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Origins and expertise in the musical improvisations of adults and children: a phenomenological study of content and process

Lori A. Custodero

Teachers College, Columbia University, New York NY 10027-6696

custodero@exchange.tc.columbia.edu

This study explores the musical content and human processes of improvisations of children and adults using the phenomenological lenses of time, space and responsivity. Paired improvisational performances of two late-career adult composers and two 7-year-old children were analysed considering a lifespan-related perspective involving the origins of spontaneous musical creativity associated with childhood dispositions and the musical expertise gained from practice, training and experience. Findings suggest that origins and expertise are operating in improvisational experiences of children and adults. Implications are drawn for musically meaningful research and evaluation of children's improvisations.

Introduction

Of all activities presumed to be music, improvisation may be the most intimately human, demanding a state of wakefulness to both the present and the potential for continued development. As a 'celebration of the moment' (Bailey, 1992: 142), improvisation is a fusion of spontaneity and experience, remnants of our creative, playful, inquisitive childhood origins mingling with technical expertise and knowledge acquired through a lifetime of musical exposure and activity. Occurring in real time, the performer creates, interpreting and responding to expectations implicit in musical materials. In collaborative improvisatory performances, we attend to musical invitations that emanate from both music and milieu, resulting in creative products that are ephemeral, unique to that moment in time and position in space. This study explores the collaborative improvisational products and processes of two adults and two children in an attempt to reveal possible consistencies and change.

Sawyer (2003) has compared the creative process to the process of human development, finding parallels in the ways both are emergent, that is, they both involve change over time, change which is malleable according to interactions with conditions, events, and people in their environment. Such a view suggests promising directions for music education research, inasmuch as the study of such processes in children may inform teaching practices and support interdisciplinary understanding of musical activity as germane to our existence. In her interpretation of adult creative work, Cobb (1977) noted '. . . the need to organize sound and sense into some kind of sequence and to include motion in the structuring of time and space appears to be instinctual in human beings'

(p. 49). She views childhood as a value system where awareness of time is situated in the present rather than projected to the future, and space is perceived vis-à-vis limitless, imagined potential rather than boundaries. Fuelled by 'the dancing heart, dancing blood, and the beating pulse' (p. 43), such instinctual curiosity enables long periods of exploration, rewarded and maintained by the anticipation of growth.

With a few notable exceptions (e.g., Burnard, 2000; Sawyer, 2003), perspectives reflected in theory, research and practice of musical improvisation in children have resisted such phenomenological views. The current study was undertaken in response to a view in music education that conceptualises improvisation along a single age-based continuum (Gordon, 1997; Kratus, 1995), where creative efforts are perceived relative to their place along a linear scale from novice to expert. Although these models may serve a function in identifying general trends, they also limit the ways in which children's musicality is interpreted and addressed in instructional settings, perpetuating a view of becoming rather than being. Western tonal and rhythmic conventions are often treated as sole criteria for evaluating children's performances, a practice contrary to the study of adult creative music making, where innovation and inventive responsivity to musical cues are valued (Berliner, 1994; Iyer, 2004).

The skills-based discipline of music education may be prone to a type of prejudice regarding age, dismissing the existence of intention, personal meaning, or the potential for complexity or ambiguity from those who have not reached a certain level of perceived expertise and technical mastery. Such a view is demonstrated in this published description of an imaginary improvisation between child and expert: '[Lionel] Hampton's fingers fly as he weaves an intricate melodic line over a set of repeating harmonic changes. In the meantime, [7-year-old] Sean plays from the lowest note on his instrument to the highest and back again, all the while struggling to keep a steady beat' (Kratus, 1991: 35). Such a perspective infers a deficit model that risks transfer to educational practice, in which focus is on the normatively absent rather than the expressively present. I am arguing for a phenomenological view of children's improvisation situated in the social context of musical communication and meaning making, that considers the actions of children as intentional and the experience of improvising as multifaceted.

To address this situation it was important to examine both the musical content and the musical experience – to inquire about the communicative expression and its manifestation in sound. Since developmental models are formed around assumptions of adult expertise, it was imperative to reexamine improvisation in the renderings and reflections of adults – in this study, two professional late career composers. Using analyses of the musical creation in conjunction with the subjective experience of creating revealed themes that were then explored in the renderings and reflections of two young children. Phenomenological description was used as the means of analysis; searching for essences of time and space in music (Clifton, 1983), and the responsivity of performers to one another and to the milieu. These findings were then interpreted using the constructs of origins and expertise, representing the contributions of youth and maturity, in order to develop an alternative, more reciprocal view of the development of improvisatory skill.

Questions that guided the investigation included: How do experts make meaning through improvisation? What are the origins of such musical meaning making in the scope of human development? What characteristics of mature performance draw upon these

origins? What characteristics of nascent performance might reflect the seeds of expertise? Rather than chronological polarities or conceptual binaries, origins and expertise are interpreted as fluid influences supporting dynamic creative effort. This analysis seeks to explore an organic, inherent, and holistic means of describing musical meaning by looking across the lifespan for contributions from our childhood origins and the accumulation of expertise, and looking across musical content and lived experience for evidence of music as expression of our humanity. Situated in music, this search invites extrapolations to additional subject areas where phenomena of learning are interpretable through the human condition, and innate knowing and developed expertise co-exist as resources for human agency.

Time and space in music and musical experience

As a temporal art, music is experienced as structured by both space and time – much like our daily existence. Throughout our lifespan, music provides meaningful structure through its socio-cultural functions in ceremonial rites of passage and regulation of routine, and through its power to psychologically alter consciousness (DeNora, 2000). Music also places us; associations with familiar tunes and referential sounds transport us to spaces real and imagined. We use similar words to describe human growth and musical processes – modulation, variation, transformation, development, recapitulation and progression – suggesting that both music and human experience are defined by their dynamic nature. Being human means being musical: responsive to our myriad contexts, we move through time and space in circumstances consonant and dissonant, solo and tutti, punctuated with cadences and propelled by perceived possibilities for action.

Interpretations of both lived time and musical time are marked by a variety of constructed beginnings and endings: it is this layering of impetus and decay that provide substance for infinite experiential possibilities. Nachmanovitch (1990) describes musical time as the convergence of past, present and future. This macro-view is formed through analyses involving simultaneity of referents that shape our consciousness: beginning, ending, continuity, and interruption, and levels of rhythmic activity such as pulse patterns, durations of phrases, and rates of tempo changes (Nettl, 1974; Clifton, 1983). Children begin organising their experience and show interest in time-based phenomena very early; Cobb (1977) reminds us: 'For the child, time and growth are organically and perceptually equated. . .' (p. 37). Infants match their vocalisations in character and length to their mothers' vocalisations (Fox, 1990; Trevarthen, 1999) creating call and response patterns that can be metrically transcribed.

In the context of musical activity, space is experienced as our relative position vis-à-vis musical instruments, other people, and general environmental conditions; as we listen and create we experience the horizontal spaces occupied by melody and phrases, and vertical space defined by the harmony and timbre of sonorities. Descriptors of musical space in Western music are most prevalent around a positional sense of tonality, as the central pitch acts gravitationally to attract wandering harmonies to resolution. Like time, musical space has been idiomatically described using characteristics of density, encompassing foreground, middleground and background structures (Schenker, 1933/1969). Phenomenological analyses of musical space use referents such as line,

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thickness, boundary, transgression, dimension, surface, depth, aggregates and clusters to define specific images (Clifton, 1983; Briggs, 1987). Interpretations of musical space are also informed through interactions of contrast, involving the superimposition, juxtaposition, and overlap of established conventions and patterns.

Compelled to move through space in order to know it, children extend themselves into the environment in order to seek answers to 'What if?' Their open perspective perpetuates a fluid sense of possibility that continuously causes reformulations of hypotheses. In this way, people both construct their own worlds (Bruner, 1986) and are constructed by them (Wartofsky, 1984). Improvisation is the musical manifestation of this childhood heritage – performers trying on possibilities, making pathways created through attention to personal and shared worlds and to directions suggested by the musical materials themselves. Such dynamic, emergent use of space in the creative process is described by composer-participant Elaine Barkin, in a text written after an improvisation experience entitled 'DANCE: a sentence inspired by a session with Alexandra [the other composer-participant] and Roger Pierce held in their kitchen, 1/29/86.'

As we sound

as sounding bodies
we
out of elusive
whereabouts
resonate
audibly and inaudibly
visibly and invisibly
face
limbs
bones
mindbodywaves
ex-pressing
our interior selves
transiently relieving
pressure
forestalling ineluctable
decay

we move.

Here, Barkin plays with macro- and micro- sensibilities, juxtaposing dichotomous images, guiding temporal experience in the spatial placement of words, while framed in an enveloping message, reminiscent of a Schenkerian urline: 'As we sound . . . we move.'[1]

Responsivity in musical experience

Time and space provide ways to structure experience, but it is in the responses to cues from immediate musical and social circumstances that we create alternative frameworks, manipulating existing structures to meet the needs of the moment; it is where improvisation goes beyond the prepared to the relevant, where meaning is communicated. Responsivity

to perceived musical cues in the environment involves recognition of sounds and images as accessible resources, the function of which varies with individual needs. When engaged in music making we collaborate, compete, resonate and synchronise with people in our environments; we imitate, model, appropriate, resist and expand upon musical ideas.

Saxophonist and improviser Evan Parker shared with Dereck Bailey (1992): 'My 'ideal music' is played in groups by musicians who choose one another's company and who improvise freely in relation to the precise emotional, acoustic, psychological and other less tangible atmospheric conditions in effect the same time music is played' (p. 81). Parker is acknowledging the social and contextual nature of musical improvisation, influences including relationships with the instrument on which one performs, and relationships to other performers. Interestingly, he finds such responsivity to be freeing. Similarly, studies of young children's musical free play demonstrate observable links between performance and instrument choice, movement, and people with whom they are playing (Guibault, 1999; Kanellopoulos; 1999; Littleton, 1991; Moorhead & Pond, 1941–51/1978, St. John, 2004b).

Musical responsivity is greatly influenced by the kinaesthetic relationship with one's instrument. Described by an improvising pianist as 'handful choosing' and 'finding pathways' (Sudnow, 1978: xiii), it is about the permeating presence of motor memory, which may be a source of inspiration or resistance in moments of creativity. Berliner's (1994) inquiry into jazz improvisation revealed the 'body's capacity to dictate with great assurance during improvisations, by giving momentary primacy to the physical logic of patterned movement over the strictly aural logic of melodic form' (p. 209).

Children's creative relationships with musical instruments are similarly based in physical sensations, such as the use of mallets as extensions of arms (Moorhead & Pond, 1941–51/1978; Young, 2003b). A cross-cultural study between the USA and Japan indicated that children showed preferences for certain instruments and that gender specificity in instrument choice and activity (boys preferred large arm movements with mallets on low sounding instruments and girls preferred higher sounding instruments and dancing) was stable across the two cultures (Littleton, 1994). Organisational strategies involving time and space used in the xylophone improvisations of 3- and 4-year-old children were based on bodily involvement (Young, 2003b); categories revealed were similar to those found in literature on adult improvisation (e.g., Briggs, 1987) including repetition and chaining.

Responsivity that leads to creative collaborative music making begins with receptivity, that is, a disposition open to receiving sources from which to respond, and is sustained by mutuality and embodiment. These characteristics are especially evident in childhood, as Cobb reminds us: 'The ability to maintain plasticity of perception and thought is the gift of childhood to human personality' (1977, p. 35). Such plasticity or openness to possibility generates a sense of wonder about musical resources, allowing new perspectives to be explored.

At its best, musical responsivity and receptivity act in symbiosis, resulting in a mutual sense of oneness that transcends boundaries of time and space. The origins of such experiences are found in early mother–infant interactions, where such intimacy is first established (Dissanayake, 2000). This co-creation of experience through shared intention has been described as a 'primary motivational system' (Stern, 2004: 97) and 'communicative musicality' (Trevarthen & Malloch, 2002). Children's spontaneous music making has shown responsivity to social resources (Kanellopoulos, 1999), for example, vocalisation

dramatically differs depending on whether children singing spontaneously were alone or with peers (Moorhead & Pond, 1941–51/1978; Bjørkvold, 1989).

Responsiveness to cues in the environment includes not only the kinaesthetic bond between self and object and the empathetic bond between self and other, but also the merging of self and subject. Experienced by children, who must often *become* to fully know (Cobb, 1977), embodiment is also experienced by adults, as exemplified by musician Joan Osborne, who said 'it's not that you want to sing the song, it's that you want to be one' (Erlich, 1997: 43). Alexandra Pierce, a participant in the present study, has written about the human form as relative to musical form – the spine, an embodiment of tonal centre, the expansions from the spine (head, arms, legs), the harmonic expansions of the tonic core. Movement is the extending of oneself into the world. She writes 'Each movement goes out from center and returns to center, shaping its travels in details so that it leaves its mark on the world, and also on the person as a further enrichment of character' (Pierce & Pierce, 1989: 79). The embodiment of musical experience is considered phenomenologically as 'possession' by Clifton (1983), who also draws connections between origins and expertise:

> The essences of music – sounding motions formative of time and space – are primordially acquisitions of our own bodies, which move about and which perceive 'animated apparitions' which the six-month-old phenomenologist has not yet assumed to be autonomously existing . . . (Clifton, 1983: 285)

Interactive experiences of receptivity and responsivity occurring in musical time and space are meaningful across the lifespan, exemplified in the ways people move through and construct themselves and their art form in ways influenced by the inherent and the learned. In order to explore the assumptions concerning the musical qualities by which children's work is assessed, it was necessary to re-examine the musical products and processes created by professionally acknowledged composers and by children. Using a phenomenological lens the investigation focused on time, space, and responsivity in improvisations of each dyad, considering possible sources for those influences, including the concepts of origins and expertise. Data collection for this study comprised two phases: (1) the collective improvisations and reflections of two professional composers; and (2) the collective improvisations and reflections of two 7-year-old-children.

Method

Phase 1: Participants, setting, and procedures

With a history of improvising together, Alexander Pierce (b. 1934) and Elaine Barkin (b. 1932) received PhD degrees in composition and theory from Brandeis University, have well-established careers in academia, and have explored non-traditional resources including the use of multimedia and prepared piano. Elaine, a composition professor at the University of California, Los Angeles, has been actively involved in performing with and composing for the Javanese and Balinese gamelan as well as playing with the sounds and semantics of language as text (Barkin, 1985, 2003). Alexandra Pierce, a professor of music and movement at the University of Redlands, composes in a playful, gestural style and writes on the relationship between Schenkerian theory, movement and performance (Pierce, 1983; Pierce & Pierce, 1989). Both were born in the USA and are of western European descent.

With the purpose of documenting the improvisational process in an authentic way, I spent a weekend with the two composers at Alexandra's home during which time they talked much about their processes, improvised on piano and other available percussion instruments, and reflected on their performances. The procedure was designed to follow the participants' lead: we began with talking about the improvisational process and how they characterised their musical partnership. This led to the first of four improvisations: two in which the performers were on pianos in separate (but closely situated) rooms, titled 'Elaine Foreground' and 'Alexandra Foreground'; one in which both women were at one piano and were joined by an unexpected canine chorus, titled 'Barkin', Barkin, and Pierce'; and a final piece utilising a group of smaller instruments including shakers, tambourine, hand drums, bass kalimba, finger cymbals, chime bowl, and a guitar in disrepair. Between each of the improvisations they reflected on what they had just played and related past experiences brought to mind; this was usually followed by their establishment of criteria for the next improvisation. The first 3 improvisations occurred on Day 1, the final improvisation on Day 2, after which we watched all 4 improvisations on video and had further discussions.

Phase 2: Participants, settings and procedures

Two girls from European–American backgrounds, Katherine and Evelyn, age 7, who were enrolled in the same keyboard class at a privately owned and operated community music school, were identified as possible participants by their teacher. She was asked to make her choice based on the following criteria: Participants needed to (1) be female; (2) be members of the same music class for a minimum of 1.5 years; (3) display a comfortable rapport with one another; (4) show an interest in class projects involving creativity; (5) have parents willing to be involved in the project. The procedure used in the adult phase was replicated, with minor adjustments, for the children. I spent a full day with the children in a familiar environment, Evelyn's home. As with the adults, musical materials included both conventional and novel sound sources; these resulted in a suite of short pieces for electronic keyboard and an extended work for percussion instruments. Children were first invited to 'make up music together' on the keyboard(s) and then to do the same with the collection of percussion instruments that included chime bars, various drums, shakers and wooden cylindrical xylophones stirred with small wooden mallet.

Phenomenological analysis

The reflective commentary provided by the participants was collected in the form of unstructured group interviews (discussions) and served to help focus the analyses on the most salient aspects of the performance content and processes. All unstructured interviews were audio taped and later transcribed, performances were audio-and video-taped to aid in both reflection by the participants and for researcher interpretation.

Performance transcriptions were done simultaneously with analysis, and involved repeated listening to the pieces and mapping them using a combination of standard notation and iconic figures. The mapping of the score revealed how the qualities along the horizontal axis of time interacted with those along the vertical axis of space, and how

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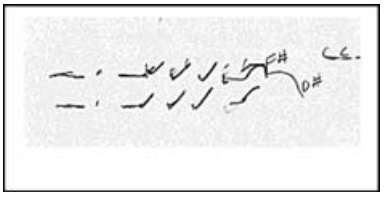

Fig. 1 Sample of graphic transcription from opening of 'Elaine Foreground'.

the collaborations were musically responsive and receptive to the musical cues of the performing partner. Additionally, each adult participant provided a selection of her own writings and recordings for review, which provided further insight into their ways of being with music and musicians.

The analytic process followed Denzin's (1989) steps to interpretation, which included capturing and bracketing the phenomenon – the improvisational process/product – and then constructing it and putting it into context. The following sections reflect the last two steps: the improvisational experiences are constructed through descriptions of each piece using the phenomenological lenses of time, space, and responsivity and contextualised in a lifespan framework of origins and expertise, exploring qualities in and between the adults and children.

Descriptions of improvisational pieces

Phase 1: Adult composers AP and EB

NUMBER ONE: 'Elaine Foreground' (Duration: 16 minutes)

Getting started proved to be one of the greatest challenges, due to the participants' trepidation about being exposed on camera. A solution came when Alexandra (AP) moved to a back room where there was another piano and started playing, leaving Elaine (EB) in the front room, foreground to the camera and audio. EB slowly approached the grand piano, stood and played large open sonorities that were playfully inhabited with shorter musical flourishes by AP. There were rare, brief imitational responses. Both performers were noticeably patient: during long pauses there was suspended stillness in which EB's attention was visibly concentrated, her attunement regulated with either closed eyes or gaze directed at the piano. At about 13 minutes, AP entered the front room with a small bell, transgressing the boundary of physical space, and suggesting a denouement where difference, or at least distance, was reconciled. She slowly and playfully encircled the room, ringing the instrument for about 1 minute. Setting the bell down, she found some pebbles, carefully rocking them between her hands to counterpoint the piano sounds. A louder, insistently cadential drop of pebbles was followed by a coda with simplified harmony and texture in the piano, and the addition of a metronome and the opening and closing of a drawer by AP. A subtle splashing of water in a cup, followed by a long silence, concluded the piece.

Time was characterized by layers of beginnings and endings: those defined by the duration as well as changes in tone colour and qualities of surface rhythms. Between an emergent, stealth-like beginning and a curiously insistent approach to closure that

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eventually faded into silence, continuity was shaped by textural and temporal fluctuation. Space was characterized as both individually created and collectively experienced: EB created a personal space, evident in her focused physicality around the piano; foreground and background roles were offered and transgressed both in the music and in physical positioning. Responsivity to instrumental timbres, kinaesthetic feedback from the instruments, and acute listening to one another as evidenced in pitch matching, clearly guided the musical processes. Excerpts of this piece and others discussed in article will appear on the next CD to be issued with the journal.

NUMBER TWO: 'Alexandra Foreground' (Duration: 10 minutes)

For the second piece, the performers decided to switch places and set a time limit of 10 minutes. After a few false starts, this piece began with a flurry of musical dialogue – quick rhythmic gestures in a variety of registers were answered through imitation and expansion. One example of this thematic expansion was a trilled semitone figure, first introduced in sustained form by AP as the 'grundgestalt' opening the piece, later reprised as an embellishment, then appropriated by EB who broadened the surface temporal quality to a slow ostinato figure. AP broadened the motif's spatial quality by expanding the intervallic structure to a 3rd, in foreground counterpoint to the more sustained sound. The overall collage effect culminated in the surprise introduction of the 'antique' guitar timbre, plucked and strummed by EB, as she entered the foreground space, as AP had done in the previous piece.

Compared with the first piece, musical time in this piece was condensed, reflecting a sense of urgency possibly due to the time limit, while also retaining a sometimes diffused quality, as heard in the long pauses similar to the opening. The performers were able to accurately determine the agreed-upon time frame, and reflected on 'listening for endings' the last half of the piece. Horizontal elements of musical space were evident, the layering of beginnings and endings created overlaps of sound. The character of musical responsivity was playful, as exemplified in the tossing back and forth of thematic material in new guises.

NUMBER THREE: 'Barkin', Barkin, and Pierce' (Duration: 8.5 minutes)

At last the two performers were seated together at the same piano, EB at the right. The performance might best be described as a dance – the four hands moved with graceful gestures over the keys. The visualisation of sound – its preparation and release – was communicated to the observer, and seemingly the performance partner, through the physical embodiment of the music's character. At about 1.5 minutes into the piece, the duet became a quartet: AP's two dogs joined the sonic landscape and continued until the conclusion. Their chorus was familiar to AP; EB was notably distracted at first, worried that she had inadvertently provoked them, but with quiet assurances from AP, who had continued in the music space, she carried on. The close proximity allowed for much observable playfulness, including (a) crossing arms to trade registers, prepared by AP with repetitive hand movements (her four fingers acting as one unit lightly and repeatedly touching the thumb) as she edged over EB's hands; (b) silently depressing lower keys to allow upper sounding keys to resonate with a fuller spectrum of overtones; and (c) musical

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responses, perhaps interpretable as imitation, to the dogs' barking. The final cadence, with slowing harmonic and surface rhythms, reflected a submission to the canines' tenacity.

The continuity of musical time as experienced in the previous pieces, was interrupted by the dogs' insistent, uninvited interjections. These environmental cues required a resolute state of consciousness marked by an observable determined complete presence, the seeming randomness making anticipation impossible. Musical space and experienced space were mutually influential as the new proximity of the performers created a context for new sound possibilities such as the overtone episode.

NUMBER FOUR: 'Toys' (Duration: 17 minutes)

This multi-timbred work was marked by exploration: performers plucked, strummed, shook, scratched, rubbed, dropped, struck, stopped, and tapped instruments. Form was shaped by sound combinations of kalimba/bell-cymbal/shaker, the addition of wood, guitar/bell, guitar /tambourine, and guitar/shaker. A playful, recognisable style emerged as EB's guitar sang appoggiatura-ridden melodies over AP's rhythmic and insistent tambourine, creating a Middle Eastern reminiscence identified in later reflection. Salient timbres defined leader/follower roles; several times within the piece there were technical 'borrowings' between instruments, as in the harsh wood sounds being answered by an uncharacteristic harshness in the shaker, and a sustained guitar plucking response to ringing finger cymbals. The final cadence, anticipated by the accidental-made-purposeful dropping of the tambourine, seemed a bit curious to the performers and elicited reactions like 'cadences are fun' and 'they're sudden sometimes'.

The overwhelmingly percussive nature of the sounds, void of explicit melodic contour and tonal referencing, created a strikingly different sensation of time and space than was experienced in the piano pieces. Conventional harmonic and melodic conveyances of closure and motion were replaced by greater attention to shifts in timbre and rhythmic accelerations and prolongations. Responsivity was characterised by complement, as participants found connections to one another's sounds through emulating ways in which contrasting instruments were played, as in the resonance of finger cymbals and guitar strings. The lack of previous knowledge regarding instrumental capabilities led the performers to a more explicit curiosity of one another's actions and less predictability than in the previous performances.

Phase 2: Young piano students E and K

The child artists seemed to use similar strategies, especially evident in their percussion improvisation. They, too, changed the patterned flow when it seemed appropriate to do so; acknowledged, supported and ignored contributions from their performance partners; initiated new ideas; became silent. They responded to one another's performances showing responses reflecting both rhythms and timbres in the percussion improvisation, and anticipated harmonic rhythms and cadential formulae in their keyboard pieces.

NUMBER ONE 'Fooling Around' (Duration: 30 seconds)

Before they 'officially' began, Evelyn (E), sitting on the right side of the instrument, played a chromatic scale up the piano. Katherine (K) joined her at the end in parallel motion, and E seemed unaffected by the joining in.

NUMBER TWO 'Suite F G F'

A. Organum in F (Duration: 2 minutes 30 seconds)

After switching places on the piano bench and asking questions about what was expected, K took the lead and asked E to play the chords while she played the melody – seemingly due to their positions at the piano. They both placed their hands in a 5-finger position in the key of F (F G A Bb C); with her left hand, E played I IV and V7 chords in close position and short form (e.g., IV = B flat and D, played with the index finger and thumb of the left hand). They deliberately watched each other's hands and played organum style (one chord for each note of the melody). The resultant harmony sounded random, they seemed to be searching for a reason to make decisions for each pitch, an interpretation cued by their attentive anticipation without acknowledgement of success until the ending. They recognised and seem relieved to reach a cadence, with E ending on the tonic chord, and K ending on the 3rd scale degree. Their smiles indicated a common understanding of this idiomatic closure.

They played four more of these short pieces, each one having an increased sense of fluency. Additionally, their bodily movement, driven by the hand gestures, was increasingly synchronised – they were concentrating on this. Suddenly E played on the offbeat – this threw K off her path, and she stopped after a few notes, not waiting for a final cadence. They switched sides. One short piece is included as Example 6.

B. Melody in G (Duration: 2 minutes)

The change in roles marked a different sound: In addition to the new key, E's melodic performance with her right hand in the upper register was remarkably fluid, containing rhythmic variations within the duple metre. In the lower register, K, also playing with her right hand, was trying to fit in chords as she could. E did not adjust the temporal flow to make space for K's additions.

C. Back to F (Duration: 30 seconds)

They played a short tune in the Key of F with the same qualities as above. E took the lead with a continuous interesting melody. K added 3 chords and then begins talking again.

NUMBER THREE 'Concert Break' (Duration: 3 minutes)

With no conscious prompting from me, the children played something comfortably familiar, a unison rendition of 'It's a Small World', a piece they had performed at their last recital about 1 month earlier. Next, E played a tune she had memorised from her piano book. In an effort to introduce novelty, I suggested they play on two keyboards, aware that this technique had stimulated the adult composers. My suggestion was ignored, or at least postponed, while K took the opportunity to play her memorised song 'Lightly Row', and then moved to the other keyboard, looked at it for a moment, and returned to the first keyboard.

NUMBER FOUR 'Solo Time' (Duration: 2 minutes)

E improvised a piece in duple metre and in the F 5-finger-position. It got particularly interesting when she experienced some type of kinaesthetic delight in the contrary motion of her fingers on each hand – she continued this, varying the rhythm and finally cadenced in the RH tonic. The contrapuntal movement was notably different from the earlier chordal

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accompaniment. After she finished there was a silence. K looked up and asked 'What do we do now?' We decided to break.

NUMBER FIVE 'Toys' (Duration: 30 minutes)

As they began, both children seemed very focused on the instruments rather than their interactions with one another: K played the Native American drum with stereotypical rhythm: Strong weak weak weak / Strong . . . , and E played a melody on the kalimba. Soon, however, they became synchronized – mutually musically responsive, they looked at one another, sometimes matching rhythms played on different instruments, sometimes imitating. The most obvious sign of their collaborative efforts was how they coordinated beginnings and endings, changing (but not exchanging) instruments at the same time. There was no talking – the music had come to the fore and was the only means of communication. The matching and imitating gave way to complementary playing, where both players maintained their own creative integrity but joined together, moving to the same internal beat. They looked at each other and smiled, acknowledging the 'groove'.

The instruments they chose were kinesthetically pleasing and novel; it was not until 13 minutes into the improvisation that they used the tambourine (a more familiar instrument). Eventually they sought new ways to challenge themselves, which included expanded use of the instruments pattern constructions involving multiple instruments. In one particularly interesting episode, K played with the stir xylophone (a cylindrical wooden instrument that one 'stirs' with a wooden mallet) and shaker, and E played with finger cymbals. K set up a pattern and E added filler to the non-articulated beats. They switched roles intuitively and seamlessly, with K responding to the spaces in E's leading patterns.

Origins, expertise, and responsivity in adults' and children's improvisations

Analysis of researcher descriptions, transcriptions, and interpretations of performances using time and space imagery; participants' commentary on the improvisational process; and their own views reflected in earlier writings led to the emergence of several key issues. The role of expertise was the most salient: it contributed to the outcomes of the pieces in terms of both skills and experience in ways that facilitated and inhibited creative expression. Adult participants resisted its effects in favour of recapturing childhood ways of being, especially manifest through dispositions for engagement. Responsivity to the musical instruments, to the general milieu, and to performing partners contributed to the improvisational process and hence the content; it is explored through three experiential lenses viewing the musician at play, the musician in motion, and the musician in communication, respectively.

Expertise as experience

AP and EB expressed their self-perceptions of expertise in terms of past experiences with music, instruments and each other. Although there was a shared past dating 40 years which included musical collaborations, EB and AP each brought a varied background to the

improvisational process. From self-described 'different character types' attributed to their childhood neighbourhoods (the latter from Baltimore, the former from the Bronx in New York City) to differences in scholarship and compositional style, these collisions of expertise may explain both procedural difficulties of getting started – the performers needed to be in their own space – and the richness of content exemplified in the musically responsive textures and phrases. Bailey (1992) observed that the juxtaposition of personalities could ultimately result in rewarding musical experiences. The apprehensiveness of these two performers, an artifact from the methodological conundrum of making permanent a temporary art form, was dissipated by a mutual decision to contribute their own expertise to the common work through a commitment to listen, receive and respond.

Like the adult performers, E and K also brought their individual personalities to the process, honed by 7 years of interactions with people and material resources. E was independent, and focused her attentions on the physical qualities of the music. This was different from K, whose conceptions of expertise seemed more specific to conventional uses of the instruments. Additionally, although they did not play in separate rooms, in many ways it took time for the two young improvisers to play together – one would lead as the 'foreground' while the other chose to try and follow.

With more limited musical histories than the adults, E and K demonstrated expertise reflective of their experiences with deliberate formal instruction and the enculturation processes of everyday life. They were much more free and musically expressive with the instruments for which they had had no formal training, as opposed to the piano, whose wide pitch range, nuanced timbral possibilities and even rhythmic potential were virtually unexplored. The piano, at least for K, had associations with specific habits of interaction – she was quick to take out staff paper upon hearing that the task was 'to make up a song'. Both children's creative efforts at the keyboard demonstrated a self-perception of expertise reflective of the repertoire they had learned: 5-finger patterns with simple chordal accompaniment and the playing of memorised pieces in 'Concert Time'.

Childhood origins as dispositions for musical engagement

Both AP and EB have expressed in their scholarly writing the need to draw upon naïve forms of knowing in order to truly free themselves to create. AP provided this definition of improvisation a few days after our session. Note the allusions to childhood traits – curiosity, absence of fear, trust.

> *Improvisation, for me, begins as a looking-forward-state-of-curiosity, coupled with an inwardly decided-on absence of fear. Once begun, the improvisatory spirit continues as a deliberately chosen freedom from negative inner comments as I hear occurrences that aren't (objectively) 'good' or musically engaging. Overlying this unfearful trust (confidence) in unfolding events is a self-encouragement (ongoingly recharged) to awaken responsiveness to the moment and to its evolving context.*

Similarly, in an address delivered to the Taiwan Composers' Forum, EB said

> *The original concern was not to find yet another way to compose music but to find a way to be an inhabitant in a world of music . . . whose content reflects the shared experiences of its participants, interacting with and supporting one another, where*

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> *the search is for community rather than audience; where technique, as it is usually understood, is neither a necessity nor a virtue; where conventional musical abilities are neither required nor prohibited; where idiosyncrasies and so-called imperfections are permissible . . . (Barkin, 1989: 2)*

In this study, EB was aware of her own self-consciousness as well, expressing an ideological resistance to what was undeniably present: 'On the one hand, I might say, there are no mistakes, and on the other hand 'I wish [I didn't do that]'. . . [it's as if you are] naked, naked, absolutely naked.'

In addition to this search for freedom from the cloak of predictability and convention, EB and AP were playful, as in the hand exchange in the 3rd improvisation, and were attracted to the novelty of sound, purposefully opting for the small bell or guitar in need of repair. The percussion instruments invited different types of child-like explorations that had the patina of expertise, with nuanced explorations and an easier acceptance of mistakes – when the tambourine accidentally fell to the floor, it was not a mistake, it was a cadence.

For the two children in this study, it was clear that instruction mediated what was considered to be childhood dispositions for playful and focused engagement with musical sound. The two sets of materials provoked quite different styles of improvisation. In the first context, they were focused on the challenge of getting it right – K asks questions to clarify and E just begins playing to find the 'rightness.' In the second, they both were attuned to the musical outcomes and responded more to each other's sounds and the kinesthetic feedback from the instruments than to preconceived expectations. The prolonged non-verbal attentiveness seemed to suggest a focus (a 'looking-forward-state-of-curiosity'); the variety of timbres and physical properties of the instruments provoked imagination not present in the piano improvisations.

Responsivity to musical instrument: musician at play

Expertise involves learning how to regulate, whether it is demonstrating control of one's technical facility or being able to internally monitor emotional responses (Kenny & Gellrich, 2002). The relationship between musicians and the objects used to make music is also associated with expertise; however, in improvisation, it seems these performers strove to resist the conventional approaches and truly 'forget we know how to play' as EB offered, hinting again at the return to childhood origins. AP lamented about the few places in which improvisations 'spilled into obvious metaphor – the hands know this', meaning that patterns that fit well into the hand were unavoidable but not preferred. EB referred to the cross-handed overtone play of the third piece as the 'Piano playing game' and described it as a 'very rationalised' way of exploring, revealing an association between (adult) logic and expertise.

Unconventional instruments utilised in the final piece provided opportunities for physical response more attuned to an origins stance, prompting reflective discussion about how potential for sound was perceived in an object. AP commented on wondering about the 'sound of a look of something'; EB found herself asking, 'What can I do with this?' When questioned about what stimulated past improvisations, they responded by describing situations that included the exploration potential of new sound makers. AP

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offered, 'characteristic of the past, you [EB] would say 'I've got something, I'll bring it.'' Both performers shared a sense of wonder and curiosity about the experience with instruments. AP mentioned a 'delight in musical sounds', and EB took a decidedly origins stance: 'an instrument is something . . . sort of by itself, . . . you're not sure what kind of sound is going to come out, so . . . you have an idea of what the piano is going to sound like [when you play], that doesn't mean every time you do it's going to sound the same.'

Adults in this study expressed their resistance to certain idiomatic sounds – they mentioned more about the avoidance of conventions rather than the use of them. Children on the other hand, embraced convention, finding comfort in the discovery of the familiar. They used specific rhythms with specific instruments, for example, the Native American drum, which seemingly came from their enculturation with music. Conventions utilised in the piano improvisations were directly from the children's instructional setting. For both groups, the percussion instruments gave more opportunities for exploring idiomatic sounds as a type of dramatic play, as in the Mid-eastern timbres leading to improvisation on eastern scales.

Responsivity to time and space: Musician in motion

AP has written extensively on movement as core to our existence as music makers.

> The moving response of the performer to the music he is playing – his dance through space, turned inward, channeled, and transformed – optimally penetrates each note and emerges in its sound. Through this transformed movement the affective life of the music becomes manifest. (Pierce, 1983: 104)

Viewing the adult performer's bodies in relation to musical time, space and responsivity provided clues to interpretation: Important junctures had the sense of being choreographed, and cadences were articulated by the rhythmic gesture of a hand striking keys or resting on the strings. In reflecting on 'Barkin', Barkin, and Pierce', AP noted the anticipation evident in the smallest of finger movements and EB commented, 'The most interesting activity came from movement'. However, limiting oneself to interpreting the perceived embodiment of others seemed to infer a less than fully thoughtful response; AP commented on reading visual cues from performing partners, that it was often 'too compelling to pick up a rhythm of a gesture'.

Whereas the adults seemed to physically represent their music in ways that were interpretable as either choreography or as a visual score image, the children in the study represented the music they made in response to the sounds they created – the physical play with instruments was very much about feeling the motions required to create sound. E experienced this playing in contrary motion. The synchronisation of their body movements with the increased sense of fluency marked the embodiment of musicality heard in their performances in the latter piano performances and in the improvisations.

Responsivity to partners: Musician in communication

For the adults, each example had qualities of reaching out, reflecting inter-subjectivity, and reaching in, reflecting intra-subjectivity. Negotiating these two ways of being, the former

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inherited from childhood and the latter from expertise in the form of self-knowledge, led to participants' descriptions of shared improvisation. AP posed that the goal was to 'give someone else their space and *joyfully* (rather than creepily) take your own', acknowledging that this was difficult. She interpreted the open sonorities offered by EB in the first piece as 'inviting'. Expertise was represented in EB's recollections of teaching scenarios when she recalled wrestling with 'how I can stay where I am and still be a part of it'. The communicative and expressive aspects of musical performance were paramount in these sessions. EB commented 'So it's not so much [about] trying to improvise . . . I like to find myself trying to get to some place both musically and socially that I haven't been before, since it's very much a social activity.' Both participants noted the significance of being listened to, and the magic of 'being with another person and at the same time just being with yourself'.

Especially evident in 'Toys', the children in this study responded to each other in imitation and in complementary ways, as indicated in these descriptions of the video data:

> *Looking at one another they play matching rhythms on different instruments, they imitate, and most obviously, they change instruments at the same time, coordinating their beginnings and endings. There is no talking – the music has come to the fore and is the primary means of communication . . . Then they get into a groove – it is amazing and they know it – looking at each other and smiling, moving to the same internal beat. . . .K plays with stir xylophone and shaker, E plays with finger cymbals. They play K sets up a pattern – and E adds filler. Then they switch.*

Invitations to collaborate were interpreted as shared space by the adult participants; it was also important for them to retain their own musical integrity as they were positioned in foreground or background roles. Although not a salient factor in observations of these child participants, proximity has been considered in recent studies of constructed communities in preschool music classes, where situatedness was a conscious choice (St. John, 2004a, 2004b).

The two adult performers were clearly communicating within a common musical framework, their pieces shaped by pitch relationships, the offering and acceptance of musical spaces noted above, and expansions and variations of thematic material and timbre. Both players were clear that imitation and 'call and response' held no interest for them, and their playing reflected this. EB recognised this as a factor of expertise; in a discussion about working with younger musicians she acknowledged that the 'easiest thing in the world is playing along, imitating. I'm not interested in [that, although it] gives them a sense of belonging – you are being listened to!' Listening was at the heart of what determined content. They agreed, ''What do I hear?' was the essential question of musical experience, and discussed how they found themselves 'anticipating simultaneities'. EB commented on her performance in the third improvisation as 'a mix of hearing and being close together. [I had an] awareness of Alexandra sitting there'. Permeating the music making process was a subjective tension between origins and expertise, articulated by EB as 'always a level of fighting between creations already experienced with new'.

For both children and adults in this study, musical meaning was created from listening and responding – it was very much a result of their shared musical expertise and value

system and was a unique experience because of the relationship. For the children, the lack of verbal interjections during the 'Toys' improvisation, the sustained focus for such a long duration, and the recognition of synchronicity indicated that these experiences had musical meaning that demanded their full attention. Like the adults in the study, they negotiated differences in temperament through their music making, reaping the rewards of collective understanding.

Children as improvisers: Considerations for meaningful assessment

Based on the findings above, several statements may be made that have implications for the ways in which we assess children's improvisations:

- Improvisers bring to their performances a personal musical history that defines their (subjective) level of expertise.

According to Kenny & Gellrich (2002) improvisational expertise is developed through deliberate practice, the hard wiring of knowledge that becomes internalised and available to the performer. Childhood scholars posit an alternative view of expertise, identifying the individual's experience and self-perception as a knowledge base that has been largely underrepresented in educational theory and its reflective pedagogy (Canella, 1997). Considering children's past experience as expertise includes how music education itself might mediate children's improvisational approach and content: the influence of improvisatory experience on children's learning to play an instrument has been a topic of concern in music educational circles (Brophy, 2001), however there has been little research on how musical training might influence improvisation. Given that dispositions toward autonomous music making may develop early (Custodero, 2003), it seems important to consider the possible effects, both limiting and facilitating, that developing expertise might have on the content and processes of improvisation.

- Improvisers both resist and revel in conventions associated with their instrument.

There is evidence of children's cultural conventions in spontaneous singing, the sol-mi 'ur-song', recognisable to many as 'Nah, nah, nah, nah, nah' or 'You ca-an't catch me!' which is used functionally as a part of group play (Bjørkvold, 1989). Given the evidence in young children's musical play of a musical culture different from that of adults (Littleton, 2002) and the importance of the socio-cultural zeitgeist of the 'historical child' (Walsh, 2000), it figures that conventions children use in their improvisations could be idiosyncratic, revealing far more than could be understood from measuring the inclusion or neglect of adult conceptions of artistic mastery. Also, asking questions about the sources of ideas – for example, playing back recordings of improvisations for children and having them explain what and why certain passages were played – may reveal important information about musical meaning.

- Improvisers use strategies to maintain full engagement in the moment; such engagement precludes self-consciousness.

Observable in the children's percussion improvisational experience and in the adults' experiences were overt signs of concentrated listening and self-monitoring; such focus

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during improvisation has been attributed to 'flow' or optimal experience (Csikszentmihalyi & Rich, 1997). Characterised by heightened skill and challenge, flow experience represents an attention to expertise defined by the individual's perception of task; Csikszentmihalyi's (1993) contention that children are in flow most of the time speaks to the relevance of an origins stance. Studies of children's musical engagement and flow experience in classrooms have shown they are active agents, creating their own challenges by adapting musical tasks to suit their skills using strategies such as anticipation, expansion and extension (Custodero, 2000, 2005; St. John, 2004a). In this study anticipation was the most observable strategy used by the children in both contexts – in the piano examples K intently watched E to determine which chord she would play; with the small percussion, they were both anticipating when the other would switch instruments.

- Improvising can be interpreted as how performers provide and receive musical space. Such decisions involve negotiation of self-expression and responsivity, that is, maintaining one's own integrity while being generous and open.

Potential learning spaces described by both Winnicott (1971) and Vygotsky (1978) provide paradigms to address children's peer-to-peer scaffolding and personal agency to aid in understanding musical improvisation, yet are still relatively unexplored. Children improvisatorially use music to transgress unfamiliar physical spaces; it figures their imaginative, communal, transitional and knowledge-seeking use of space to improvise musically may be a worthy mode of inquiry. It should also be noted that before space can effectively be utilised, individuals must feel a secure sense of place (Ellis, 2004); the adult musicians in this study negotiated this need for a comfortable presence through physical separation.

- Improvisers embody musical meaning through their movement in space.

In Campbell's (1998) interview studies, young children consistently told the researcher about musical phenomenon by becoming that phenomenon. One 6-year-old child seemed metacognitively aware: after demonstrating how to play his imaginary slide whistle, he said 'I love the *feeling* of music, especially when it goes from low to high. It makes my tummy tickle, kind of like going up on a rolley [sic] coaster' (p. 87). Observations of children's free play observations also demonstrate embodiment: Littleton (1991) describes a scene where two girls began playing tambourines, eventually becoming the orchestra with tambourines on their heads, and cymbals in hand; they danced to the accented patterns they created in a mutual state of being the music. One of the most poignant moments in my own research was discovering a moment of embodiment caught by the videographer, in which a 4-year-old makes up a 'two-eighths, two-eighths, two-eighths, tahn' dance, in her body she becomes the articulated music. These spontaneous examples are less likely to occur as our 'expertise' begins to monitor and internalise such responses (Shusterman, 2004); like instrument playing, movement behaviours may be influenced by music education interventions and need to be investigated with this direction of effect in mind.

- Improvisers create a sense of formal structure through their shared understanding of what is musically meaningful.

The social ramifications of children's musical creations are relatively unexplored – how children create with different partners may tell us much about their lives. There are also indications that children's imaginative culture making may provide a vehicle for interpreting their musical work. Literature on both children's world making (Bruner, 1986) and musical play (Littleton, 1991; Moorhead & Pond, 1941–51/1978) indicate the importance of narrative structures in stimulating and maintaining children's interest.

If children's improvisations continue to be viewed with preconceived assumptions about adult models, there is a risk of missing the insight that Cobb describes: 'A child reads the imagery of experience and often perceives preverbally the logic of relationships that are overlooked in later, more formally fixed and intellectualized systems of knowledge' (Cobb, 1977: 34). By taking on a research approach that incorporates both origins and expertise, the current model calls for renewed commitment to methods and settings in which the time spent on creation, the pitch-space framework, the performing instrument and ensemble partner, crucial to authentic musical responsivity, all are determined by the participant. Such a commitment to viewing the data from the child's eyes minimises the risk of overlooking such 'logic of relationships'.

Musical improvisation may provide insights into a general educational framework, by suggesting a pedagogy where listening is paramount, and responsivity, a result of the moment's social and task-related affordances provided in learning environments. Honouring individual stances of origins and expertise in teachers and students is a practice enacted through trust, and becomes curricular as it is co-created as living text. Tagore noted this in 1926, when he wrote the 'first important lesson for children. . . [is] that of improvisation, the ready-made having been banished in order to give constant occasion to explore one's capacity through surprise achievements' (Tagore, 1997: 256). Lessons learned from the examination of improvisation in adults can be valuable to our understanding of children's creative endeavours as we consider the human processes with which music and other curricular areas are constructed, releasing preconceptions about specific idiomatic content, and attending to the expressive present.

Notes

[1] Urline is a term used by structural music theorists of Western music to describe the background skeleton upon which an entire piece is built – usually consisting of a 3–2-1 melodic line accompanied by I V I in the bass.

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