Introduction

Music in early childhood education: Past and present

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Introduction

Children – even the youngest infants – *love* music, its sound and rhythmic pulsation, and show this by immediate motor reactions and cooing sound production. But, do they *need* music like food and daily care? Children as social beings depend on communication with other humans by means of vocal utterances, bodily gestures, visual contact or motor actions that produce sound with their body or toys. In a very early "empirical study" the Staufer Emperor Friedrich II (1194–1250) initiated an experiment to find out about the original protolanguage (was it Latin, Greek, or Hebrew?) that young children would develop naturally without any human interaction except feeding and body care. Little is known about the details of that experiment, but the result was extremely disappointing: soon all children died as a result of missing sensory stimulation and communication. Even without the evidence of this barbarian experiment, parents and caregivers know that young children rely on vocal interaction, bodily stimulation, and rhythmic pulsation. And music is one of the most efficient modes to comply with this need.

Research on music in early childhood education

For many centuries childhood was not seen as an important phase in human development, rather children were treated and dressed as small (deficient) adults. It was at the beginning of the 20th century that childhood moved into the focus of educational interest by educators (Key, 1900), physicians (Montessori, 1909; Piaget, 1926/2005) and psychologists (Vygotsky, 1929), among others who investigated the cognitive structure of the developing child. Additionally, the creative potential of a child was now considered by progressive music educators (Jöde, 1928) and by the arts education movement (*Kunsterziehungsbewegung*) where it became a central principle of education. To put a child into his own rights with all of his natural competencies (Dornes, 1993; Stone, Smith, & Murphy, 1973) has been described as a paradigm shift (Young, 2016). In the course of this new view on childhood, even musicians discovered this period as a field of growing interest. Shinichi Suzuki (1898–1998), as well as Zoltán Kodály (1882–1967), and Carl Orff (1895–1982), devoted a great deal of their professional activities to children's musical education. Suzuki (1983) followed a behavioural approach in his school of violin instruction (since 1950) emphasizing an early start with a repetitive training by imitating exemplary models like in language acquisition, whereas Kodály (1974) established the idea of starting with the musical mother tongue and implemented a solfège system to support musical literacy. Conversely, Orff was strongly influenced by the *Günther School for Gymnastics and Dance*; he grounded his approach of *Schulwerk*

(since 1932) on the evolutionary roots of body movement which he applied to vocal activities. Here, music was seen as a natural outcome of speech, rhythm and movement. Later he collaborated with the musician Gunhild Keetman (1904–1990) with whom he edited the pedagogical series *Musik für Kinder* (1950–1954) which contains practical materials for children to sing and play. The growing interest in music as part of early childhood education became a social and educational issue.

However, it took more than half a century until the second half of the 20th century, when psychologists and scientists turned to a more systematic investigation of the cognitive architecture of children's music learning and development, aptitude, and talent (Gordon, 1990; Moog, 1976; Papoušek & Papoušek, 1992; Papoušek, 1996). The detection of a positive effect of listening to Mozart by brain researchers, the so-called *Mozart Effect* (Rauscher, Shaw, & Ky, 1993) caused a tremendous impact on music in early childhood education and care because parents and politicians expected (and were promised) a positive transfer-effect from early music exposure to cognitive development. Although the effect of listening to music by Mozart was only measurable for a very short period of time (e.g., 10–15 minutes), and the reported results could not be replicated in general, it was nevertheless subject to continuing investigations.

It seems obvious that time was ready for the development and application of practical musical support of families with young children. Programs such as *Baby Einstein* by Julie Aigner-Clark (1996), or initiatives like the 2002 *No Child Left Behind Act*, perfectly fit the intention to support all children's education from an early age on, and music was one of the prominent means to achieve this purpose. Consequently, music programs for young children arose in Western and Asian countries that provided manifold practical materials and multimedia products for immediate application to mother-infant groups and early childhood classes. Here, the most successful endeavour is *Musikgarten* by Lorna Lutz-Heyge, which started in 1974 as the music curriculum *Kindermusik*, and then in 1994 became *Musikgarten* in the USA spreading over many countries worldwide. Similar to the *Yamaha Music Education System*, these soon became commercially organized so that even non-musician amateurs could join early childhood instruction by using the supplied materials (e.g. books, instruments, lesson plans). Very often, music classes for children conformed to parents' expectations on music instruction as a means to make their children smarter.

However, most of these programs and activities lack a clear educational conception based on a theoretically founded concept of music learning. There is only one exception, the early childhood music curriculum *Music Play* (Valerio et al., 1998) which is based on Edwin Gordon's *Music Learning Theory* (Gordon, 1990). His concept is grounded in a cognitive theory of learning (Jerome Bruner, Robert Gagné, Lev Vygotsky), as well as derived from his own research on music aptitude and test development. By 1984, early childhood classes based on Gordon's learning theory were offered in Philadelphia (USA); the *Gordon Institute for Music Learning* was officially incorporated in spring 1987.

Early childhood music as a social and scientific issue called for new rationales of the introduction of music to young children because the way scientists and educators understand the process of learning, determines the content and activities involved in music teaching. If music mainly appears as a stimulating entertainment, then programs offer all kinds of activities *around* music where the *music itself* only functions as an accompaniment. However, if the learning of an infant directs the educational activities, then the pedagogical interest focuses on *how* children experience, perceive, and

process the primary musical parameters. For this, research studies and controlled empirical investigations were necessary to underpin the teaching of young children.

The first occurrences of empirical studies in the 1970s tended to focus on the physical aspects of single musical elements such as pitches and durations employing means targeting the recognition of differences and similarities, as well as the investigation of the perception of melodic and rhythmic patterns. Results from music psychology and psychoacoustics were recognized (e.g., Rita Aiello, Andrea Halpern, Carol Krumhansl, Desmond Sergeant) and applied to educational aspects of teaching and learning (e.g., Klaus-Ernst Behne, Jay Dowling, Helga de la Motte-Haber, Sandra Trehub, Laurel Trainor). On the other hand, educators continued to observe young children's musical behaviour (e.g. Jeanne Bamberger, Lyle Davidson, Howard Gardner). Here, children's notation functioned as a window into the cognitive development (e.g., Jeanne Bamberger, Margaret Barrett, Lyle Davidson).

The more music programs for young children developed, and were integrated into public education policies, the more the perspective of research widened. Now, musical activities were also seen as a means of communication and emotional interaction, with parents and caregivers performing with their voice and the body (movements and gestures). Vocal abilities such as pitch accuracy, tonal stability, and melodic memory were observed and described in typologies (Rutkowski, 1990). Therefore, vocal development and singing abilities built a crucial domain in early childhood research (e.g., Margaret Barrett, Desmond Sergeant, Sandra Trehub, Graham Welch).

Since communication constitutes a core prerequisite in human development, music offers an important contribution to the process of developing communicative abilities. Consequently, *communicative musicality* (Malloch & Trevarthen, 2009) has become a central focus in early childhood music education, which has overcome the trivial hope of general cognitive advancements through music listening. They investigated vocal and gestural interactions in mother-child dyads and systematically observed body movements as expressive actions.

On the other hand, the understanding of cognitive processes as a function of body actions supported the theory of embodiment which stresses the importance of an interaction of body and mind. The new aspect of embodied cognition which is embedded in environmental and corporeal conditions (Rowlands, 2010) have initiated many studies on the function and implementation of movement in early child development, and therefore stimulated a new perspective of the biological and psychological dimensions of mental processes in childhood (Shapiro, 2011).

Along with the growth of neurosciences, music has become a paradigm of brain plasticity. A host of evidence shows that early and sustainable training of young instrumentalists causes distinct structural and functional changes in the brain. Therefore, educators became highly interested in neuronal correlates of music processing and learning (Gruhn, 2014; Gruhn & Rauscher, 2008; Hodges & Gruhn, 2018; Koelsch, 2012; Peretz & Zatorre, 2003) – although one has to concede that there is no simple link between neurobiological conditions and educational applications (that is, the so-called *neurodidactics*).

Furthermore, studies on children with cochlear implants (CI) shed another light on the processing tracks of pitches and rhythms, and the cognitive activity to comprehend the perceived noise as music. Studies of hearing with CI devices been applied within the investigation of aural learning, emotional discrimination, and pitch discrimination (e.g. Norbert Dillier, Kate Gfeller). This line of research not only

contributes to the more general aspects of therapy, but also extends the options for musical treatment of handicapped children.

Reviewing the past decades of research on music in children's lives, it becomes obvious that there are at least three aspects that should be addressed: first, the lack of orientation and clear concept for learning music in early childhood; second, the challenge of actual changes affecting childhood in a multicultural society; and third the impact of digital media that dominate the musical environment (Young & Ilari, 2019).

Explicit music learning concepts

Whatever we do intentionally or unintentionally will have an impact on children's social, cultural, and cognitive behaviour. Similarly, all educational endeavours of teachers are guided by implicit, but not always explicit learning theories. However, the more conscious we are about the practical implications of our goals and intentions, the better we can address specific needs of young children. Therefore, the implementation of music in early education and day-care should clarify the purpose and function of music in the respective context. A clear learning concept (i.e., the essence and function of learning) does provide the criteria for the evaluation of the invested actions, and can help to navigate the implementation of particular tools, materials, actions, and methods. A study that uses music needs a clear definition of learning to design a research project and evaluate its outcome. To count mistakes in a melodic memorization task tells us little about the learning procedure or the function of melodic memory in a learning environment for young children. The design of both quantitative and qualitative research projects should be based on a theoretical framework of a learning theory. If a researcher starts from a neurobiological concept of learning which defines learning in terms of the development of mental representations, the success can only be determined if mental representations have changed (expanded, differentiated, etc.). The count of incorrect pitches, or the evaluation of the intensity of actions, do not in themselves contribute to the understanding of infants' learning. Generally, the orientation on a clear learning concept sets the frame for research on educational initiatives with music.

Therefore, a general demand on research regarding music in early childhood and care should clearly be based on a theoretical concept, which is relevant to the chosen strategy (method) and material, so that practitioners can take advantage from the reported results. Otherwise, the educational value remains unclear and the project serves just as a model of further potential actions.

Musical childhoods in changing societies

The musical growth of children predominantly happens within families and their particular social and cultural background. Parental care and support constitute the most potent agents in early education. Therefore, familial conditions for music in the lives of young children and how these influence their cognitive and emotional development sparked the interest of educational scientists in the recent past (Kreutz & Feldhaus, 2020). The start of empirical investigations half a century ago still happened during the final stage of culturally homogeneous societies. The items of psychological and acoustic tests consisted of pitches and sounds, tonal and metric structures from Western music. With regard to this, there was no principal difference between the music heard

and practiced in homes, in the public or in educational setting. However, nowadays we live under multicultural conditions which create many different 'musical childhoods'. Parents are actively involved in the construction of differentiated musical childhoods by the way they set up their homes and lives in accordance with and/or in contrast to the surrounding environment. According to Young (2009) these "worlds" develop in parallel between different social and cultural groups, natives and immigrants, performers and consumers.

> Many [...] young children today live in musical worlds that are profoundly different to those of just a generation ago. Music in contemporary childhoods is rapidly changing in line with broader socio-cultural changes in family life, in cross-border movement of populations and not least with the development of home-centred and mobile personal new technologies. The racial and cultural dynamic of many communities is shifting rapidly (p. 695).

With respect to this, it seems irrefutable that educational science and practice has to address this change and needs to switch the focus of research from exclusively Western music models toward new socio-cultural conditions. For example, babies are often raised in families with a migration background and grow up in a community with different cultural norms and values, but they are confronted in everyday situations on the road, in cars or trains, in the day-care centre etc., with completely different cultural ingredients that constitute a different musical and cultural identity. As in language, children today grow up bi-musically or even multi-musically. In Malaysia we already find this bi-cultural situation in a merge of indigenous and Western music and language (Malay and English) even in one and the same situation. This confronts research with new demands and challenges. The constitution of childhoods in multicultural societies, their conditions and practices have to be considered when we speak of childhood and early childhood music education.

The interactions and exchanges between these cultures are overarched by the omnipresence of a diversity of many culturally embedded musics that furnish the daily environment – and internet. The westernization of global popular idioms tends to diminish the diversity of national idioms and replaces it by levelling local identities in a global hybrid culture (Koechler, 2018). An essential question will be how research on early childhood will and can comply with this situation. That this has to be done seems undeniable. This opens new horizons to research and educational practice in early childhood music education and care.

Music from digital media

Another important aspect in early childhood concerns the mode of how music is transmitted to children. Since a great deal of environmental music in homes and public spaces comes from digital media, we need to assure ourselves of the educational and aesthetic value of live music from acoustic instruments, real voices or body percussion. Here, children can experience a different dimension of sound: its vibration, dynamics and natural spectral sound qualities. To produce a soft or loud tone calls for a particular muscle tension and body drive which can be seen and felt in action. The breath which is needed to sing a phrase is closely related to the structure of that phrase. One

needs to inhale before singing a tone or lullaby, and the breath determines the power of that tone or melody. The physical aspect of musical sound is extremely important to develop an aesthetic feeling of sound qualities. Therefore, children happily follow a musical performance when they see what they hear, hear what they see, and feel in their body what performers express with their own bodies. This aspect should not be underestimated because it makes music real and music instruction in children classes unique. The synthesized sound from a CD or a children-designed production might attract children's attention, but can never excel the experience of exploring or listening to an instrument played by a talented musician (only the best for the youngest!). This opens an essential realm of music in early childhood education.

Subsequent to the vast interest in research on music development, music education for the young, and music within family settings, over time the broad questions and methods have changed, in addition to socio-cultural conditions that are in a transition – as is the immense expansion of options for music exposure. Nonetheless, this collection of annotated articles from the archives of *Early Child Development And Care* (ECDC) still appears to be beneficial to readers regarding the engagement and implementation of music with young children. At large, the anthology aims to support a reflected practice by revisiting research of the past, and pointing at potential core areas and principles of research on music in early childhood at present.

The Annotated Anthology

The primary intention of this *Annotated Anthology* is to provide practitioners and researchers of music education, music development, and music psychology, an opportunity to read a selection of articles that were previously published in the journal *ECDC*. Although the journal is not one of the traditional outlets of publication for music science professionals, it nonetheless has been instrumental – especially for those with a research focus on music development and/or musical learning among infants, babies, toddlers, and young preschool children. The current collection represents many facets of research from different cultural contexts, reflecting various trends and projects of music in early childhood, incorporating a historical perspective with regard to different topics and approaches.

ECDC was first established in 1977 by Roy Evans, Head of the School of Education at Roehampton Institute (now Roehampton University); he has since served as Editor-In-Chief for over 43 years. In the first years, most manuscripts published by *ECDC* resulted from personal invitations of early childhood developmentalists. By the early 1980s, the journal gained inroads to the American preschool scene. Twenty years later, after the turn of the millennium, *ECDC* was appropriated by Taylor & Francis publishing house. That change boosted a wider base of origin for papers, and the journal began receiving a great number of manuscripts from almost every country in the world, including: Western Europe, North America, the UK, previous communist states of Eastern Europe, Australia and Zealand, and even the Arctic circle. *ECDC* launched numerous Special Issues focusing on early child care and development; these targeted a host of specific topics such as intellectual growth, literacy, and numeracy. At this current time of writing (year 2020), there are three special issues in progress: (1) Music In The Lives Of Young Children; (2) Early Childhood Theorists And Pioneers; and (3) Enhancing Language And Articulation Skills, And

Promoting Resilience And Adaptability In The Early Years Of People's Lives. Today, *ECDC* boasts of its 190th volume; there are sixteen issues per annum each consisting of eleven to twelve manuscripts per issue. Such a massive volume totals an average 180 manuscripts per year (with an overall 400 submissions having undergone editorial review cycles per year). The 2019 CiteScore for *ECDC* is 1.5; ranked as Q2 for Paediatrics category (64th percentile), Q3 for Developmental and Educational Psychology category (41st percentile), and Q3 for Social Psychology category (40th percentile). The Impact Factor for 2019 is 0.968.

The *Annotated Anthology* is comprised of eighteen papers. Initially, all articles from the *ECDC* archives relating to topics of music development, music education, and music engagement with young children among families, were assessed. Each was read and reviewed independently by both co-editors. Five basic criteria to mark papers as a candidate for inclusion in the collection were employed:

1. The study was based on major theories or concepts of music education, music development, or use of music in the care of young children at the time of publication.
2. The study reflected research trends published in the literature at the time of publication.
3. Methodologies used in the study were innovative, or findings were novel, or discussion and conclusion was insightful for the time of publication.
4. The article was relevant for the fields of early childhood development and care at the time of publication.
5. The article was of general interest to readers because of the approach used, research questions asked, or the context employed at the time of publication.

Each paper was rated for all five criteria using a 4-point Likert scale (0-1-2-3); the scores ranged between 3 and 15. Papers receiving a grand mean GTE 12 between both co-editors were brought forward for inclusion.

From the onset, it was decided that each author would supply a short text as a statement addressing aspects about their article from the perspective of today. This is a rather special approach. Foremost, authors are rarely asked to reconsider what have they done in the past, nor are they ever requested to reflect on previously published research projects in retrospect. Second, as many authors continue a specific line of study, such an opportunity might also bring to the surface hidden learning processes and even modifications in theoretical concepts that have occurred over time. In their commentaries, authors could clarify the original impetus of the study and the underlying scientific conceptions, as well as re-evaluate the actual relevance of their reported findings, and possibly envision further directions for early childhood music in families and educational institutions considering the cultural, social, and technological changes that have occurred in society since the publication. All authors were asked to relate to the following points as suggestions for their annotation.

1. What was the impetus of the study as reflected in your article?
2. What kinds of scientific concepts were in your thoughts at the time you submitted your manuscript for publication?
3. From your perspective then, what was the importance of your findings when it was published?

4 In your mind, are the aspects of early child development and care you studied as published in the paper still relevant today?
5 What has happened in the field on this particular topic since you published this paper (e.g., have you published replication studies, further widened this area of research, what is the 'state of the art' in today's research)?
6 Where do you envision the field related to the particular topic of your article headed in the future?

Although much time has gone by between the original publication dates of some of the articles, and in one case 38 years has passed, all principal authors were located. Initially, those who were listed as the contact author on the original paper were searched. In one case, the original author was not inclined to cooperate after having left the field of early childhood music education for advanced training and certification as a physician of internal medicine. Subsequently, an internationally acclaimed expert was recruited to provide a commentary. We note that a co-author, Pnina S. Klein, passed away in 2014; the principal author of that article has supplied the annotation in her absence. Unfortunately, we discovered that Peter de Vries just recently passed away (December, 2019); we are honoured that his research associates were willing to write an annotation in his memory.

Organization and content

The book is organized in three parts which convey relevant aspects of music in early childhood education and care. The first part focuses on caregiving and parenting, while the second targets musical development, and the third highlights specific musical aspects of musical experiences among young children including singing, movement, and learning music (i.e., teaching music in early music education).

PART I, on Caregiving And Parenting, consists of seven chapters. **Chapter 1** by Beatriz S. Ilari is on musical parenting of young children, targeting musical beliefs and mothers' uses of music with infants. Ilari recruited 100 Canadian mothers of infants aged between 7 and 9 months of age. The mothers were interviewed on musical background, musical preferences, beliefs and uses of music with their infants. The results suggest that, despite changes in life styles due to modernization, mothers still use music with their infants, and singing remains the primary musical activity of mother–infant dyads. **Chapter 2** by Lori A. Custodero and Elissa A. Johnson-Green explored the reciprocal influences in the musical parenting of younger and older infants. In their first study they employed a qualitative analysis of responses from a telephone survey with 904 American parents of 4–6-month-old infants; the findings show that the use of music with young infants plays a primary and basic role in parenting infants. In their second study they recruited 339 American parents of 10–16-month-old infants; the findings indicate that parents respond to children's familiar musical behaviour by engaging (e.g., teaching) them in further in subsequent musical activity. **Chapter 3** by Peter de Vries explored parents' musical practices with children under the age of five in the home environment. De Vries employed a survey measure sent to the parents in three Australian preschools asking them to describe their own music background, their children's involvement in music programmes, the types of music their children were exposed to in the home, and the frequency of musical activities

conducted in the home. In an interesting second phase, the results of the survey were used as discussion points in focus groups. The findings reveal that parents perceive lacking time to engage in music-making on a regular basis, but see educational settings as provider of a complete musical experience for children; further, that parents feel they lack knowledge about music, and hence rely more on commercially available products for music in the home rather than engage in live musical performances. Anna Rita Addessi addressed the musical dimension of daily routines with under-four children in **Chapter 4**. Her Italian action-research project employed protocols in natural and spontaneous contexts; the data analysis of video-recordings used an observational grid, check-list, and microanalysis of music making during daily routines such as diaper change, bedtime, and free-play. The findings show that diaper changes prompt increased face-to-face interactions, and that there were differences for temporal contingency, turn-taking, and musical quality of the vocal interaction between mother-child versus father-child dyads. In **Chapter 5** Orit Mualem and Pnina S. Klein investigated the communicative characteristics of musical interactions compared with play interactions, between 93 Israeli mothers and their 1-year-old infants. In the study, parents were observed (and videotaped) in their home during a 10-minute musical activity followed by a 10-minute play interaction. The data collected and analysed concerned physical proximity and eye contact, mother-infant emotional expression, length of communication chains, synchronisation, and maternal mediation. The findings show that musical interactions provide more opportunities for positive emotional arousal and synchronisation, which are the basic characteristics of quality interactions and essential for future child development. **Chapter 6** by Wendy Vlismas, Stephen Malloch, and Denis Burnham targeted the effects of music and movement (M&M) on mother–infant interactions. Experiment 1 recruited 96 first-time Australian mothers with their 2–6-month-old infants for a 5-week group programme; the effects of M&M on face-to-face social contact, and mothers' interactions with their infants (maternal postnatal attachment) was examined. Experiment 2 recruited 44 mothers and focused on behavioural effects of M&M on mothers' infant-directed speech and mother–infant reciprocity. The study found that M&M activity increased mother-infant interactions as well as mothers' attachment to their infant. Moreover, that M&M increased dyadic reciprocity with increased durations, as well as mean pitch and pitch-range of infant-directed speech. Finally, in **Chapter 7** Warren Brodsky, Idit Sulkin, and Michal Hefer explored musical activity among young children and parental musical engagement employing a Hebrew translation of the *Children's Music Behavior Inventory* (CMBI, developed by Wendy Valerio and Alison Reynolds). In the study, 300 Israeli families with children 0–5-years-old were surveyed. The study found that *CMBI* is culture free, and presented an updated set of norms for in-home musical behaviours of young. The researchers highlight the fact that by completing the survey itself, parents gained insight about the value of music engagement for their young children and came to an understanding about music as being an essential component of their own parent-child relationship.

PART II, on Musical Development, consists of six chapters. In **Chapter 8** Desmond Sergeant investigated octave generalization in young children; his paper is the earliest study appearing in the anthology (having been published 38 years ago in 1982). Sergeant pointed out that there has long been common agreement as to which intervals generate the greatest sensation of unity or consonance, although there is less

unanimity about their subsequent rankings. The rank order of intervals in terms of their 'consonance' usually proceeds from the most perfect agreement (e.g., unison, octave, double octave, perfect 5th, and perfect 4th), through imperfect intervals (e.g., major 6th, and minor 3rd), to intervals regarded as having little agreement and therefore dissonant (e.g., major 7th, and major 2nd). Most specifically, previous research concerned with the sense of *octaveness* has focused on the role of tone-chroma in perception of melody. In the study, three experiments were implemented to investigate octave generalization in young children by means of responses to matching tasks based on judgement of similarity. Sergeant believed that musically trained subjects would not only respond differently than musically naïve subjects, but projected that data obtained from the musically trained would show bias to the tone-chroma element of pitch while the musically naive would have more sensitivity to tone-height. Ninety British elementary school-aged children between 4 and 9-years-old without musical training were recruited. The findings show that octaveness develops by a process of constructivism, i.e. the notion that a melodic figure may be replicated at an octave pitch whilst retaining much of its identity within a constant harmonic framework, and is pieced together by the child from discrete perceptions experienced over a sustained period of time. Then, **Chapter 9** by Lily Chen-Hafteck aimed to establish the link between music and language development in children by drawing together music and linguistic developmental research literature. This literature-review informed educators about the significance of integrating the two domains by presenting three aspects in the developmental processes: early perception of sound; pre-musical versus prelinguistic vocalization; and the emergence of singing and speech. Chen-Hafteck concluded that music and language development are indistinguishable during the early stages, and the implication for educators is that to enhance learning among young children, music and language should be closely related. In **Chapter 10** Beatriz S. Ilari explored music perception and cognition in the first year of life presenting a literature review; initially she presented previous research that focused on musical features such as pitch, melodic contour, scales, harmony, timbre, musical form and structure, rhythmic and temporal events, and then long-term memory for music are delineated. Thereafter, Ilari presented studies that investigated the use of music in the everyday life of infants and their caretakers, especially in contexts such as the home environment and therapeutic settings. Subsequently, she critiqued the literature, and opened a discussion pointing to future directions of research. **Chapter 11** by Ken Hui sought to replicate Rauscher's 1993 'Mozart Effect' in preschool children. Forty-one boys and girls, aged three to five, were recruited to complete a series of pencil-and-paper maze tests, each after one of three listening conditions: Mozart's Piano Concerto in A Major (K488), age-appropriate popular music, and silence (as a control). The study found no statistically significant differences among the three interventions. In **Chapter 12** Susan Young investigated constructs of musical childhoods in light of changing economic, social, cultural and technological contexts. Young questioned if the circumstances that children today live significantly impact the ways in which early childhood is both viewed and experienced, and she contends that such an understanding is crucial for early childhood music researchers and music educators. To illustrate her argument, Young discussed two research projects: a study of young children's musical activity in the home focusing on their use of karaoke; and a practice-based project in early childhood centres serving British Muslim communities. Finally, in **Chapter 13** Carla H. Merkow and Eugenia Costa-Giomi looked at infants' attention to synthesised baby

music and original acoustic music. This chapter focuses on the distinct music genre known as *baby music* (e.g., 'Baby Einstein Takealong Tunes'). The researchers point out that there is a premise that infants benefit from music that has been 're-orchestrated' for their little ears, and question if such a practice actually follows developmental prerequisites. The study recruited 24 12–13-month-old American infants and followed their preferential attention to music (engineered specifically for them *versus* the original acoustic music). The findings show that infants were equally attentive to both music types, but that infants who regularly listened to relatives playing acoustic instruments at home were all the more attentive to re-orchestrated baby music (whereas the opposite was true for infants who did not have opportunities to experience music performance at home).

PART III, on Specific Musical Aspects Of Musical Experience Among Young Children Including Singing, Movement, And Learning Music, consists of five chapters. **Chapter 14** by Susan Young aimed to contribute to an understanding of the music/movement connection through a literature review relating infant-caregiver interaction to musical development. Although movement had been acknowledged in early years music education practice as a vital medium for the development of musical learning among young children, explanations of the connection between music and movement seemed to fall short for providing an explanation of the integrated nature of this bond. She concluded by proposing alternative conceptions of the music and movement learning connection. Thereafter, in **Chapter 15** Nikolaos Zafranas presented a study about piano keyboard training and spatial-temporal development. The study recruited 61 Greek kindergarten children who received two piano/keyboard lessons weekly during one school year (on average 35 weeks = 70 lessons). There were three main goals: (1) to investigate whether or not children would show significant improvement in cognitive test scores following the programme; (2) to examine if effects of piano/keyboard training on spatial tasks are gender-dependent; and (3) to highlight differences of post-training on spatial tasks *versus* other cognitive tasks. The findings show that following the instruction period, scores for several subtests of the *Kaufman Assessment Battery for Children* significantly improved, including five subtests: Hand Movements, Gestalt Closure, Triangles, Spatial Memory, and Arithmetic (with boys improving more than girls in Triangles). **Chapter 16** by Warren Brodsky and Idit Sulkin focused on handclapping songs – a form of singing game akin to playground/street songs – that have been acknowledged as a major platform for child development. Sulkin isolated handclapping songs, exploring the association of performance quality with classroom academic achievement, and then examined if Israeli children in elementary school (5–10-years-old) who spontaneously engaged in handclapping songs activity demonstrated improved motor or cognitive abilities. The study provided two eight-week classroom interventions at two different school settings in two cities; an experimental handclapping training *versus* standard elementary school music appreciation classes based on curricular guidelines of the Ministry Of Education. The study found that children who were more skilful at performing handclapping songs were more efficient 1st Graders; that 2nd Graders who spontaneously engaged in handclapping songs (in the schoolyard during recess) were advantaged in bimanual coupling patterns, verbal memory, and handwriting; and that classroom handclapping songs training was far more efficient than music appreciation classes in developing non-music skills (such as reading and writing abilities) among 2nd and 3rd Graders. Then, in **Chapter 17** Mignon van Vreden recruited

South African pre-schoolers to investigate attributes of play (e.g., spontaneity, inventiveness, openness, and curiosity). Mignon highlights the fact that although early childhood caregivers do integrate singing into their teaching on a daily basis, they are often unaware of how to facilitate other musical interactions through movement, playing instruments or body percussion. As a result, the 'Bejazzled' action research project was initiated. The findings indicate learner responses related to jazz, such as: spontaneously creating music, discovering new musical experiences, responding to music through movement, and exploring music through play. Van Vreden concluded that these responses could foster growth in the early years to transcend musical boundaries, strengthen gross motor skills, cultivate listening and language skills, and contribute to social and emotional development. Finally, in **Chapter 18** Özden Kuşcu and Gökhan Kayili studied the effects of an Orff-based attention-enhancing music education programme on impulsive preschool children's cognitive tempo. They presented the outcome of a two-group intervention (18-weeks, twice weekly, totalling 36-sessions) employing a pretest-posttest design among 30 Turkish pre-schoolers (between ages 4–5-years-old) all identified with maladaptive behaviours denoted as impulsivity. Scores for the *Kansas Reflection-Impulsivity Scale For Preschoolers* (Form A) demonstrated a reduced number of errors and increased duration of reflection time at T2 for children in the experimental music group compared to the control group.

On a final note...

The anthology not only covers a broad variety of aspects regarding early childhood development and care, but is specifically focused on the role of music engagement among young children across the globe. The 18 papers that have been chosen illustrate many different philosophies, approaches, and methods that use music in educational settings of early childhood. We believe that these selected papers from the last decades are still valuable, and will allow readers to revisit and rethink the power of music on the social, emotional, physical, and cognitive growth of children. We hope that the readers will find interest in the reflective posture weaved throughout the book from each author's annotation. It is indeed both unique and novel to have asked each author to comment about their intentions when they implemented their study yesteryear, and to put into perspective the ultimate impact of their published findings from a vantage of today's day and age. The anthology has compelled each author to reflect on their past research, as well as to their scientific journal writing, in a way that to our knowledge, has never before been attempted. This is new ground for us as editors and for the authors. We have found that it is the nature of an author's annotation to be highly personal; after all, the author's note is reflective and retrospective. The annotations offered an opportunity for each author to tell his or her 'story' – and some of these are undeniably the legends behind the facts that surface between the lines of a developing science. We are hopeful that among the contents of the anthology, readers will identify core areas and principles of research on music in early childhood – past, present, and future – and that the papers in the collection will stand out to serve as an inspiration for them in their efforts to further promote *music in the lives of young children.*

Wilfried Gruhn and Warren Brodsky
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Part I

Caregiving – Parenting