous pattern, accelerating, and this time the girl joined him on his second beat. Then the exchange accelerated dramatically and the words continued to be varied (bars 7–9): the boy's 'you have cha-cha', followed by the girl responding 'you have jah-jah', to which the boy countered with 'you have ga-ga'. At this point the spontaneous duet dissolved, due to a physical interruption by another player.

The turn-taking in this exchange involved the repetition of a pattern with words that appeared to contain no precise meaning. The two children worked out and then maintained a coherent call/response pattern, one that seemed to please and satisfy them to the extent that they ignored attempts at intrusion by several peers. They used *exaggeration* in the form of tempo increase, while keeping the pitch contour and volume steady. They also *manipulated expectation* in three ways: the girl tried out a different metric pattern at bar 3, and at bar 6 interrupted the two-beat hand-off pattern by joining the boy, who contributed changes to the text at bars 7 and 9.

The children in the *I hate you Kevin* and the *You've got jah-jah* exchanges were manipulating expectations through what we recognise as musical means. The pleasure the participants in both vignettes took in these coordinated temporal

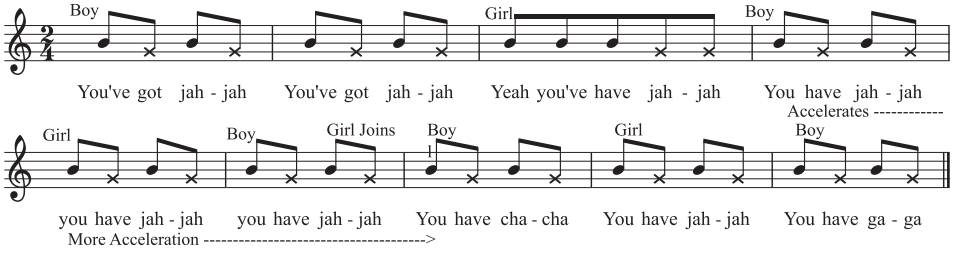

Figure 17. You've got jah-jah.

exchanges was heightened by accelerating tempi and dynamics and surprise changes in text and metre. In both instances the call/response structure, which supported social interaction, also inspired the children's musical creativity.

Campbell's (2010, 244) observation that children's spontaneous vocalisations are 'typically open-ended' is borne out in all of our examples. This openness of form invites peer interactions, facilitating 'the distributed nature of cognition, consciousness, imagination, and emotion in children's playful communication' (Alcock 2010, 218). In many of our examples, such as *I hate you Kevin*, *You've got jah-jah* and *Favourite girl* the sense-making was overtly collaborative, whereas in other examples, such as *Bouncy basketball* and *I'm in the last line-up* the individual child created a personally meaningful, multimodal experience, perhaps shared with an imaginary friend or a pretend audience.

The five aesthetic devices – patterning, repetition, exaggeration, elaboration and manipulation of expectation – help the vocalisers to attract attention, sustain interest, harmonise group activity, prolong social interaction, communicate emotions and enhance excitement or satisfaction. The devices provide the adult listener with a well-theorised, non-ethnocentric schema for apprehending and describing the artistry embedded in children's spontaneous vocalisations.

As Dissanayake (2000) established, human needs for mutuality and belonging are met through such processes as 'synchronizing, turn-taking, imitating or matching, and sequentially patterning movements and vocalisations' (60), the manipulations of which produce emotional effects. Originating in mother–infant interactions, these processes gradually became, through ceremonial ritual practices, intentional processes of art-making. Children, our analysis shows, play with these aesthetic operations cross-modally to explore the self, to attract attention and to create 'emotional meaning' (2009a, 537).

Implications for practice

Our professional literature (e.g. Barrett 2005a, 2005b; Green 2008; Campbell 2010; Kanellopoulos 2010; Marsh 2008, 2011; Harwood and Marsh 2012) increasingly emphasises the need for teachers in formal music education settings to honour the musical experiences, interests and competencies that children bring to formal music education – to recognise that children come to our classrooms already musical. Regular opportunities for children to improvise and compose, to make genuine musical choices and to take musical ownership and leadership are some of the pedagogical suggestions that this literature underlines.

We endorse the potential of Dissanayake's aesthetic devices as a useful tool in enacting this interactive pedagogy. Elliot Eisner (2002, 100) articulated the necessity of sometimes using language to help highlight artistic ideas and processes, to make them 'inspectable'. Dissanayake's five devices provide languaged insights, disencumbered from formal Western musical analysis, for children and their teachers to inspect music – both children's self-created music and the music of others, from peers to professionals. We do not intend a reductive, analytical process here. Rather we suggest that the five aesthetic devices offer teachers a pedagogical tool, capturing processes children instinctively use, for acknowledging each child's musical ideas, for appreciating the musical contributions of classroom peers, for suggesting additional

ways to manipulate and extend musical ideas, and for discovering and celebrating the commonalities among musics from many traditions and styles.

Children's spontaneous multimodal concoctions of sound, movement and gesture are expressions of personal agency, social connection, meaning-making, communication and aesthetic delight. These soundings afford us insights into children's innate artistry, insights we can use in decentring our pedagogy. Dissanayake's aesthetic devices – patterning, repetition, exaggeration, extension and manipulation of expectation – offer a languaged means to help us in this quest.

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Note

1. Although other researchers on children's musicking have examined Dissanayake's work theoretically (e.g. Barrett 2005a, 2006; Bannan and Woodward 2009) none, to our knowledge, has specifically applied her artification processes to children's musicking for analytical purposes.

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Katherine Thompson is a graduate student in psychology at the University of Toronto. She is currently investigating, with Dr Mark Schmuckler, the incremental effects of music training on various cognitive and music processing domains.

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