

***Sounds of Intent in the Early Years:* A proposed framework of young children's musical development**

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Abstract

Sounds of Intent in the Early Years explores the musical development of children from birth to five years of age. Observational evidence has been utilised together with key literature on musical development and core concepts of zygonic theory (Ockelford, 2013) to investigate the applicability of the original *Sounds of Intent* framework of musical development, intended for children and young people with learning difficulties, as an assessment model for all children in the early years. One hundred and twenty five observations of 58 children (aged 10 weeks to five years) engaging with music were taken in the form of video recordings over a six-month period within an early years children's centre. These observations were analysed using the original *Sounds of Intent* framework to determine whether the types and levels of engagement with music could be framed within the existing model and to identify areas of potential mismatch. A preliminary framework has been designed from which practitioners and parents can gauge their children's level of musical development in order to support them effectively.

Keywords

early years, musical development, music education, sounds of intent, zygonic theory

Introduction

The *Sounds of Intent in the Early Years (SoI-EY)* project was initiated in order to explore the musical development of children from birth to five years of age; it is an extension of the *Sounds of Intent (SoI)* research (www.soundsofintent.org), which investigated how musical abilities and engagement evolve in children and young people with learning difficulties (see, e.g. Vogiatzoglou, Ockelford, Welch, & Himonides, 2011). At the heart of both projects is a putative framework of

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musical development that is rooted in theory and research, and intended to be accessible and relevant to practitioners working in the field. Embedded within a wider online resource, the original *SoI* framework allows the musical abilities of children with learning difficulties to be assessed, as well as offering teachers and therapists ideas to widen children's musical experiences and promote progress. *SoI-EY* was set up in order to explore the potential relevance of the framework in the context of so-called "neurotypical" musical development. Evidence is drawn from three sources: the existing literature on the growth of musical abilities, observations of children engaged in musical activity, and "zygonic theory" (Ockelford, 2006, 2013)—a psychomusicological theory of how music "makes sense" that underpins the original *SoI* framework as well.

The *Sounds of Intent* framework of musical development

The *SoI* framework conceptualises children's engagement with music as occurring in three domains. These are *reactive* (children's responses to sound and music), *proactive* (children's creation of sound and music on their own) and *interactive* (children's interaction with others through sound and music). Within each of these domains, six levels of development are identified, ranging from a child seemingly making no response to sound or music, nor creating sounds intentionally, alone or with others (Level 1), to having the skills and knowledge of a culturally aware, technically advanced and expressive performer (Level 6). This vast range of accomplishment takes in all levels of musical engagement that may be observed within the population of those with intellectual impairment, from children with profound and multiple learning difficulties to young people on the autism spectrum, for example, who show exceptional musical skill. Therefore, it is a model that is inclusive, representing a broad range of creativity and supporting children who demonstrate their "intent" and engagement in a myriad of ways, depending on their individual path of development.

The three domains, as well as the six levels described above, were formed through a process of detailed analysis of hundreds of video observations of children with learning difficulties engaging in music within the classroom setting. These observations suggested that musical development was a multi-dimensional process, that children were seen listening and responding to sound; causing, creating and controlling sound; as well as making sounds through participation of others (conceptualised into the three domains of the model). Further observations were analysed to decipher whether children's behaviours could be mapped within these three domains, resulting in the levels of development.¹ The six levels of the *Sounds of Intent* framework for children with learning difficulties are outlined in Table 1.

The framework of musical development is depicted as a set of concentric circles divided into three segments, one for each domain (see Figure 1). Level 1 of the framework is innermost; Level 6 is on the outside. Segments are labelled "R" (for reactive), "P" (proactive) and "I" (interactive), followed by the number of the level concerned ("R.1", "P.3", "I.4", etc.). The circular model provides the "headlines" that define the columns in a matrix. Within the matrix, each headline comprises four "elements" labelled as A, B, C or D. Each element is a textual representation of musical engagement that may be observed within the child's developmental level and domain, underneath which it is aligned. The "elements" read and generally progress from A to D, which allows for development to be observed and recorded *within* a level. However, children may demonstrate more than one element of engagement per level as well as across domains. These "elements", as the domains and levels, were also the result of observational analysis of children engaged with music within the first *Sounds of Intent* project. Examples at Levels 1 and 2 are given in Figure 2. Therefore, looking at Figure 2, a child who is observed to be within the

Table 1. The six levels of musical development within the *SoI* framework, captured by the acronym “CIRCLE”.

Level	Description	Acronym	Core cognitive abilities
1	Confusion and Chaos	C	No awareness of sound
2	Awareness and Intentionality	I	An emerging awareness of sound and of the variety that is possible within the domain of sound
3	Relationships, repetition, Regularity	R	A growing awareness of the possibility and significance of relationships between sonic <i>events</i>
4	Sounds forming Clusters	C	An evolving perception of <i>groups</i> of sounds and of the relationships that may exist between them
5	Deeper structural Links	L	A growing recognition of whole pieces, and of the <i>frameworks</i> of pitch and perceived time that lie behind them
6	Mature artistic Expression	E	A developing awareness of the culturally determined “emotional syntax” of performance that articulates the “narrative metaphor” of pieces

reactive domain of Level 2, may demonstrate musical engagement at R.2.A, R.2.B, R.2.C, or R.2.D. It should be noted that these elements are not exhaustive, but can be used as a starting point to inform work or assessment.

The current literature on early years musical development and its relationship to the Sounds of Intent framework

The literature on children’s early musical development played an important part in the creation of the original *SoI* framework (Ockelford, 2008) and it contributes to the bank of evidence for the *SoI-EY* model. Interest in children’s musical development is ongoing, with research that extends from prenatal experiences onwards, and studies to date indicate that a full account of music in the early years should begin before birth. Therefore, an understanding of how foetuses respond to music in the third trimester of pregnancy can guide practitioners and parents as they seek to introduce music into their children’s lives as early as possible. A general overview of the literature follows and a discussion of its relation to the *SoI* framework.

From around 26 weeks, the auditory system is fully functioning, and foetuses respond both to internal and external sounds (Graven & Browne, 2008). Studies undertaken during this developmental period have used stimuli such as the mother’s voice, other speech and music (see DeCasper, Lecanuet, Busnel, Granier-Deferre, & Maugeais, 1994; Kisilevsky, Hains, Jacquet, Granier-Deferre, & Lecanuet, 2004; Lecanuet, 1996). Foetal learning is indicated since infants soon after birth have been shown to respond differentially to auditory stimuli presented *in utero* (DeCasper & Spence, 1986), exhibited a preference for their mother’s voice (DeCasper & Fifer, 1980), and recognised music to which they were systematically exposed in the womb (Granier-Deferre, Bassereau, Ribeiro, Jacquet, & DeCasper, 2011; Hepper, 1991; James, 2002; Partanen, Kujala, Tervaniemi, & Huotilainen, 2013; Wilkin, 1995). So even at this very early stage, we see sound and music eliciting responses, and babies beginning to show preferences, corresponding with Level 2 of the *SoI* framework.

The literature on music perception in the first year of life is extensive and offers insights into children’s early cognition of musical sounds and structures. Trehub (2010) provides an overview of research in this area from the 1970s onwards and notes infants’ ability for

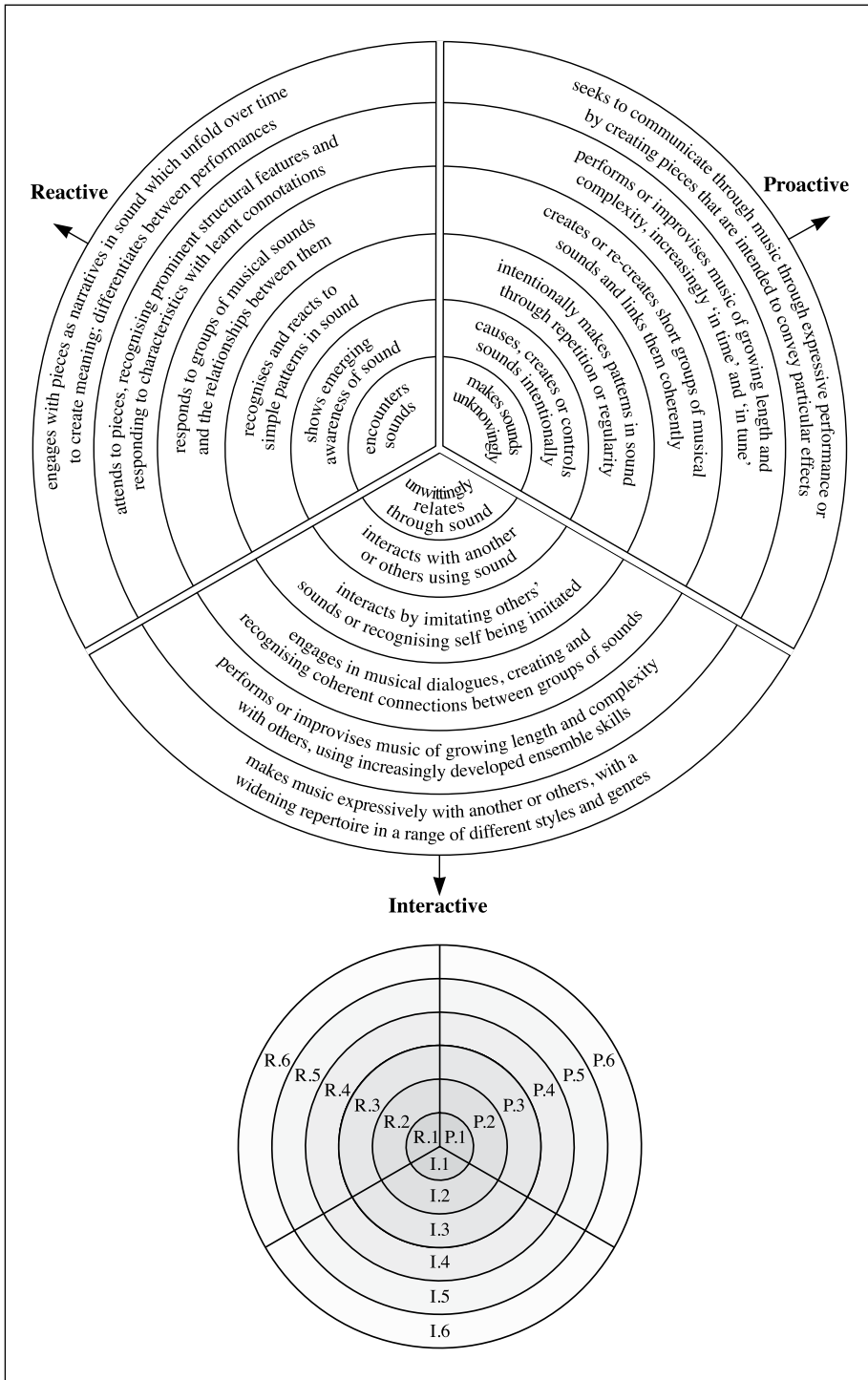


Figure 1. The SoI framework of musical development intended for children and young people with learning difficulties.

		Segments									
		Level 1			Level 2						
Elements		R.1 <i>encounters sounds</i>			P.1 <i>makes sounds unknowingly</i>			I.1 <i>relates unwittingly through sound</i>			
		R.2 <i>shows an emerging awareness of sound</i>			P.2 <i>makes or controls sounds intentionally</i>			I.2 <i>interacts with others using sound</i>			
		A	R.1.A is exposed to a rich variety of sounds			P.1.A the sounds made by life-processes are enhanced and/or involuntary movements are used to make or control sounds			I.1.A practitioners seek to stimulate interaction by prompting with sounds and responding empathetically to any sounds that are made		
			R.2.A shows an awareness of sounds – potentially of an increasing variety			P.2.A makes sounds intentionally, potentially through an increasing variety of means and with greater range and control			I.2.A sounds made by another stimulate a response in sound		
			R.1.B is exposed to a wide range of music			P.1.B sounds are made or controlled through co-active movements			I.1.B practitioners model interaction through sound		
			R.2.B makes differentiated responses to the qualities of sounds that differ (eg. loud/quiet), and/or change (eg. get louder)			P.2.B expresses feelings through sound			I.2.B sounds are made to stimulate a response in sound by another		
		B	R.1.C is exposed to music in different contexts			P.1.C activities to promote sound production and/or control occur in a range of contexts			I.1.C activity to promote interaction through sound occurs in a range of contexts		
			R.2.C responds to musical sounds increasingly independently of context			P.2.C produces sounds intentionally in a range of contexts			I.2.C interactions occur increasingly independently of context		
		C	R.1.D is exposed to music and musical sounds that are systematically linked to other sensory input			P.1.D some activities to promote sound production and/or control are multisensory in nature			I.1.D some activities to promote interaction through sound are multisensory in nature		
			R.2.D responds to musical sounds linked to other sensory input			P.2.D produces sounds as part of multisensory activity			I.2.D interaction through sound involves activity that engages the other senses too		
		D									

Figure 2. Example of elements within the *SoI* framework for Levels 1 and 2.

structural processing in the domains of pitch and perceived time: young children can perceive patterns and will mentally group sounds in relation both to melody and rhythm (*SoI* Levels 3 and 4). Other studies have shown that infants as young as two months can distinguish a simple familiar melody from a new one, indicating that they are “sensitive to the sequential pattern information in melodies” (Plantinga & Trainor, 2009, p. 3) and at eight months are able to detect diatonic and non-diatonic changes to a melody (Trainor & Trehub, 1992). In terms of rhythmic organisation, children of seven months have been shown to be sensitive to metre (Hannon & Johnson, 2005) and exhibit preferences, but only when bounced to the pattern of twos or threes to which they are listening (Phillips-Silver & Trainor, 2005). It has even been suggested that neonates may be capable of hearing the downbeat (Winkler, Håden, Ladinig, Sziller, & Honing, 2009).

As well as children's responses to music, studies have also explored their expressive musicality, ranging from infant's cries to babbling and singing. For example, it has been suggested that babies' cries have certain melodic features (Wermke & Mende, 2009), including contours similar to those of the native language to which they are exposed (Mampe, Friederici, Christophe, & Wermke, 2009). Infants' vocalisations have been investigated as a precursor to singing. For example, Papoušek (1996) notes the development of infants' babbling from vocal play, in which they show a "persistent motivation to reproduce sounds discovered by chance, and to repeat and modify their vocal products with overt signs of effort, eagerness, and joy" to "canonical babbling ... characterised by a much more restricted vocal repertoire than the preceding stage of vocal expansion due to the emergence and transitory prevalence of rhythmic syllabic sequences" (p. 105). This leads to "variegated babbling ... short well-structured melodies in which familiar musical elements are creatively combined into new patterns with distinct rhythm and accent" (Papoušek, 1996, p. 106). Infant vocalisations in the context of interaction have also been explored, with occurrences of imitation between caregiver and infant being observed (Papoušek & Papoušek, 1989). Indeed, imitation has been shown to occur before five months in terms of individual pitches (Kessen, Levine, & Wendrich, 1979), pitch contours (Kuhl & Meltzoff, 1982) and vowel-like harmonic resonances (Legerstee, 1990). Again, these examples of proactivity and interactivity through simple pattern-making and imitation are characteristic of *SoI* Levels 3 and 4.

The emergence of short, distinct melodic phrases in children's singing is followed by the development of longer structures, created through repetition (Welch, 2006), variation (Hargreaves, 1986) and the coherent juxtaposition of motifs from diverse sources, forming so-called "potpourri" songs (Moog, 1968). These are gradually replaced by songs that have an increasingly secure tonal and metrical framework (Hargreaves, 1986). Rhythmically, the ability to synchronise to an external tempo has been seen to occur in children from the age of four (Provasi & Bobin-Bègue, 2003). In relation to the *SoI* framework, we see here a move from Level 4 (the repetition, transformation and coherent concatenation of motifs) to singing whole songs in time and in tune (Level 5).

Reviewing the *SoI* framework in relation to the literature on early years musical development as a whole, it is evident that there are no reports of children functioning at *SoI* Level 1 (no response to sound or music) or Level 6 (mature engagement). However, Levels 2, 3, 4 and 5 describe musical behaviours and forms of engagement that appear to be well-established in the young "neurotypical" population, and the literature provides a general indication of when these phases may occur. However, the rate at which children develop musically appears to be particularly sensitive to the environments in which they live and learn (Ockelford & Voyajolu, in press). Tafuri (2008), for example, found that the ability to sing in tune may present itself much earlier than the age of five suggested by Hargreaves (1986), given substantial exposure to high quality and relevant musical activities from the outset. This suggests that the levels of musical development may be layered rather than linear and have fuzzy rather than clear-cut boundaries.

To summarise, evidence from the literature suggests that 1) it is the mid four levels of the original *SoI* framework (2–5) that appear to be applicable to "neurotypical" early years musical development and 2) although general age indicators of developmental musical milestones may be implied, a child's environment may have an impact on when and how these milestones are obtained. The next step within the project explored whether these inferences were also reflected in observational evidence of early years children within a "mainstream" context. This differs from the original *Sounds of Intent* project, which focused on observations of children and young people with learning difficulties.

The Sounds of Intent in the Early Years project

Following the literature review, observational evidence of children in the early years engaging in musical activities was gathered to and compared to the descriptors in the original *SoI* framework, to ascertain the extent to which this new observational data would support, extend or contradict the old model. The observations of infants, ranging in age from 10 weeks to four years, were made in a Children's Centre in South West London, serving the needs of local families with a wide range of socio-economic and cultural backgrounds. Video recordings were made of the children in action over a six-month period for two hours each week. These were supplemented with field notes that set out the broader contexts in which children's engagement with music occurred. Parental permission was granted for all children participating in the study, with an assurance of confidentiality and the opportunity to withdraw from the project at any time if desired.

As far as possible, the researcher adopted a non-participant stance, although within the informal setting of the Centre, with its emphasis on free-flow play, unsolicited interactions inevitably occurred. Data were captured on 58 children (25 boys and 33 girls), resulting in 125 separate observations. The mean number of observations per child was a little over 2, with a mode of 1, and range 1–8. These data pertain to 86 separate events (as some of the single 125 observations included multiple children); hence the mean number of observations made per activity was around 1.5. In order to capture all individual children within the study, observations rather than separate events were used as the unit of analysis.

These observations comprised "snapshots" of the children engaged in musical activity, either on their own or with peers or adults, spontaneously or within more structured adult-led musical activities such as circle time and informal performances by visiting musicians. Every effort was made to gather a broadly representative selection of material, without undue emphasis on particular forms or levels of engagement. When broken down, interestingly, 87 observations (69.5%) pertained to child-led musical activity, of which 44 (35%) were of children on their own, 35 (28%) were with another child or other children, and eight (6.5%) were with an adult, in six cases with the child alone (5%) and on two occasions (1.5%) as part of a group. Of the 38 adult-led episodes of musical engagement (30.5%), most of which were planned, although some arose spontaneously, 13 (10.5%) were with an adult alone, and 25 (20%) were in a group with other children.

A small team comprising the authors and an early years practitioner at the Centre, who was also the parent of one of the children, and was not a music specialist, observed the video clips. Brief descriptions of what was seen were agreed, and these were mapped, as far as possible, onto the *SoI* elements (see Figure 2). Therefore, the "snapshot" observations of musical engagement were determined and informed during viewing by their accordance with the *Sounds of Intent* framework domains, levels and elements as described earlier. Initially, it appeared that there were some instances of engagement that were not captured in the *SoI* framework. Following discussion, these were resolved as comprising talk *about* music (rather than participation in musical activity), or children occupying themselves in other domains, such as dance. Within the framework, talk about music insofar as it sheds light on a child's reactivity and dance may both be considered to be within the reactive domain. Hence it seemed that the *SoI* framework was sufficient to accommodate all 125 observations, although the whole framework was not used. In particular, as was found to be the case with the literature review, there were no instances of musical engagement observed at Levels 1 or 6. However, within the remaining 2–5 range, children demonstrated musical engagement at different levels within a single observation period – even within the same activity, as in the following observation:

A three-year-old girl is playing with a boy of similar age; they are sitting next to each other in the garden and they each have a drum. The girl taps her drum with a beater then reaches over and shows the boy how to do the same with his drum. She begins to play and he watches and copies. They play a simple duple pattern, although not always in complete synchronisation with one another (Level 3, interactive). The girl starts to sing Twinkle, Twinkle Little Star, with the correct words, in time and in tune, their playing becoming an accompaniment to the song (Level 5, interactive). The boy copies the best he can, singing only portions of descending phrases, not yet using words, but following the melodic contour (Level 4, interactive).

Furthermore, analysis showed that for those children in the study an increase in age corresponded with moving up within the levels of the *SoI* framework. As well as this, there were no occurrences in which children assessed to be at Level 5 were not also exhibiting engagement at Levels 3 and 4 or those at Level 4 who were not also deemed to exhibit capabilities at Level 3.

More specifically when considered by age group, within the project:

- From 0–9 months: children were all observed to be at Level 2 (children become aware of sound and the range of sounds that exist, including those pertaining to music; they develop a sense of agency in being able to make sounds themselves in an increasing variety of ways; and with having an emerging sense of self and other in the context of interaction through sound).
- From 9–15 months: children continued to engage at Level 2, supplemented by abilities at Level 3 (an awareness of – and the ability to produce – repetition and regular change involving individual sounds) as well as at Level 4 (the recognition and creation of imitation and transformation pertaining to groups of notes).
- From 15–21 months: children were seen to engage with music at Level 5 (children are likely to demonstrate the capacity to sing songs increasingly in time and in tune).
- From 21 months onwards (with the highest age being 51 months within the study): children were not reported to engage with music at Level 2. However, within this age range Levels 3, 4 and 5 were seen at least as far as 51 months (although in the current study, for children from 45–51 months, no instances of activity at Level 4 were reported).

Table 2 shows a selection of the observations that were made.

The Sounds of Intent in the Early Years framework

The full set of coded observations, the literature on “neurotypical” early years musical development, the original *SoI* framework, and the principles of “zygonic theory” (Ockelford, 2006) were brought together to produce a first version of the *SoI-EY* framework.² Initial feedback on the potential viability of the new framework was obtained from two seminars of early years practitioners held in London during 2014. Two main findings emerged: first, that the language (which was very similar to that used in the original framework) should be simplified as far as possible, since many of those who would be likely to use *SoI-EY* would not be trained musicians, and that the matrix of elements should be presented visually in a way that made the connection with the headline descriptors (set out in concentric circles) more explicit. The resulting representation of the framework is shown in Figure 3.

For example, Level 2, reactive (R.2) reads “[Children] show an emerging awareness of sound”; Level 3, proactive (P.3) reads “[Children] make simple patterns in sound intentionally”; and Level 4, interactive (I.4) reads “[Children] engage in musical dialogues using distinctive chunks of music”. Element R.3.D is “[Children] link particular sounds with events, places or

Table 2. Observations with corresponding *Sol* levels, children’s age and gender.

Description of musical engagement	Child’s age (months)	Gender	<i>Sol</i> domain	<i>Sol</i> level	<i>Sol</i> element
Appears transfixed as the recorder is played to her.	6	F	R	2	B
Explores the small keyboard in different ways, playing clusters of sounds with his right hand and individual notes using his index finger.	12	M	P	2	A
Explores the drum’s surface, tapping it with his hands.	9	M	P	2	A
Has a go at strumming the harp after it has been played for him.	18	M	I	2	A
Strikes the keyboard with the flat of his hand in response to the clusters of notes made by another child.	12	M	I	2	A
During an impromptu music session in the baby room the practitioner begins to chant a song about a bubble growing bigger and bigger before it pops. She repeats the word “bubble”, each time getting louder and louder, before clapping loudly once, simultaneously exclaiming “pop!”. With each repetition of the word and increase in dynamic level the child gets more excited, jumping up and down, then clapping and squealing with the final “pop!”.	14	M	R	3	C
Plays a steady beat on the drum while he walks in the garden.	30	M	P	3	A
Copies another child by making sounds with his voice through a tube that he holds to his mouth.	17	M	I	3	B
Plays the drum, copying her friend, imitating his changing beat as he plays faster and louder.	39	F	I	3	D
An adult spontaneously sings a short song made up of repeated phrases; “I can shake, I can shake, and I’m having lots of fun. I can shake, I can shake, can you?” The child copies her shaking movement and smiles at the end of each phrase.	17	F	R	4	B
Repeats a short musical motif after reading the lyrics to a song that she learnt during Black History Month.	42	F	P	4	B
Makes up a tune about the toy bird he is playing with, singing and repeating short phrases about the bird “flying away”.	36	M	P	4	B
While playing with the blocks, a child begins to sing a short phrase. Another child picks up the tune and begins to sing as well, and they repeat the phrase back and forth as they build towers and knock them down.	47	M	I	4	B
A practitioner plays a descending scale on the white notes of a keyboard, and Child 9 copies, changing the sequence from slow to fast. This interaction continues in a pattern of turn-taking.	31	F	I	4	D
A practitioner sings the song <i>Rolly Poly</i> for the children, which they know well. The second time through, it is performed very quietly. One child listens through the whole of the first verse and joins in the actions the second time around. She appears to understand the structure of the song, sometimes anticipating what is coming next.	24	F	R	5	B
Sings <i>Happy Birthday</i> as part of a game after making a cake with candles out of clay. His singing is in time and largely in tune.	42	M	P	5	A
A child is singing, making up her own text about Santa Claus to the tune of <i>Frère Jacques</i> . As she improvises the text, she changes rhythmic elements as well to match the words that she sings.	39	F	P	5	B
During a music session, a group of children are hopping along to a recording of a song. Child 12 spontaneously sings along with the female vocalist.	36	M	I	5	A
A new <i>Hello</i> song is being sung to the children during circle time. A child joins in, singing together with the practitioner; with each repetition of the verse she sings more confidently in tune and eventually taps along in time as well as singing simultaneously with others in the group.	48	F	I	5	A

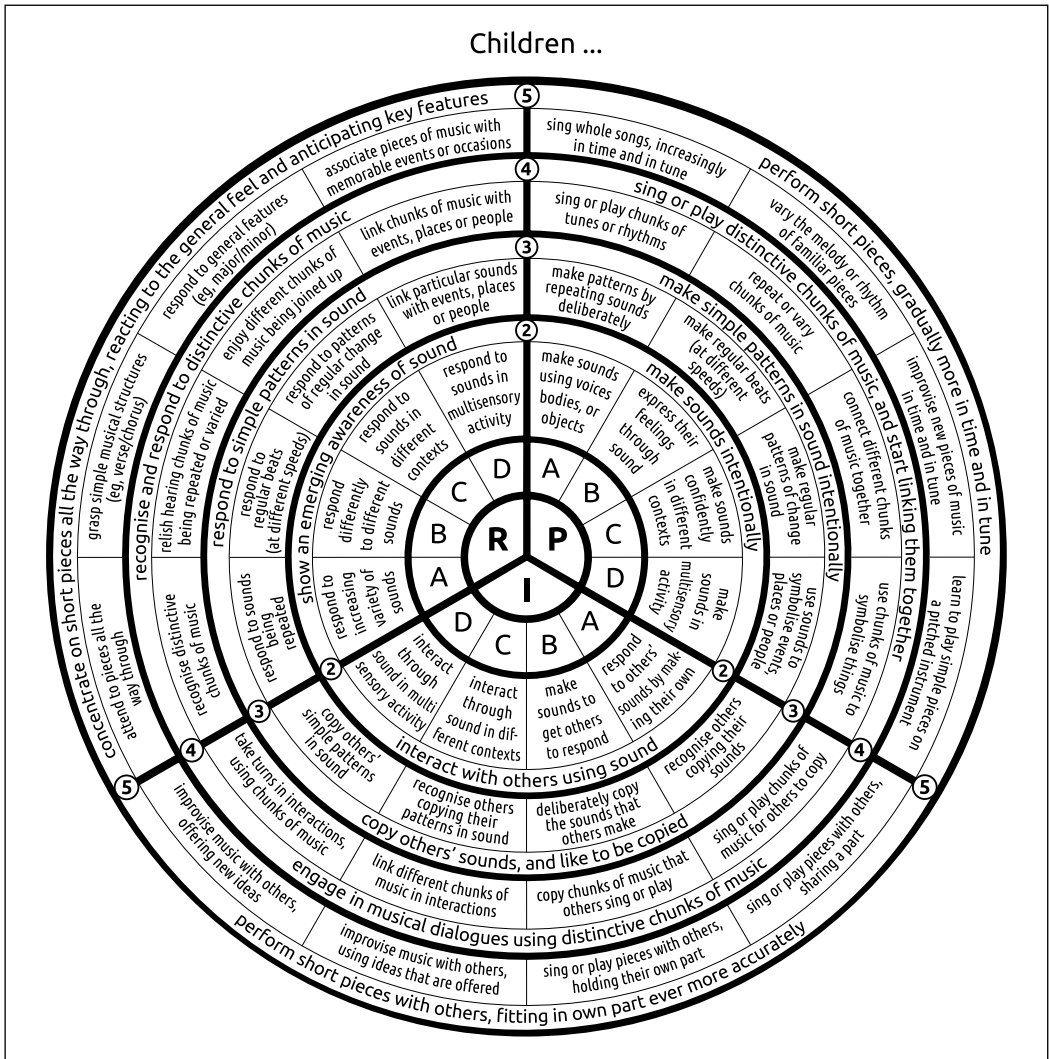


Figure 3. Sounds of Intent in the Early Years framework.

people”; P.4.C is “[Children] connect different chunks of music together”; and I.5.A is “[Children] sing or play pieces with others, sharing a part”.

Moving through the SOI-EY levels of musical development

In considering how children move through the levels of development set out in the framework, three models are reviewed here. The first depicts the possibility that children would become wholly competent at one level before moving on to the next. This scenario is illustrated in Figure 4.

However, detailed analysis of observations within the study suggests that development does not appear to be as clear-cut as that inferred by the above model. For example, a number of cases revealed a transition or shift between different levels, termed here as a “zone of

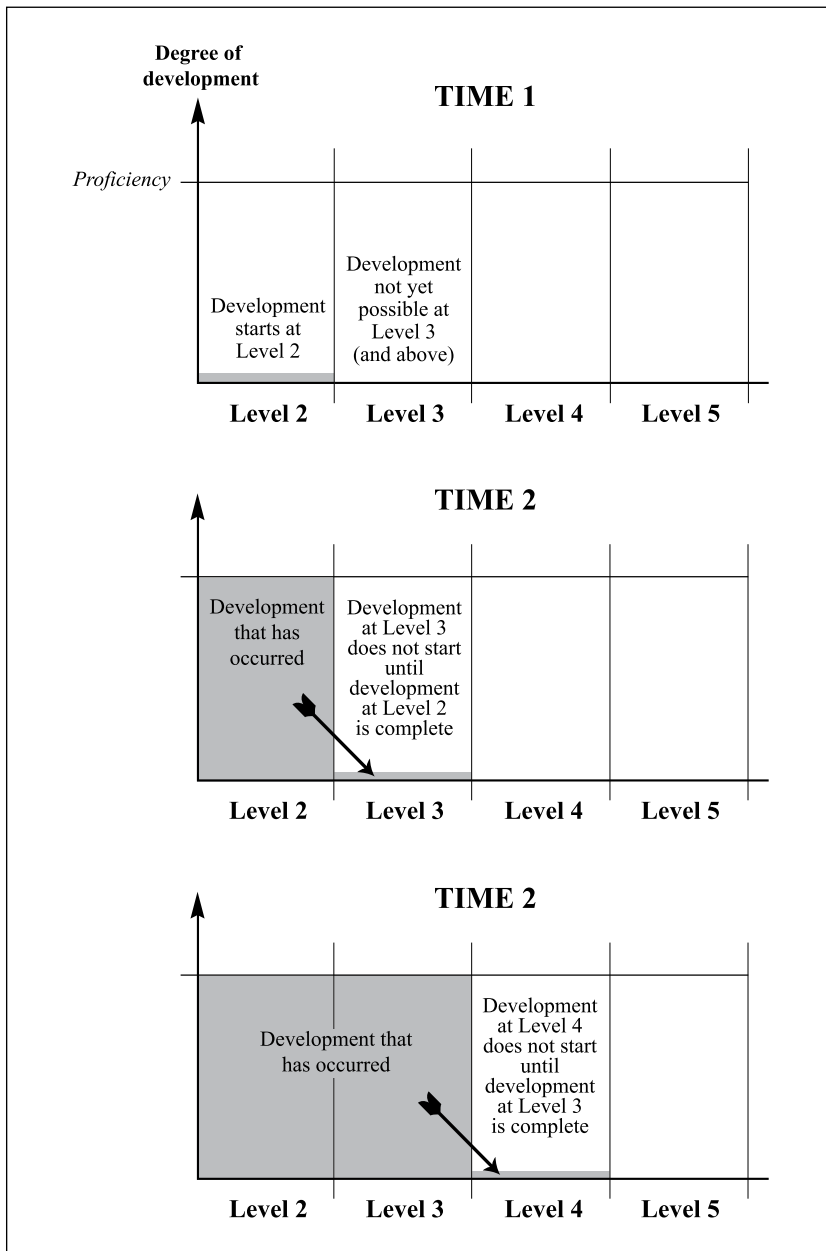


Figure 4. Illustration of the scenario in which development at a given level does not start until development at the previous level reaches a state of proficiency.

ambiguity”, occurring within one musical activity. We see this in an observation of a 3-year-old girl playing outside on her own, singing fragments of songs, stringing them together, exemplifying the concept of the “potpourri” song. She half-sings, half speaks the first phrase of *Roly Poly* (“Roly, poly, roly, poly, up, up, up”), a number of times. Her singing approximates the song’s

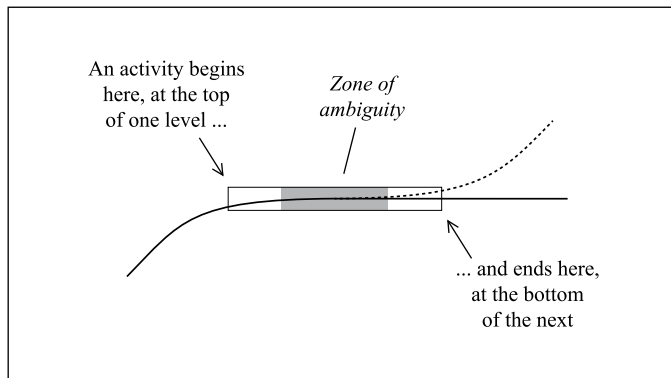


Figure 5. Transition from Level 4 to Level 5, with a “zone of ambiguity” between the two.

original pitch intervals, and there is no definitive sense of pulse. After several repetitions, the girl hesitates, and the last “up” becomes the first word of the second half of line one of *The Wheels on the Bus* (the words “up and down” replace “round and round” – Level 4). She repeats this motif (Level 4), before a clear rendition of the song appears, in which the major scale and binary metre of the standard version is recognisable (Level 5). It is difficult to determine where engagement at Level 4 ends and Level 5 begins, and there is a “zone of ambiguity” between the two (Figure 5).

A model of development depicting this transition between different levels is illustrated in Figure 6.

A third consideration, again found within detailed analysis of observations within the study, suggests that different *Sounds of Intent* levels may overlap in a child’s evolving musicality. This model (Figure 7) assumes that a more advanced level of development may begin before a lower level is complete. Such a phenomenon has also been found in differing aspects of language development (see Robinson & Mervis, 1998).

Examples of this overlapping model of development occur within the following three observed scenarios:

Scenario 1: An 18-month-old boy and two friends, supported by an early years practitioner, are playing with some pieces of Lego, exploring the range of sounds that can be made by banging them together and on the table. The practitioner shows the boy how to produce a rasping noise by rubbing a brick on a baseboard, first by modelling the action for him, and then helping him to do it hand over hand, before he has a go on his own. Although he finds the level of coordination required to rub the pieces together difficult to achieve, the boy manages to make some gentle scraping sounds. Picking up two more pieces of Lego, the practitioner sets up a regular beat, scraping her block to and fro on a baseboard. The boy tries to emulate her, with limited success

Scenario 2: A small group of boys and girls aged around 18 months, are playing with short lengths of cardboard tube that are wide enough for them to use as pretend loud hailers. The children make siren sounds, made up of motifs largely resembling a descending minor third, from F to D, although there is marked pitch variation in the second note.

Level 4

Zone of ambiguity

Level 5

Figure 6. Representation of activity that shifts between one level and the next.

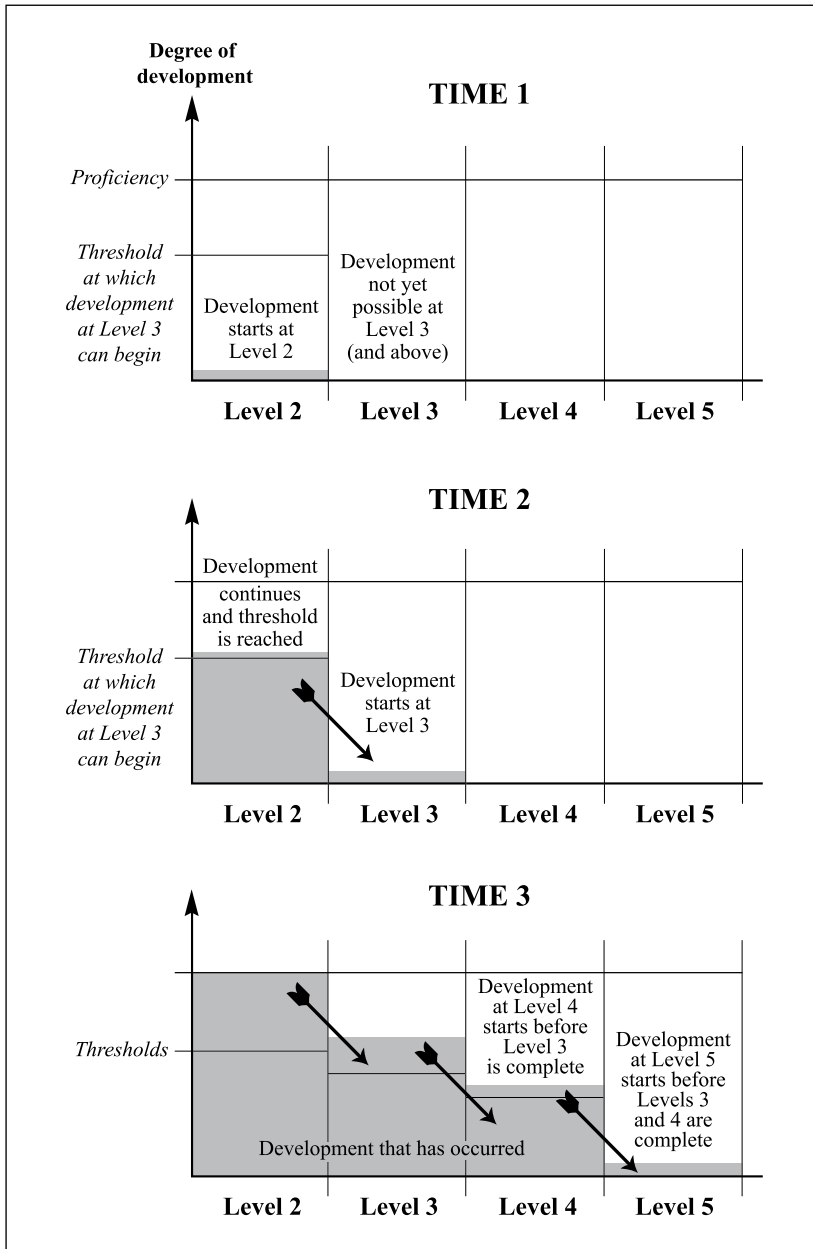


Figure 7. Model of music-cognitive growth in which it is proposed that *Sounds of Intent* levels may overlap in development.

Scenario 3: A girl aged 24 months, is playing outside on her own with some wooden blocks. As she builds a tower, she sings to herself, initially a repeated two-note descending motif (approximating to a minor third between F and D). The motif then becomes part of a longer sequence of notes that form a short, two-phrase song, which is underpinned by a pitch framework resembling that of the major scale.

Within Scenario 1 we have an example of a Level 2 activity, in which the child is exploring new ways of making sounds using objects. This early level of development is juxtaposed with a form of engagement at Level 3, in which the boy attempts to imitate a regular beat, although he is not yet able to do so with complete success. We see within this observation that musical behaviour at Level 3 occurs before proficiency at Level 2 is fully reached. Scenario 2 exemplifies a musical activity at Level 4 getting underway, in which the children attempt to copy groups of notes. However, development at Level 3 is not yet complete since the children are still learning to imitate intervals. Finally in the third scenario we have musical engagement at Level 5, as we hear an underpinning pitch framework, existing alongside activity at a still-developing Level 4 (and, indeed, Level 3).

The above scenarios depict examples of “overlapping” development, which occurred over the whole spectrum of the *Sol-EY* framework. While these scenarios illustrate the complex and overlapping nature of musical engagement and development that is held within a single moment, multiple observations over time and in varying contexts may provide a comprehensive representation of an individual child’s full range of musical development.

Finally, we suggest that both the overlapping model of development (Figure 7) and that in which there is a shift between two levels within one musical activity (Figure 6) may exist simultaneously. Consider that children do not function *only* at their most advanced level of musical development and that within each *Sounds of Intent* level different degrees of engagement are possible. Therefore, a child may be developmentally at “mid”-Level 3, still exhibiting musical behaviours that are less advanced and at the same time demonstrate continuity between Levels 2 and 3 within an activity. This model is depicted in Figure 8.

This final model is exemplified by a case referred to earlier in which a boy is making music with a friend, banging a drum and singing a fragment of *Twinkle, Twinkle, Little Star*. It has been noted that he was engaging in activity at both Level 3 (the regular beat on the drum) and Level 4 (the motif from *Twinkle*), demonstrating the concept of overlapping levels. However, there was also a transition *between* the two levels within the drumbeat, in that the continuous pulse (Level 3) broke off at the end of his vocal phrase, implying a simple form of grouping (Level 4). There is ambiguity here as it is not clear at which point he starts (intuitively) to consider the beat as a group, and this is, in any case, only evident to observers in retrospect.

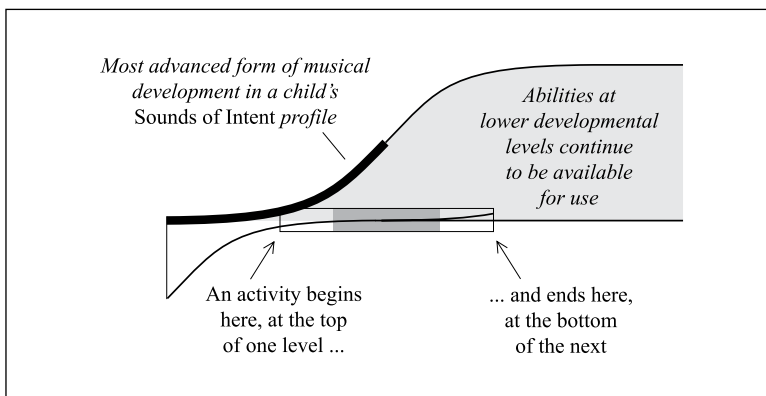


Figure 8. Activities that involve a continuity of engagement between levels are conceivable within the “overlapping” model shown in Figure 7.

There are varying factors that may contribute to a child demonstrating differing levels of development as suggested in the models above. One is simply that engagement with music and sound is in itself multi-faceted, a child may be able to sing a song in time and in tune (Level 5) and will very likely still have the enjoyment of copying sounds and patterns with others (Level 3), or engage with a new and unfamiliar instrument through exploration as in Level 2. The context of a particular situation, surrounding environment and the influence of peers and adults will also play a part.

The child's environment and the zone of proximal development

The importance of the environment on learning and development in the early years, including the effects of deprivation, has been established (Fox, Levitt, & Nelson, 2010). Alongside this, some systematic research has shown that a rich musical environment may have significance for a child's growing nature and level of evolving abilities (Hannon & Trainor, 2007; Tafuri, 2008). Within the current study two examples illustrate the importance of the environment on a child's musical achievement, focusing on the influence of scaffolding by an adult. The first example concerns the impact on a child's engagement within the timeline of a distinct activity, in the short term. The second suggests the possible impact that long-term support may provide. These examples are framed within the theory of Vygotsky's zone of proximal development. As Vygotsky puts it "The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state" (Vygotsky, 1978, p. 86).

The first (short-term) case refers to the 3-year-old girl singing *Roly Poly* discussed above (see Figure 5), in which she plays and sings on her own, repeating fragments of songs (indicating proactivity at Level 4), some of which are recognisably in time and tune (demonstrating aspects of Level 5). As discussed previously a transition between the two levels alongside one another, within one moment, was considered here. On another occasion the girl is observed to sing the same song, this time in its entirety. However, now she sings along with a group of children, led by an adult, demonstrating interactivity at Level 5; that is, she appears to be more fully engaged at this level when singing with others. In Vygotskian terms, the girl's zone of proximal development (ZPD) – the distance between the level of musical production that she is capable of achieving independently and that which she can attain with adult guidance or in collaboration with more advanced peers (Vygotsky, 1978, p. 86) – lies between *Sounds of Intent* domains P.4 and I.5. This musical ZPD, in the context of Vygotsky, does not assume that the girl's singing with an adult and older children has accelerated the rate at which her musical development occurs; rather, that repeated experiences of the group activity have allowed her skills to present themselves earlier than would otherwise have been the case.

Assuming the above suggested function of ZPDs are comparable for all *Sounds of Intent* levels, a path of musical development has been modelled (Figure 9), in which musical reactivity precedes proactivity and interactivity, a path similar to that found in language development. Specifically, knowledge and perception are internalised through listening experiences within the reactive domain, before being externalised through engagement in the interactive domain. If the child's initial efforts are supported by others they are then realised proactively, demonstrating the ability and confidence to create or replicate material alone. However, data from the *Sounds of Intent* project with young people with learning difficulties suggest that at higher levels of the framework there may be some aspects of performance, for example, involving the conscious practice of skills, where the opposite shift occurs. In these cases a path is followed from the proactive to the interactive domains. For example, improvising in ensembles by

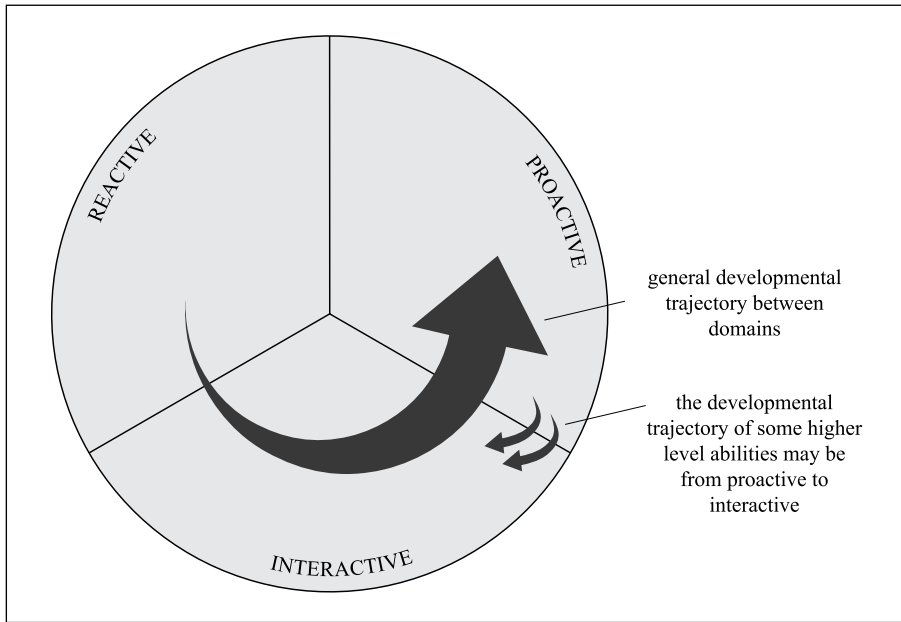


Figure 9. The postulated trajectory of musical development across domains.

maintaining an independent part (I.5.B) is an advanced ability that builds on the capacity to improvise on familiar pieces of music in simple ways – something that may well be tackled first on one’s own (P.5.B).

The second (long-term) case, in which a child’s environment appears to have an impact on musical development, is provided within the case of a boy of 21 months. The following was observed:

A boy sits on his own in the baby room of the nursery, playing with “Stickle Bricks”. He spontaneously starts to sing Twinkle, Twinkle, Little Star. Although many of the words produced are approximations in sound (the effect being rather like a continuous stream of changing timbres that only partly resembled the customary pattern of vowels and consonants), the melody is sung largely in tune and in time.

It was known that the home environment of the boy in this observation was particularly rich with musical experiences, his mother passionate about making music with her children. In this case it seems that the scaffolding provided by sustained musical interactivity with a parent was so effective that inner musical growth was activated to the extent that it became self-supporting. It appears that the course of the boy’s musical development in all domains was permanently advanced compared with many other children of his age observed within the project.

Conclusion

In summary, a review of key literature and analysis of the observational data within the current study have led to a new framework of musical development for all children in the early years, based on the original. While the original framework was built upon by observations of children and young people with learning difficulties, to which it pertained, the new adapted

framework has been informed by observations of children within a “mainstream” context. A discussion of how children might move through these levels has been relayed, with the suggestion that musical development is not necessarily a linear and clear-cut process. This is in line with the original *Sounds of Intent* framework. Both versions summarise and represent a complex and multifarious process, in which the boundaries between developmental levels and elements are fuzzy.

A brief consideration of the influence of adult support on a child’s musical development has also been made, which points to the importance of environment, and implies that further research in this area is warranted. As well as contextual influence it is worth mentioning how assessment itself may play a part in the perceived development that occurs. The snapshot observations within the current study provided a window into the complexity of musical engagement within a moment and helped to suggest paths of development. However, to gain a more complete picture of a child’s range of capabilities and solidify the engagement and behaviours that are noted, multiple observations in varying contexts would be ideal, which will be taken into account in upcoming research.

Observational data from the project also revealed the abundance of music that permeates children’s everyday lives, not necessarily within structured activity, but created spontaneously on their own, with both peers and adults. Such observations have been noted in other studies following children within everyday environments such as the home and nursery/school, which have shed light on the importance of understanding a child’s musical development in different contexts (Barrett, 2009; Young, 2008). Finally, taking the information that analysis from the project has revealed into account; that is, that younger children in some instances demonstrate more advanced musical engagement than those who are older; that levels may “overlap” and children may demonstrate musical engagement at more than one level simultaneously; and that children’s musical environments play a crucial role in the rate at which they develop musically (cf. Tafuri, 2008), it was considered most appropriate to maintain that the *SoI-EY* framework is not age related.

Next steps

Overall, the research reported here suggests that the *SoI* framework is indeed applicable within an early years context, with the capacity to capture general trends in children’s musical development as well as shedding light on individual cases. An illustrated version of the *SoI-EY* framework will shortly be disseminated to all c. 2,500 children’s centres in England, together with integrated packages of professional development for around 10% of these. The resulting evaluations will inform the next iteration of the materials. The disseminated materials will be a resource for both music specialists and non-music specialists to support and target the abundance of creative musical engagement that occurs at every level of development, using the materials flexibly to guide children within an array of rich and varied musical experiences. A website is underway, which will allow for online assessment and will provide a bank of ideas and resources including music in the educational/care setting and at home. It is hoped that the project will promote music as an integral aspect of early years education and care. Future research will take into account a larger sample of children observed within multiple contexts. A longitudinal study is also underway in order to test the framework by tracking children’s musical development over a two-year period, as well as exploring in depth the factors that may contribute to the rate at which development occurs.

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Notes

1. See Ockelford (2008) for more detail on the conceptualisation of the original *Sounds of Intent* framework of musical development.
2. See Ockelford and Voyajolu (in press) for a more detailed version of the *SoI-EY* framework and analysis in relation to “zygonic theory”.

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