British Journal of Music Education (2022), **39**, 1–43
doi:10.1017/S0265051721000243

CAMBRIDGE UNIVERSITY PRESS

EDITORIAL

The Swanwick/Tillman Spiral of Musical Development: impacts and influences – *Guest Editorial*

I awoke in the middle of the night with the idea for this special edition of BJME. As this year marks 35 years since the original spiral of musical development was published by Swanwick and Tillman (1986), it seemed to me an exciting thought to mark the moment with an issue which recognised this landmark paper. The excitement continued when the editors of BJME accepted my proposal as a worthwhile endeavour, and it has been an exciting and challenging project ever since. I was especially delighted at the opportunity to work with June Boyce-Tillman to develop an article based on an interview with her exploring thoughts behind her contribution to the spiral, which was the culmination of her original doctoral thesis; and at the positive response from Keith Swanwick who agreed to contribute an article to this edition with equal enthusiasm and whose new paper brings to light dimensions of the spiral's development which are not widely known.

Significant junctions exist at key moments in music education history. All too easily, a page can be turned and knowledge and the opportunity for discussion and debate lost, sometimes forever. I am therefore delighted to be able to present the articles in this issue with the hope that the writings here will help, in some measure, to assuage such moments. I believe this project is significant and important and that it brings new knowledge and perspectives to the field that will enrich musical learning and its discussion for future generations, both in the lives of young people, teachers, teacher educators, researchers and policymakers.

This special edition of BJME aims to do more than mark a research milestone, however. The Swanwick/Tillman spiral is important, because this work has influenced countless music educators in their thinking about developmental music matters. Spirals of development continue to be a formulation that feature prominently in the thinking of music teachers (Anderson, 2019). This has arguably become even more dominant as teachers have thought about curriculum design in order to engage with Ofsted's (the schools' inspectorate in England) definition of curriculum. Ofsted consider curriculum as intent, implementation and impact (Phillips, 2017), and it is often as curriculum intent that teachers have encountered spiral formulations of curricula. It is also significant that despite the spiral featuring prominently in teacher thinking, it remains largely absent in policy documentation. Indeed, the recent Ofsted research review for music (Office for Standards in Education, 2021) mentions musical development on only one occasion, in the context of balancing formal and informal musical learning. There is therefore a mismatch between teacher practices and official formulations, although the discussion of this conflict is nothing new (Cox, 2002). It is my aspiration that this edition will begin to bring some of the disparate debates together, as it draws on a wide range of perspectives and writer biographies.

As well as marking the achievement of the Swanwick/Tillman spiral, this special edition will also endeavour to give voice to a critique of the spiral, in an effort to contribute to balanced

academic discourse. Critique of the spiral is hard to find in music education research literature and where it does exist, it tends to be part of debate some decades ago (Mills, 1996; Lamont, 1995). There has been little contemporary discussion of the validity of Swanwick and Tillman's levels of transformation and whether they are reliable today. There have been some suggestions that developments in music technology may require the spiral to be revised (Cain, 2004), but again, this is some time ago. This issue therefore has a significant contribution to make in debating omissions, or areas which require further development in a spiral formulation of musical learning. Ultimately our understanding of what musical development means requires such critique to open new fields of research and to highlight areas in which musicians of all ages have an entitlement to musical opportunities and experiences.

Why use a spiral to understand musical development?

Swanwick and Tillman's (1986) paper does not begin with a spiral, but with a theoretical basis and an exploration of children's composition. It is only after a detailed analysis of these compositions that the spiral is presented. As well as appearing in this journal in 1986, the spiral additionally appears in June Boyce-Tillman's doctoral thesis (Tillman, 1987), where it also emerged as a representation of findings from her longitudinal study on composing with 3–11 year olds, analysing 745 compositions from 48 children over 4 years. The spiral which followed the discussions both from thesis and published paper consists of four turns, with the level of transformation labelled from bottom to top as: materials, expression, form and value. Each level consists of two twists, and within these are listed sequential developmental modes: sensory, manipulative, personal, vernacular, speculative, idiomatic, symbolic and systematic. Along the outer edges of the spiral, there are development stages with age ranges, which draw from Piaget: mastery (0–4), imitation (4–9), imaginative play (10–15) and meta-cognition (15+). The beginning and ending of the spiral appear as a torn edge (indicating their presence as a continuum?), and an arrow underneath the spiral points to the right and is labelled 'towards social sharing'. This spiral forms the core of our discussions in this issue and is reproduced again in the first paper of the collection.

The extent to which music does, or does not, possess aesthetic characteristics, has facilitated a discourse of values in music education and why these might be considered important (Elliott, 1995; Swanwick, 1999). The notion that the nature of music can be understood in a multidimensional fashion may be one contributory factor explaining why music educators and researchers often represent musical development as a three-dimensional entity. Although Bruner (1960) suggested that a spiral was an appropriate way to understand learning development in general terms, the spiral also has a significant history in music education. The Manhattanville spiral (Thomas, 1970) embodies musical characteristics in quite defined terms, in which cycles develop in musical complexity (dynamics move from contrasts of 'forte' and 'piano' in cycle 1 to 'shaping' in cycle 4, for example). Swanwick and Tillman's (1986) spiral concentrates on ideas of materials, expression, form and value, but both authors were to take the spiral in different directions in their later work. Swanwick explored a spectrum between accommodation and analysis, and intuition and assimilation, with these lying along the outer edges of the spiral (Swanwick, 1994). Boyce-Tillman, on the other hand, considered interlocking circles as though viewed from above and encompassing spiritual elements (Boyce-Tillman, 2006). Spirals have also appeared in a musical context in the work of Fautley and Daubney (2015; 2019) and in the outputs of commercial providers of music education (Charanga Musical School, 2015).

https://doi.org/10.1017/S0265051721000243 Published online by Cambridge University Press

Does musical development need a model?

Before considering the articles which form this edition, it may be helpful to think about why musical development might require a model in the first place. Characteristics of musical development have sometimes been discussed in musical behaviour terms. Regelski (1975) considered cognitive and psychomotor behaviours as one means for understanding musical perceptions and therefore their developments. In a similar vein, Hargreaves (1986) later commented on verbal, making and performing behaviours, as a conduit to understand development in music. A differing approach was adopted by Paynter, who regarded composition as central to musical development, which he considered to be fundamentally intuitive. For Paynter, musical development emerged from existing musicality in children, which benefitted from nurturing, and from which differing types of musical education could be identified (Paynter, 1970, 1977). It was in the context of this discourse of differing perspectives of musical development that Swanwick began to conceive models of musical meaning (Swanwick, 1979) and to consider what Piaget's (1926) stages of development might mean in musical terms. This led to his writings on the development of musical knowledge (Swanwick, 1983), which were later to prove so formative in the development of the spiral. It was at around this time that Swanwick began to work with June Tillman as her PhD supervisor, an academic collaboration which later led to the publication of the spiral of musical development (Swanwick & Tillman, 1986). Tillman's inspiration for her conceptualisation of musical development emerged from models proposed by Ribot (1906), Taylor (1959), Tait (1971), Cottle (1973), Glynne-Jones (1973), Piaget (1974), and Ingley and Hunter (1975), which she conceptualised as stages which first appeared in her thesis and was later published with Swanwick. The ground work for development literature was thereby collected, interpreted and reimagined for music education. It is perhaps partially this considerable literature collation, contextualising and conceptualising in the first of Tillman's (1987) two-part thesis that is the unrecognised contribution of June Boyce-Tillman to musical development. The Swanwick/Tillman spiral was not a model of convenience but drew together multidimensional historical discourse and located this through an interpretivist lens of doctoral research findings. It facilitated a discussion on musical development which may not otherwise have taken place, enriched music education for thousands of young people and addressed a research gap of empirical praxis.

The Swanwick and Tillman (1986) spiral as a model of musical development therefore became one of the most widely known and internationally referenced models in the field of music education. Numbers of citations range from 130 (Swanwick & Tillman, 1986) to 689 (Google Scholar, 2021), beginning in 1988 and continuing to the present day, leaving little room for doubt of the spiral's significance in the discourse of music education and beyond. By the time this editorial is print, the citations will inevitably be even more numerous. Studies which cite the original paper that contained the spiral include areas as diverse as: composition (Kratus, 1989), creativity and special educational needs (Collins, 1992), childhood (Young, 1995), culture and instrumental learning (Cope & Smith, 1997), improvisation (Burnard, 2000), composing with music technology (Reynolds, 2005), thinking skills (Craft *et al.*, 2007), action research (Cain, 2008), lifelong learning (Lamont, 2011), jazz improvisation (Palmer, 2016), language origins (Nikolsky 2020), curriculum design (Anderson, 2021), and community music (Smith, 2021), to highlight only a small selection. Such a wide contextual discussion over the past 35 years is what merits the papers I am pleased to include in this issue and to which I now turn.

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About this special edition

This special edition of the journal begins with a reproduction of the original article by Swanwick and Tillman (Swanwick & Tillman, 1986), the centrepiece for the contributions of this issue. The Swanwick/Tillman article forms the second half of this editorial, providing a useful context and source of reference for the articles that follow, enabling the reader to see the spiral as originally conceptualised. Memory can prove unreliable, and the spiral in our minds can vary from its actual published form. It therefore seems essential to reproduce the spiral at the outset, within the text of the original paper, before the contributors' thoughts, ideas and evaluations which form the primary content of this issue begin.

The Swanwick/Tillman article in the second half of the editorial, is followed by Keith Swanwick's reflections on the sequence of musical development in the first new article in our collection. He outlines the importance of the spiral as he sees it in musical contexts and charts its origins, influences and development. In his first published comments on the spiral for some years, it is particularly interesting to note his observations that the open ends of the spiral indicate new musical contexts, and his assertion that the spiral does not represent static stages of development, but rather states that are cumulative and interlinked. Swanwick's commentary on how he was to develop the spiral in his 1994 work *Musical Knowledge: intuition, analysis and music education* also adds considerably to known discourse of the spiral, as in his article Swanwick describes how he came to understand the two sides as well as vertical relationships in the spiral formation. He goes on to develop the spiral as an assessment tool and describes its use in a Brazilian context. Swanwick's musical universe and the place of the spiral in musical understanding is brought to the fore in his commentary, which enables greater understanding of some of the original thinking that lay behind the spiral and how musical discussion and debate has been influenced by it in the subsequent three decades.

June Boyce-Tillman's doctoral research contributed the data and established philosophical underpinning for the development of the spiral of musical development. In this special edition, she discusses some of her thoughts and perspectives on this process and how her thinking has continued to develop, presented as an interview I was able to conduct with her in 2017. This article considers the origins of the vernacular, the meanings of musical literacy, how curriculum design and sequencing fits into the model and Boyce-Tillman's response to some of the critiques which have been made of the spiral. This article includes commentary on Boyce-Tillman's research, alongside examples of musical development and an explanation of her understanding of values. The article also explores how the model of the spiral originated and was conceptualised, as well as how it was developed. This article is a new contribution to the field which explores many of the to-date unknown influences and modifications which were brought to bear on the spiral as it found its final form. Boyce-Tillman discusses the challenges of conceptualising the spiral and defending it in her viva. The critical commentary which accompanies the interview provides further perspectives on the elements and modes of the spiral, placing these into a historical and more contemporary context.

This edition has enabled further contemporaneous and generally unknown studies to emerge. This includes the duoethnographic article by Finney and McCullough which describes their experiences of study on the MA music education course at the University of Reading in England. This work has significant overlap with the spiral, as June Tillman was involved as one of the assessors of children's compositions within McCullough's research which sought to replicate Tillman's study. However, the article in this edition goes further, as it discusses the validity of the modes of the original Swanwick/Tillman spiral (or helix as the authors suggest it might be more accurately named) and presents a critique of the use of Piaget and the spiral formulation of the 1986 paper.

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Its conclusion that 'models are only models' results in a new purpose zigzag proposal for musical development as well as seeking to chart potential future directions in the field of musical development.

Also in this issue, Chris Philpott focuses on Swanwick's meta-theory of music, working out from the spiral and looking at the wider context of Swanwick's work. Philpott considers the critical nature of musical knowledge and metaphor and examines the claims of the original 1986 article, before tracing the implications of Swanwick's approach for musical learning, development, teaching, assessment and evaluation. As part of his discussions, Philpott also presents a commentary on the critical issues arising from the spiral and Swanwick's role within this, identifying potential issues with musical meaning, claims for universality and musical criticism without criticality. He brings his discussions to a close by placing the spiral into a contemporary context and asking what Swanwick's approach means for music education today.

Graham Welch brings an important contemporaneous perspective to our spiral considerations. Unbeknown to him, he was engaged in his PhD fieldwork at the same time as June Tillman, collecting data only a couple of miles away from where she was working. Welch's work was also published in the same edition of BJME as the Swanwick/Tillman spiral. He offers fresh insights into influences on the spiral, rarely discussed studies and comparisons, and places this alongside a critical commentary about what musical development means as it relates to musical behaviours. He draws on research in the domain of singing to do this and discusses the validity of a linear conceptualisation of musical development, before considering what musical development might mean subsequent to Swanwick and Tillman's work in the 1980s.

An international perspective on the spiral is given voice through Vicki Thorpe, & Graham McPhail's article with Stuart Wise, which traces a history of music education in New Zealand. The spiral discussions contained in this article arise as reflections on Swanwick's visit to the New Zealand Society of Music Education in 1989. From this, Swanwick's influence on teaching is explored as recounted through reflections from primary music educators. The article also examines influences of more recent times and discusses diversions from the English model of music education, exploring impacts and implications. Thorpe and McPhail's discussions provide an important insight into cultural understandings of the spiral and its role in transition from subjective personal responses, to social responses that acknowledge the influence of external musical conventions.

The voice of the classroom music teacher is also a strong feature in our collection of articles. Maureen Hanke brings contemporaneous teacher discussion of the spiral as she relates her classroom work in 1986, when Swanwick and Tillman's article was first published. She discusses using the spiral in young people's composing as a model for pedagogical practices and considers the place of the spiral in dynamic composing feedback from teacher to pupil, before also considering the spiral's influence in primary school education settings. The legacy of the spiral is evident from contributions from current music teachers too. Nikki Booth discusses what the spiral means for assessment in formative and summative contexts in music education. He considers the speculative and idiomatic in composition before presenting two case-study examples considering threshold concepts and the use of audio recorders to capture and enable 'work-in-progress' composing. James Leveridge, also a current classroom music teacher, outlines the constraints music teachers now face in the classroom and traces the origins of spirals in educational use. His article considers learning as individuals and the role of the teacher in musical development from the perspective of musical knowledge, as he relates the spiral to current music teaching practices.

The special edition concludes with Martin Fautley and Alison Daubney's discussion of spiral thinking, planning and impact. Highlighting the connection between progression and

https://doi.org/10.1017/S0265051721000243 Published online by Cambridge University Press

development, they suggest the spiral represents a progression model, before tracing its development through Bruner's work and the Manhattanville spiral and dealing with challenges of non-linear progression along the way. The article notes that the spiral is not intended to offer a curriculum solution, but to chart development of composing materials, and draws attention to the number of iterations that there have been of the spiral – an unusual characteristic in music education research. Fautley and Daubney conclude by placing the spiral into a current policy context through a detailed discussion of the Model Music Curriculum and suggest that music education is as much about preparing children for future musical activity as it is about the reproduction of music of the past.

The future of musical development

The Swanwick/Tillman spiral has already been developed into different formulations by the original authors themselves (Swanwick, 1994; Swanwick, 1999; Boyce-Tillman, 2006). Spiral formations have also been reimagined and reinterpreted in musical development contexts (Fautley and Daubney 2015, 2019; Charanga Musical School, 2015) and it seems likely that this will continue. It is therefore apposite to consider what might be next for spiral influenced interpretations of musical development and how the spiral might be further refined. It may be that the spiral could be extended, as tantalisingly indicated with its torn edges where it begins and ends in its original formulation. Perhaps the orientation of the spiral is yet to be explored, where development is represented as occurring from vertical to lateral movement or combines both these planes. This may be what Swanwick and Tillman themselves had in mind with their horizontal arrow indicating the possibilities of social sharing arising from the spiral. Understanding musical development in terms of movement within spiral boundaries and how such pathways may be formulated, rather than as a static model, may be another notion which has the potential for development in the years ahead. Scholarship will no doubt uncover new ways of thinking about spirals from research data and interpretations of their validity in wider cultural contexts than was at first conceived. Whatever the future may hold, it seems likely that we have not heard the last of spirals of musical development. Now is the moment to review and reflect on how spirals have influenced thinking in music education and impacted on the musical experiences of young people. My aspiration is for this issue to make a thoughtful and important contribution to the field. I hope you will agree that the authors in this edition have achieved this aim.

Anthony Anderson

Acknowledgements. I am deeply indebted to all the authors who have given their time so generously to write the detailed articles contained in this special edition. I wish to thank them for their dedication to this task and for their kind responses to my many queries. I wish to give special thanks to Keith Swanwick and June Boyce-Tillman for their help and generosity in revisiting their earlier work and providing fresh insights. I also wish to acknowledge my deep gratitude to Martin Fautley and Alison Daubney for their belief in this project and tireless support and encouragement. My thanks also go to Cormac Lambe for his skill and expertise in assisting me to navigate the world of journal administration.

The Sequence of Musical Development: A Study of Children's Composition

Keith Swanwick and June Tillman

A musical development sequence is proposed based on the psychological concepts of mastery, imitation, imaginative play and metacognition, drawing on the work of Moog, Piaget and the observations of British writers. An interpretation of over seven hundred children's compositions is undertaken yielding an eight-mode spiral of development that may have consequences for music teaching; for overall music curriculum planning, for appropriate responses to individuals, for generating progression in a session or project.

Introduction

Everyday observation tells us that children develop as they grow older and that this development relies on an interaction between the genetic inheritance of each individual and the environment – the physical world, home, school, society. A second 'commonsense' observation is that there is an element of predictability about this process of development. We learn to walk before we can run, to stand up before we can do either, to imitate before we utter original statements, to become capable of sexual reproduction only when adolescence is reached. Of course, each person imposes his or her own style on these developmental processes, but that there is development and that there are at least broad patterns of development are facts beyond dispute. Furthermore, it seems important, especially for teachers and parents, to have some understanding, of this, a set of expectations that corresponds to the maturation of children in their care.

Maccoby tells us that we should notice two general meanings of the term development. The first, which he calls a 'softer' meaning, is the idea of sequence, that development will occur in a certain order, 'early behavioural acquisitions are necessary, though not sufficient, for later steps to occur'. The second meaning 'goes beyond sequence', and points to 'broad developmental changes that occur in almost all children according to a fairly standard timetable' (Maccoby, 1984).

In our study of the musical compositions of children between the ages of 3 and 15, we are certainly finding that there is a sequence, an orderly unfolding of musical behaviour, that there

are stages through which the musical utterances of children can be traced. Because our study took place largely in one school it would be unwise to be too dogmatic about identifying broad developmental changes to a fairly standard timetable, especially to generalise this to 'almost *all* children'. However, this possibility is not ruled out and we have found several writers who, from quite different perspectives, seem to support our findings.

Strangely, with one exception, those researchers directly concerned with the musical development of children have been least influential for us. The classic text by Helmut Moog, *The Musical Experience of the Pre-School Child* (1976) has, by definition, little to say about the school-age child but is rich in detail so far as the very early years are concerned. Much of his observation is concerned with response to music in the role of audience, including an element of movement to music, in reproductive accuracy in singing and in the kind of song repertoire acquired by children. Less is said about children's musical utterances, the activity which we are calling 'composition', though we shall find Moog helpful.

A fine example of the analysis of children's compositions is to be found in Loane (1984). Here he examines the compositions of 11- to 14-year-olds, undertaking an 'assessment' for formative purposes, in order that the teacher might respond adequately to the children's music. His work is theoretically based on the ideas of Langer: music is seen as a 'way of knowing'. This sensitive and subtle approach to the compositions of children, while saying little about development in the sense we are using the term, illustrates very clearly the value of declaring a conceptual framework. Without such a framework, any account of musical development in children will be simply descriptive, lacking in interpretative power and the ability to relate the music of a particular child to the music of others.

By happy chance, one of us was engaged in developing a conceptual framework relating activity in the arts to human play: at the same time, the other was working with children in primary schools, building up a library of tape-recorded data. The theory and practice have come together in what we think is an exciting way, each illuminating and challenging the other.

The theoretical basis

Our theoretical basis can be found in the paper *The Arts in Education: Dreaming or Wide Awake?* (Swanwick, 1983). Part of the discussion centres on the idea that play, a very important human activity, is intrinsically bound up with all artistic activity, the early and obviously playful activities of children being sublimated into activities such as painting pictures, playing music and reading novels. A powerful influence in the development of this view is Piaget, though not the Piaget of tightly formulated stages of development but the Piaget concerned with

fundamental human processes, the ways in which we make sense of and grow into the world.

Piaget notes that play in very early childhood is characterised by the sheer pleasure of exploring and mastering the environment, what he calls 'a feeling of virtuosity or power' (Piaget, 1951). We can see how this impulse to *mastery* evolves into musical activities. The handling of voices and instruments, the development of ensemble skills, the use of notations, delight in the virtuosity of others; these are obvious elements of mastery. There is surely a continuum from the pleasure experienced by a baby who has just learned to drop things out of the pram, and for sheer joy does this over and over again, and the satisfaction of the sitar player technically exploiting the potential of a particular *râga*.

We ought to notice one other thing; control of materials

presupposes *delight in materials*. Sounds themselves seem to be intrinsically interesting before and during the process of trying to control them. We remember Grieg being excited as a boy of six by chords of the ninth, simply as a sound phenomenon; or Kenneth Grahame (the author of *The Wind in the Willows*) writing about his boyhood 'strumming' on a piano where some notes were red and some were green and some told of armies marching and, up above (it has to be a grand piano) 'the little white men leap and peep and strive against the imprisoning wires'; and also Stockhausen, who writes for his performers of *Gold Dust*, 'after four days, late at night, without conversation beforehand play single sounds *without thinking* which you are playing. Close your eyes, just listen'.

Another Piagetian concept is called, simply, *imitation*. Imitation is also easy to identify in early childhood: it happens when a child submits to the world and attempts to resemble some aspect of it. S/he may identify with and pretend to be a parent, a friend, a tiger or a teacher. When we imitate something or someone, we give up some part of ourselves and take on characteristics of whatever is imitated. For Piaget, imitation represents a tendency towards 'accommodation'. We accommodate to, change ourselves, pretend to be like; rather than impose our idiosyncratic view upon the world.

Elements of imitation are more obviously present in the arts when they are representational; that is to say, when there is reference to events in life – in stories and drama, in poems and paintings. Imitation is also obvious enough in programme music and in opera, but it is also true that even in the most 'abstract' musical works there are elements of imitation. Every performance of a Bach fugue has its own particular universe of gestures, of feeling and emphasis; it has *expressive character*. Musical characterisation is a development from the 'let's pretend' imitation that we find in early childhood.

A little later on in infancy, play becomes *imaginative* and according to Piaget, 'subjects things to the child's activity, without rules or limitations'. Anyone who has close relationships with young children will know about imaginative play. Objects and people are transformed into other than themselves and sometimes things are conjured out of the air. At one time, one of the writers was accompanied on walks not only by his three children but also by a horse which, though invisible, made great demands on us all and caused us to open gates rather than climb stiles. This enigmatic animal was a fairly constant companion for several months and was a vivid part of the imaginative world of this particular child. For Piaget, imaginative play tends towards what he calls 'assimilation' and stands at the opposite pole from imitation. The imaginative play-world is made by the child for the child; events and objects are assimilated into this world and transformed to fit into the unique make-believe perspective of the individual.

In imaginative play we create a world of transformed relation-

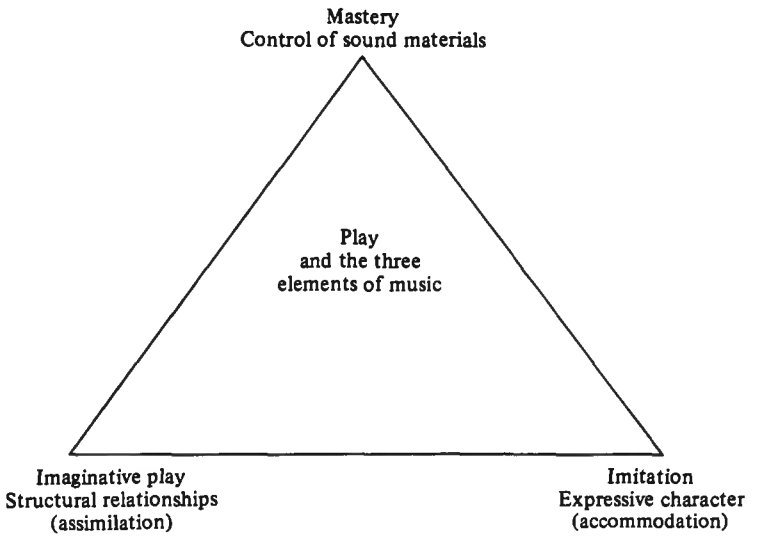


Fig. 1

ships which we ourselves govern. This is clearly so with the composer-musician. A new realm is created in a musical composition; for example, although the musical vocabulary of Mozart might often be fairly commonplace, 'of its time', it is transformed by the creation of new *relationships*, through the imaginative power of the composer. Imaginative play has to do with structural transformations, with personal interpretation, reconstituting reality.

Figure 1 may help to summarise the relationships between the concepts of *mastery*, *imitation* and *imaginative play*, and the analogous musical play elements; control of sound, expressive character and structure.

As we shall see, this theoretical starting point allows us to interpret and to order the musical offerings of children in a developmental way. For it becomes clear from our data that the musical compositions of children tend to follow a broad sequence of development through stages of Mastery, Imitation and Imaginative play, in that order. Moog has observed the beginning of this process with six-month-old babies, where 'attention is given first and foremost to the sound itself'. He cites other researchers who support this view, especially Mursell (1948). 'There are strong reasons for believing that a young child's primary responsiveness to music is first and foremost the tone itself, and not, as is sometimes asserted without any good evidence, to rhythm or to melody.' Mursell is prepared to emphasise this point, stating that 'during the pre-school and even the kindergarten period, the child is much more preoccupied with the tonal content and appeal of music than with anything else about it'.

Moog notes that his own observations of young children lead him to the conclusion that 'during the second year it is still the

sensory impression of the sound, together with the rhythm, which lie at the heart of musical experience' (p. 86). Moog also observes that before the age of one year the songs of children bear 'no resemblance to what is sung or played to them' (p. 62). A good deal of what Moog calls musical babbling goes on, and this is clearly related to the fascination of sound itself and the pleasure of beginning to control sound. After the age of 1, children begin to demonstrate the art of reproducing what they hear, a form of mastery which increases progressively. There is, then, a clear indication here of a move from interest (delight) in sound towards control of materials, and this seems to be the first important shift in the musical development of very young children.

Although Moog does not develop a unified theoretical framework, he identifies an important change during the second year concerning movement to music. Somewhere between the ages of 18 months and 2 years children begin to 'match their movements to the rhythm of the music'. This is rather fitful and short-lived, and not every child does this at this age, but it is surely the first presage of response to expressive character in music. When a person moves to music what we are seeing is a physical imitation of the sonorous movement of music and, although movement to music made spontaneously tends to diminish in the later years of infancy, its presence at this stage is a helpful outward manifestation of this relationship.

One further example from the work of Moog will serve to reinforce the view that our preliminary picture of musical engagement has some foundation and that there may indeed be a sequence of development to be observed, if we are patient enough to look for it. Moog notes (p. 114) that a new category of singing emerges at around the age of 4. He calls these songs 'imaginative songs', and fortunately the word imaginative here coincides with our use of it (unlike his use of the word 'imitative', which refers only to the mastery of a song learned by imitation). Some of these songs tell stories, some of them are totally novel and some incorporate elements of songs already known but rearranged in new ways. Here, then, is a hint of the emergence of imaginative play, the forming of new structural relationships from scraps of tunes already absorbed during earlier stages, though Moog would not consider the 4-year-old capable of 'original creation' (p. 21). By the time children come to school they have visited every corner of our theoretical triangle, with Mastery most evident but with the first glimmers of Imitation and Imaginative play and, as we shall see, each mode of playfulness will be revisited and given more emphasis later on.

Unfortunately, for most children these are not reinforced at home and in the community and the unfolding of Imitation and Imaginative play in music lags behind language and other areas of development.

Collecting and analysing the compositions

The first empirical task was to try to verify our hunch that musical development occurs in a particular order and that this sequence can be observed in children of school age. We needed a pilot study.

The most direct and uncomplicated way of doing this is to observe the compositional processes of children. We define 'composition' very broadly and include the briefest utterances as well as more worked out and sustained invention. Composition takes place when there is freedom to choose the ordering of music, without notational or other forms of detailed performance instruction. Others may prefer to use the terms improvisation, invention or 'creative music'. All of these fall within our definition of 'composition'. The advantage of this approach is that we are observing relatively undirected musical *processes* rather than the *products* of polished performances, directly influenced by teachers and peers.

Musical offerings were collected from children aged 3 to 9 years in a South London primary school. The school was racially mixed, having children of Asian, West Indian, African, Northern and Southern European backgrounds. The children chosen were taken so as to be representative of the mix in the school, both girls and boys. They included those having individual or group lessons on an instrument and those who did not. All the children had class music lessons with a music specialist (the researcher) that varied in length from 20 minutes a week for the 3 to 4-year-olds to two half hours a week for the 5 to 7-year-olds and one half hour a week for the 8 to 9-year-olds. In some classes this music work was followed up by the class teacher, particularly with the 3 to 4-year-olds. The lessons all included elements of musical composition and some of the older children had been involved in quite long, complex projects, including composing music for stories of some half-hour's duration, sometimes with dance and drama.

Each child was recorded individually or in a small group (2 or 3 at the most) and was given a variety of musical opportunities.

(1) First of all, s/he was given one or a pair of maracas and asked to make up a pattern. (This instrument was chosen on the grounds that it is easy to manipulate, demanding the least technical skill, shaking being a baby's first movement.)

(2) Secondly, s/he was given a tambour and asked to make up a pattern for it played with the hand. (This was considered the next most easy instrument to play.)

(3) Thirdly, s/he was offered a choice of instruments with which s/he would be familiar (tambour, maraca, Indian cymbal, triangle, claves, castanets, tambourine), including the maracas and tambour already played, and asked to make up a piece with it.

(4) The child was offered a choice of instruments with which

Sequence of development
Keith Swanwick
and
June Tillman

s/he was not familiar and asked to make up a pattern for it. The choice offered was gato drum, cabassa, tambour, guiro, bass drum, tubo and large cymbal. It was hoped to find out the grounds on which the choice was made but the direct question produced little response.

(5) The child was offered the chime bars of E, G and A and one beater and asked to make up a pattern for them. (This gave a limited number of pitches to control.)

(6) The child was offered a xylophone with a pentatonic scale and two beaters and asked to make up a piece.

(7) The child was offered a metallophone with the scale of C major on it and two beaters and asked to make some music. (This further increased the pitch scope.)

(8) The child was offered a fully chromatic xylophone with two beaters and asked to make up a piece. (This gave yet more freedom of pitch.)

(9) The child was asked to 'say something' like, 'It is sunny and I am happy', on any of the instruments available. (This was designed to see if the introduction of an extra-musical idea (imitative play) produced different results compared with starting from sound materials.)

(10) The child was asked to sing a song that s/he had made up. S/he was given the option of having words or humming or 'lahing'. Sometimes, if no response was forthcoming, the researcher sang a phrase to which the child responded. This usually consisted of *lah*, *soh* and *mi*. (The child would be familiar with this activity from class lessons.)

All these were recorded together with the necessary conversations. Later, procedure was refined so that each child was asked to repeat each task, to see the extent of his/her musical memory and note which elements in the composition survived, an indication of what was important to the child. (In later interviews, tasks 3 and 4 were combined and task 8 was omitted. A new possibility was added. Each child was asked to draw on the other children and the researcher to make up a piece for a group of instruments. S/he was to decide which instruments they would play and give any instructions s/he wanted.)

A tape was prepared, giving fairly typical examples of the work of children aged 3 to 9 years. Three examples were chosen from their second versions. The edited tape contained these pieces but in randomised age order. In actual age order, the following notes give a rough impression of what the judges heard. (All notations are approximate. Some examples can be found on the accompanying cassette tape.)

Three-year-old girl:

(*a*) an attempt at a steady beat on a maraca with some half-pulse notes;

(*b*) eleven steady drum beats;

(*c*) an uneven and irregular exploration on a xylophone using two sticks going up and down the range of bars.

Four-year-old boy:

(*a*) a steady beat pattern on a drum involving some half-pulse notes;

(*b*) an irregular exploration on the gato drum with two sticks, sometimes hitting the wooden surround;

(*c*) an exploration on a xylophone using two sticks involving some pairs of quavers and with some underlying sense of a beat.

Five-year-old boy:

(*a*) long irregular beat pattern on maracas which are sometimes hit together;

(*b*)  starts a long pattern on small cymbals – developed into a pattern involv- *Example 1*

ing some shorter and some longer notes – a fairly steady underlying beat which became more erratic towards the end – no sense of ending, several attempts at stopping

(*c*) a long exploration on a xylophone – developed into a pattern involving short and long sounds with a fairly steady underlying beat – sometimes two notes were used together and sometimes the wood of the instrument is hit.

Six-year-old girl:

Example 2 (*a*)  on a drum;

Example 3 (*b*)  on small cymbal;

Example 4 (*c*)  on chime bars.

Seven-year-old girl:

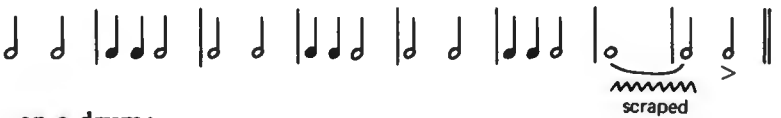
Example 5 (*a*) 

on a drum – the syncopation at the end was handled a little hesitantly;

Example 6 (*b*)  on a xylophone with some development of melodic ideas;

(*c*) an eight-bar tune on metallophone involving a good deal of repetition and accompanied by a beat on small cymbals and Indian cymbals (difficult if not impossible to notate).

Eight-year-old girl:

Example 7 (*a*) 

on a drum;

(*b*) a development of a melodic pattern involving augmentation and diminution on three chime bars;

(*c*) twelve bars on the xylophone not clearly defined because the beat got faster and appeared unsteady.

Nine-year-old girl:

Example 8 (*a*) 

on a drum;

(*b*) an eight-bar tune in four-time in clear-cut phrases involv-

ing some half-pulse notes and some repetition of ideas on three chime bars;

(*c*) an eight-bar tune in four-time on a diatonic xylophone with some repetition of ideas – clear-cut phrases – some sense of the potential of the diatonic scale – some syncopation.

Three independent judges were asked to listen to the tape recording containing the three items from all seven children, ranging from the age of 3 to 9. The age of each child was not revealed and the age order was randomised. The judges were asked to rank the ages of the children from the evidence they heard on the tape. One of the judges, a teacher but not experienced musically, found this task almost impossible and said so but the other two, who were both musicians and experienced teachers, managed the task without too much difficulty and gave interesting reasons why they thought that a particular group of compositions were from an older or a younger child. These comments were frequently to do with the level of mastery and the degree of structural organisation.

If we look at the estimated ages given by the two appropriately experienced judges and compare them with the actual age we find a strong relationship.

Actual ages	9	8	7	6	5	4	3
Judge 1	8	9	7	4	5	6	3
Judge 2	7	8	9	4	5	6	3

Fig. 2. Actual and estimated ages of children. (The statistical probability of the two judges agreeing so closely with each other and with the actual age order by mere chance is fairly remote. See Statistical Note 1.)

This is quite helpful. There do appear to be observable differences between the musical utterances of children that vary with age, at least when there is a musical environment in the school. Questions remain: what are these differences and can they be found in a larger sample? In order to answer it is necessary to further refine the model so far developed, though it should be pointed out that the categories about to be described were not pulled out of 'thin air' or merely derived from the literature but emerged as further analysis proceeded of several hundred compositions offered by forty-eight children over four years.

Towards a model of musical development

As we moved towards completing this analysis, the emergent picture was strikingly confirmed for us by Malcolm Ross who, in a speculative book, puts forward his own description of the process of aesthetic development in the arts (Ross, 1984).

For the purposes of comparison with our own analysis, it will

serve to pull out some of the key statements made by Ross giving four periods of development in music, especially those categories of statement that coincide with his descriptions of the process in Art and Drama (pp. 129–30).

(1) (Years 0–2) Pure sensuous engagement with sound materials, along with experimentation and beginning to relate music to feeling or mood characterises, for Ross, the early years.

(2) (Years 3–7) This stage is characterised by musical doodling, especially vocal doodling, and the progressive mastery of what Ross calls 'sound structures and patterns'. He notes the beginning of anticipation in music. Interestingly, in Art and Drama he begins to see perception of expressive gesture developing, of signs as 'representative' of experience.

In our terms, these two stages seem to correspond with delight in sound itself leading to control of materials, the play element of *Mastery*, moving into *Imitation*, where expressive character, gesture, mood and feeling are recognised and reproduced.

(3) (Years 8–13) This, for Ross, is marked by concern with the 'conventions of musical production', a desire to 'join the adult scene'. Programme or 'narrative and descriptive music makes sense'. There is a desire to become 'conventionally proficient' and teachers must 'satisfy the demand for greater conventional competence'. We shall meet this concept again shortly when we refer to an interesting paper by Robert Bunting (1977). For the moment it will suffice to notice that the important element here is that of working within an accepted musical idiom.

(4) (Years 14+) Here music is seen as taking on greater significance as a form of personal expression, 'embodying, meaning and vision', significant for an individual or for a community.

If we are to take Ross's observation, that powers of anticipation begin to develop during his second stage, as signifying the beginnings of concern for structural relationships, then the overarching sequence of development seems to run through *Mastery* and *Imitation* to *Imaginative Play*. We would emphasise that each one of these is swept up into the next developmental thrust and is repeatedly revisited. For example, if we begin to handle a new instrument, or work in a new idiom, or explore a new piece of music, we are sent immediately back to the problems of mastery. It is important to be clear that we regard these developments as cumulative and cyclical and, to use the words of Maccoby, recognise that the 'early behavioural acquisitions are necessary, though not sufficient, for later steps to occur'.

We have referred to the work of Bunting which appeared as *Working Paper 6* of the Schools Council Project, *Music in the Secondary School Curriculum* (1977). This paper has as its focus the idea of the *Vernacular*, 'the common language of music', what Ross calls the 'conventions of musical production'. It seems a remarkably perceptive view of developmental possi-

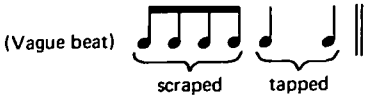
bilities written from the perspective of a teacher in a secondary school.

Bunting identifies several modes of musical perception and these descriptions fit well into our own developmental sequence, as established by analysis of the children's compositions. He does not always appear to order his modes of musical perception in a developmental sequence but there are hints of this.

Mastery – sensory response to sound materials – evolving into manipulative control

Bunting uses three terms here: neurological; acoustical; mechanical. The neurological mode he describes as 'the reaction of the nervous system to sensations of timbre, rhythm, pitch, quite independently of the analytical mind'. He notes that the use of very high or low pitches or loud or soft instrumentation brings the neurological impact of music forward. Related to this, the acoustical mode has to do with the interaction of sound with the size and design of buildings in which music is played. We can be 'affected as much by the degree of resonance as sound is given, as by its pitch or syntactical meaning'. He gives as instances the use of open strings and mutes or the use of space and distance for musical impact. In the compositions of our very young children, at the age of 3 or 4, we notice an interest in very soft and loud sounds, a big bang on the bass drum followed by sheer delight or fear, or a preference for the very soft sounds of a shaker or Indian cymbal. Both the neurological and the acoustical mode are evident in the young child's primary concern with the tone colour of an instrument, experimenting with short and long sounds, or slow and fast shakes of a shaker, or fingers and fists on the surfaces of drums.

In the work of these younger children it is often difficult to sort out exploration of tone colour from problems of mastery. Below this age, it is clear that the 'sensory impression of the sound', as Moog puts it, predominates. The programmatic task at 3 to 4 tended to elicit pieces still primarily concerned with timbre, as when a tubo (a small shaker) is explored, by a boy aged 3.10 in response to the task of making up a piece about 'Spring'. As children get older, the exploration becomes more deliberate; as in the case of a girl aged 4.3 for tambour, when, in the course of a long composition with an uneven beat, she hit the wood intentionally, and an 'Autumn' piece for a pair of plastic cymbals, in which interest lay in the cymbals, which were sometimes clicked together and sometimes rubbed. The 'scraper' provided opportunities, not only for scraping, but also for tapping, as in this short piece by a girl aged 4.8.



Example 9

The wooden agogo provided the same girl with the chance of exploring rhythm and timbre together, giving rise to variations

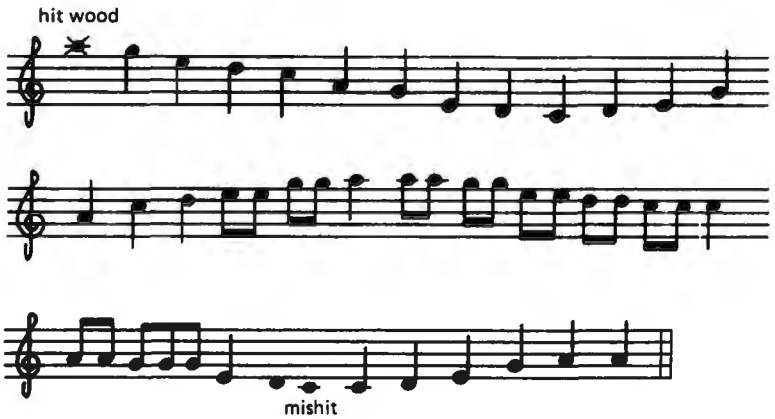
Example 10

Both tambour and maracas provided children with chances for the exploration of timbre. A piece by a boy aged 4.5 shows the hand being rubbed over the surface, while a boy aged 4.7 uses his hand flat and in a fist. Maracas are sometimes used together, sometimes separately and are sometimes knocked together. A composition from a girl aged 4.2 has the two knocked together, although many other aspects are explored such as gradual changes in dynamics and a change of speed at the end. The beginning of phrase structure is shown in the opening, which is repeated.

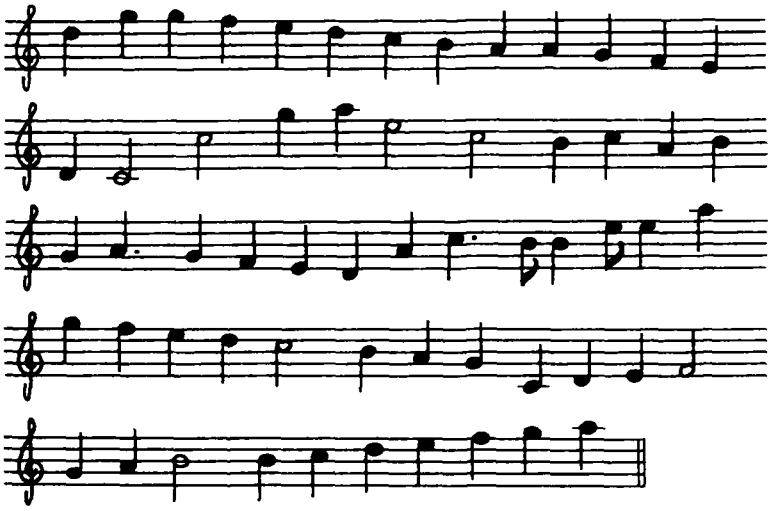
Example 11

Clearly, all these activities belong in the category of *Mastery* and move from curiosity and delight into experimental manipulation. There are other features. Bunting notes that 'a composer can make music out of purely mechanical processes (for instance where hands on a keyboard move in contrary motion he may accept whatever harmonies result)'. Younger children are fascinated by the alternation of two sticks on pitched instruments and produce pieces in which pitch organisation is determined by mechanical alternation often producing trills and tremolos. Other patterns go up and down a series, as in this pentatonic piece by a girl aged 5.0.

Example 12



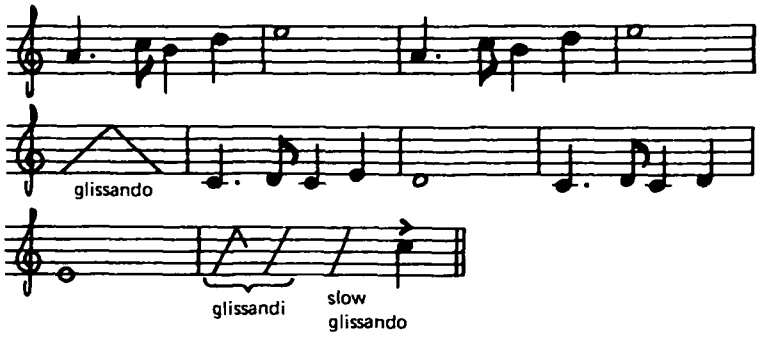
A piece by a boy of 4.5 has exploration of scales and sequences starting on apparently random pitches, although there is some influence of the extremes of the instrument in the choice of starting and finishing notes.



Example 13

Delight in sound and the urge towards manipulative mastery through exploration is swept up into succeeding stages of development and is evident in the musical productions of children of all ages. At these later stages, though, interest in and control of sound is combined with a developing concern for expressive character and structural relationships. The more developed explorations of older children include the use of different beaters for different purposes and experimentation with more systematic ways of organising sound. Older children, when playing together, usually give some kind of starting and stopping signal and use a variety of methods of combination, including the 'layer' device, where players start and finish in series, building up and then reducing the texture. Younger children have very little idea as to how their sounds may be combined with the sounds of others. We noted an exuberant piece for gato drum and metallophone, in which both players pursued their own pulse patterns regardless of each other. There was, however, an instruction to stop!

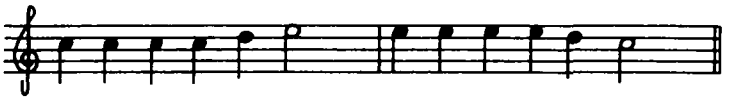
With older children the visual and physical characteristics of instruments continue to exert an influence on musical productions but in more sophisticated and structured ways. The ubiquitous glissando appears in early musical offerings as an ending. The glissando is often used as a contrasting device, as we noted in a piece by a girl aged 11.5.



Example 14

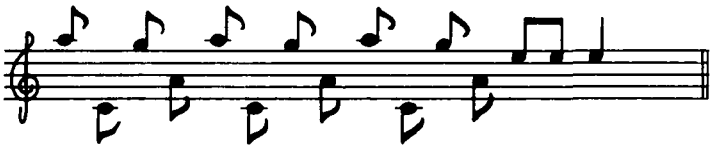
A melody by a girl aged 7.8 shows an inversion which appears to be influenced by the visual aspect of the instrument.

Example 15



An interesting example of the use of mechanical patterns occurs when more than one is used together. In one example, by a girl aged 11.7, each hand pursues its own muscular sequence in alternation with the other.

Example 16



It is important to stress that the shift from sensory exploration towards manipulative skills – the phase of mastery essentially concerned with the *materials* of music – is an on-going concern at any stage of development and is reactivated every time we confront a new musical idea, idiom or work. Readers may perhaps share the experience of the writers in that, if deprived of music for some little time, the first and most striking impression of music when it is rediscovered is of its sensory surface, the sounds themselves. This is particularly noticeable at the start of a concert or when we come across music accidentally.

Imitation – personal expression moving towards the vernacular

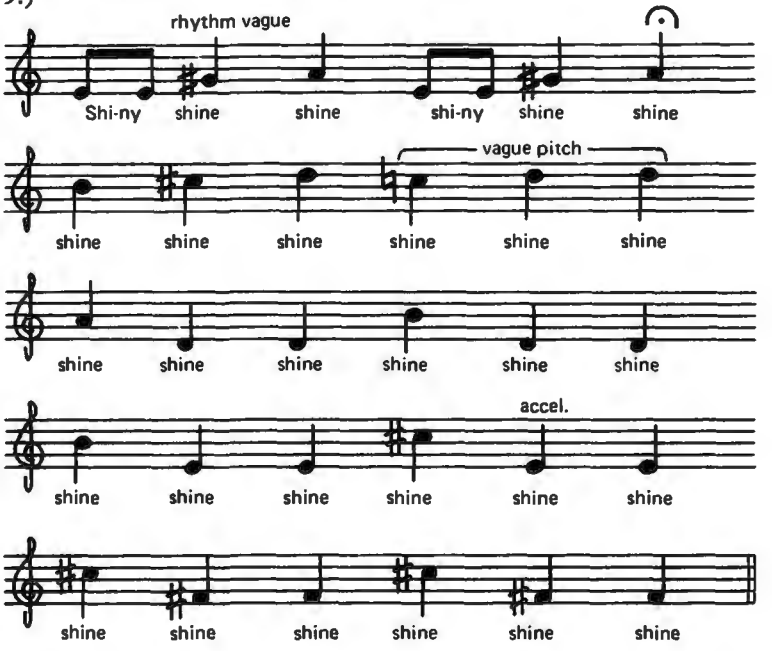
Bunting uses the term *illustrative*, 'a way of giving music meaning by association'. He suggests a range of illustrative devices, from such obvious things as a drum roll signifying thunder to the more subtle possibility of a drum roll signifying anger. This is important for us. In our category of *Imitation*, we are not referring to a rather crude copying of sounds using musical instruments. This kind of procedure, the literal making of 'sound effects', is rarely present in the musical work of our children of school age; nor is it observed by Moog at younger ages. Even at its simplest, music is much more abstract than this.

We are more concerned with the tendency of music to be *expressive*, without being in any way illustrative, or representational. Music rarely appears to have a conveniently describable 'subject', yet does seem to contain an expressive charge: we hear gestures, character and movement in music. Bunting appears to believe that this level of musical perception, which he calls the 'symbolic mode' appears late, towards the end of schooling, if at all. In this he may be misled by children's responses going 'underground', blocking out the gaze of the outside observer, especially in adolescence. We detect expressive quality much earlier on in the musical behaviour of children. Bunting puts

it rather well when he says that 'musical rhythms and tensions seem to mirror the flow of feeling within us in a direct, non-verbal and non-illustrative way. Most of us would consider this music's most important quality and it is not a thinking process but a feeling one' (p. 4).

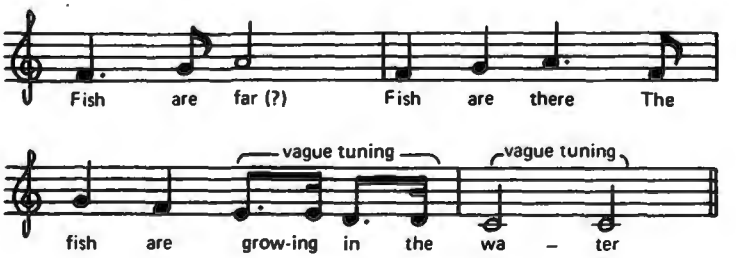
It is in the songs of children that the first signs of *Imitation*, acts of musical *expression*, begin to appear. It may be that the personal and 'non-technical' nature of the human voice makes early expression more likely. The exuberant imitation of feeling in improvised songs is well caught in a composition by a girl of 4 in response to the idea 'the sun is shining'. (On tape–example 9.)

Example 17

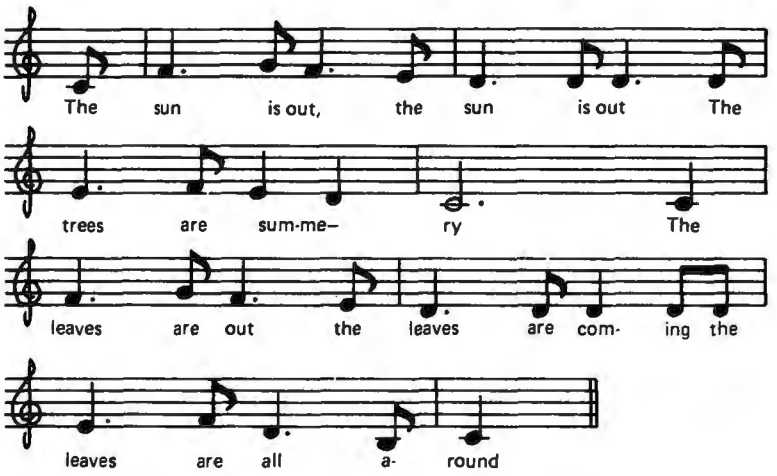


After a steady beginning with some element of repetition, the widening intervals and increase in speed give us an almost first-hand experience of the excitement generated by the idea of 'shine'. Although the idea of 'shine' is an external one, it is clear in this performance that the child is taken over by a sense of shining. She herself *shines*: the process of imitation is clear. Two songs, one by a girl aged 4.5, the other by a boy aged 4.7, clearly show that they are able to catch and hold expressive character in their music.

Example 18



Example 19



These songs go well beyond manipulative control. They also show the emergence of a musical vernacular.

The instrumental pieces are much less developed but we can detect an expressive intention in a good number of them – a reflective quality about a chime bar improvisation, despite its unsteady pulse, an expansive gesture in a maraca pattern which starts as a steady pulse with no regular metre and then builds up with a crescendo and accelerando to an explosive climax at the end (a boy aged 4.5 and a girl aged 4.7). Changes in loudness and speed frequently play a crucial part in determining expressive character.

An important shift in the process of *Imitation* is from the personal and idiosyncratic towards socially shared *Vernacular* conventions. The imitative aspect of expressiveness, the sense of 'pretending to shine' in musical gestures, may begin as *Personal* expression but is soon swept up into a community of musical commonplaces; shaped phrases and received melodies, rhythm patterns and repeated formulas. What Bunting calls 'the common language of music' takes over as the dominant influence, as learned songs are incorporated into the musical inventions of children, as metrical patterns, syncopations and phrase-shapes are acquired within general musical conventions. Moog noticed this to some extent in the singing of his 4-year-olds but it becomes much more evident by around the age of 7, when musical gestures are more stylised, borrowed from tradition, though perhaps with modifications.

Example 20

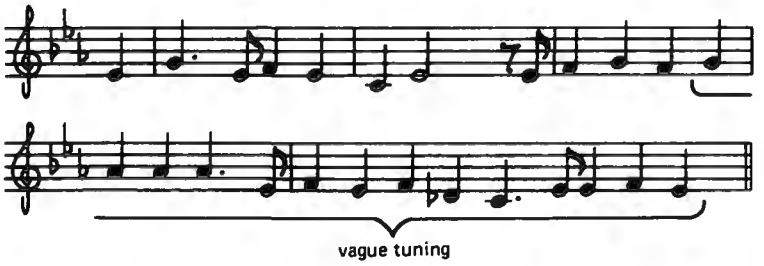
The contrast between this kind of thing and 'Shine' is striking yet very frequently observed. What is imitated is not so much an expressiveness arising directly from the child's state of feeling but an entry into a world of cliché, where expressive character appears to be secondhand. This may seem a regressive

step, but it is certainly an important and necessary one if children are to share musical procedures. The music is not without expression but the expressiveness tends to be borrowed, as when common rhythmic or melodic patterns are repeated, or when fairly conventional answering phrases appear, unambitious musical gestures.

Example 21

Example 22

It is often difficult to decide what is happening to melodies that are already known. Is the tune being attempted, though inaccurately, or is a new tune being invented on a kind of subconscious model of that already learned, as in the case of this incomplete transformation of 'A Sailor went to Sea'?



Example 23

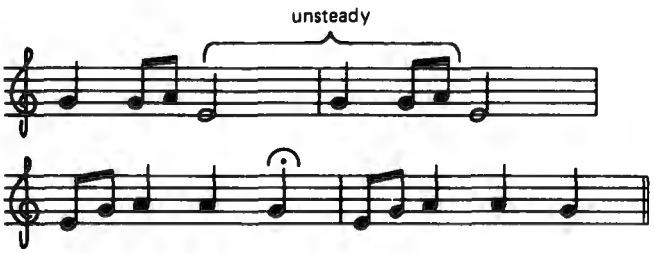
Of course, just as we shall still find examples of sensory exploration and manipulative interest, it is also possible, throughout this long period of development, to find direct personal expressiveness. The main thrust of development, though, is from the *Personal* to the *Vernacular*, from individual expressiveness to that which is socially shared. As Ross puts it, there is a desire to become 'conventionally proficient'. As we shall see, this desire returns again in a much stronger form in the third main surge of development, which is related to Piaget's concept of imaginative play.

Imaginative play – the speculative merging into the idiomatic

We take from Bunting the term *Speculative*. He writes: 'a composer may seek out new ideas by speculating on accepted musical conventions. Extreme cases are atonality and indeterminacy, but less radical speculations have always been part of our musical tradition.' Any musical speculation clearly depends on a grasp of the vernacular, for speculation implies that there is not only sufficient manipulative ability but also a history of personal and public expressiveness, there has to be a context of socially shared musical possibilities in order to create surprises and deviations from these norms. Around the age of 10, though usually closer to 11, we notice the emergence of the *Speculative* out of the commonplaces of the *Vernacular*. It is on this ability to identify new relationships that any grasp of musical *form* is predicated.

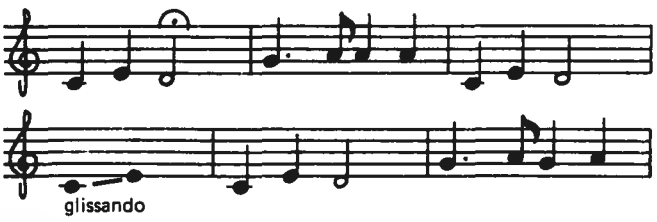
First attempts at musical speculation sometimes appear to be a kind of regression to earlier stages of manipulative insecurity. Some of the earlier fluency seems to be lost in a new phase of experimentation which is often focused on melodic development. A typical example comes from an 11-year-old girl:

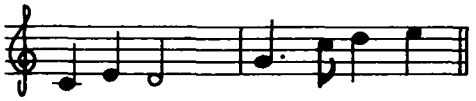
Example 24



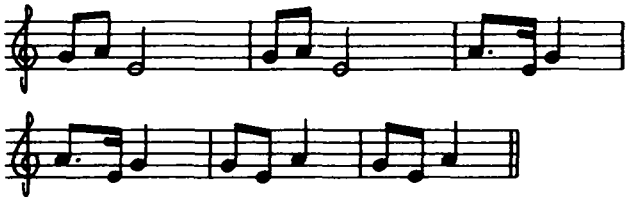
Some basics of the *Vernacular* – steady pulse and phrase – seem to erode as a search begins for the exact pitches which help to generate structural interest.

Example 25

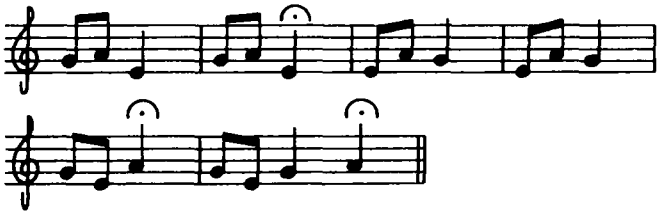




We notice in music by a boy aged 11 a similar concern with melodic development, employing a mixture of metre in the first instance but on repetition becoming fixed in duple time.

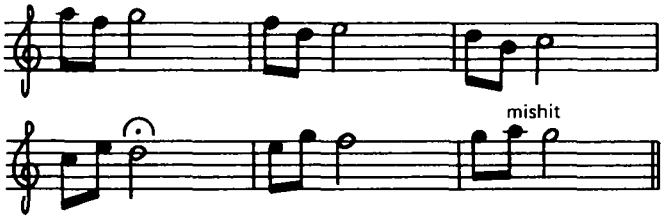


Example 26



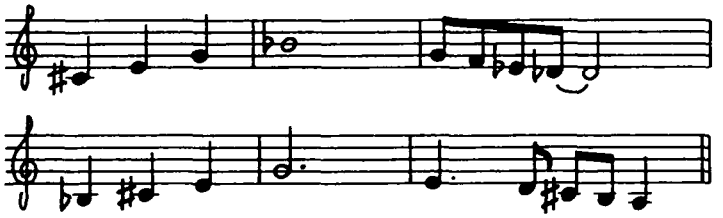
Example 27

Another boy of 11 appears to be speculating with melodic inversion. There is an initial hunting for a note as the inversion pattern is started and (probably) a mis-hit at the end.



Example 28

A piece by a girl aged 11.6 shows a bold attempt at atonality. Here again, the rhythmic control seems subordinate to searching for notes within a new structural framework of pitch relationships.

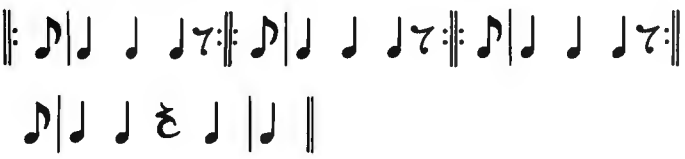


Example 29

We also find at and after the age of 11 many examples where speculation is more securely integrated into a style. This permits more effective surprise. The next example, played on a gato drum, shows the speculative impulse working in two ways. Each

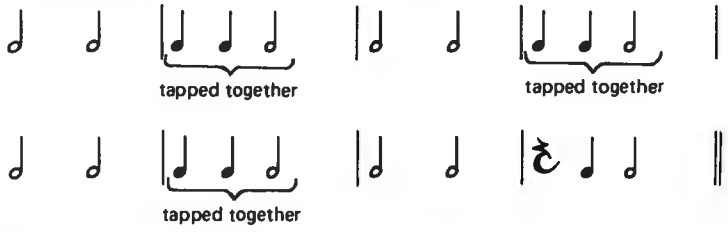
repeated section employs at the second hearing a different level of indeterminate pitch of which this particular drum is capable. This may seem to be simply a typical device from the vernacular mode, that of antiphonal repetition, but in this case it is so well used that we interpret it as speculation with the timbre/pitch of the gato. On the second level, she has developed a short rhythmic fragment and added a clear ending 'tag', a kind of 'punch line', which gives variety that would not have been possible by just repeating the pattern, perfectly controlled within the framework of the piece. She has grasped the vernacular and experimented with it successfully to produce music that has expressive character *and* an elegant form. (Taped example 17.)

Example 30



The use of the unexpected is often seen at the very beginning or ending of pieces, as in the next example, a maraca piece by a girl aged 11.2:

Example 31

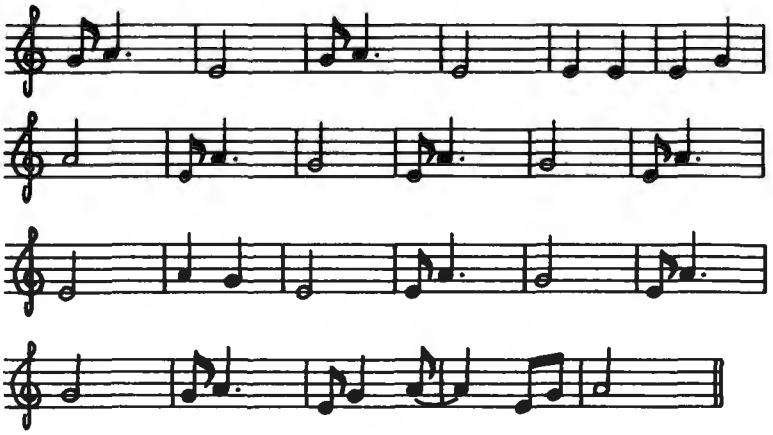


A boy aged 11.9 produced this tambour piece:

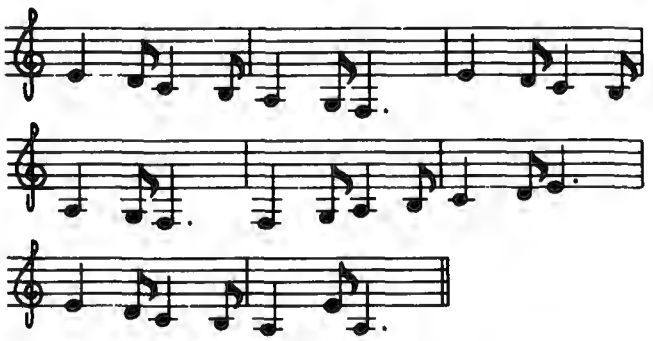
Example 32

Sometimes rhythmic devices of this kind are combined with melodic exploration, as in this composition for chime bars by a girl aged 11:

Example 33

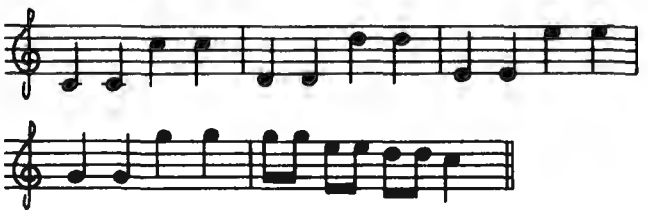


A song by a boy aged 11.9 shows both melodic development by the procedure of inversion and an ending emphasis by leap, which is in complete contrast to the general stepwise movement of the melody:



Example 34

A girl of 11.6 explores octave leaps but deliberately changes the character of the composition at the end, intentionally surprising us:



Example 35

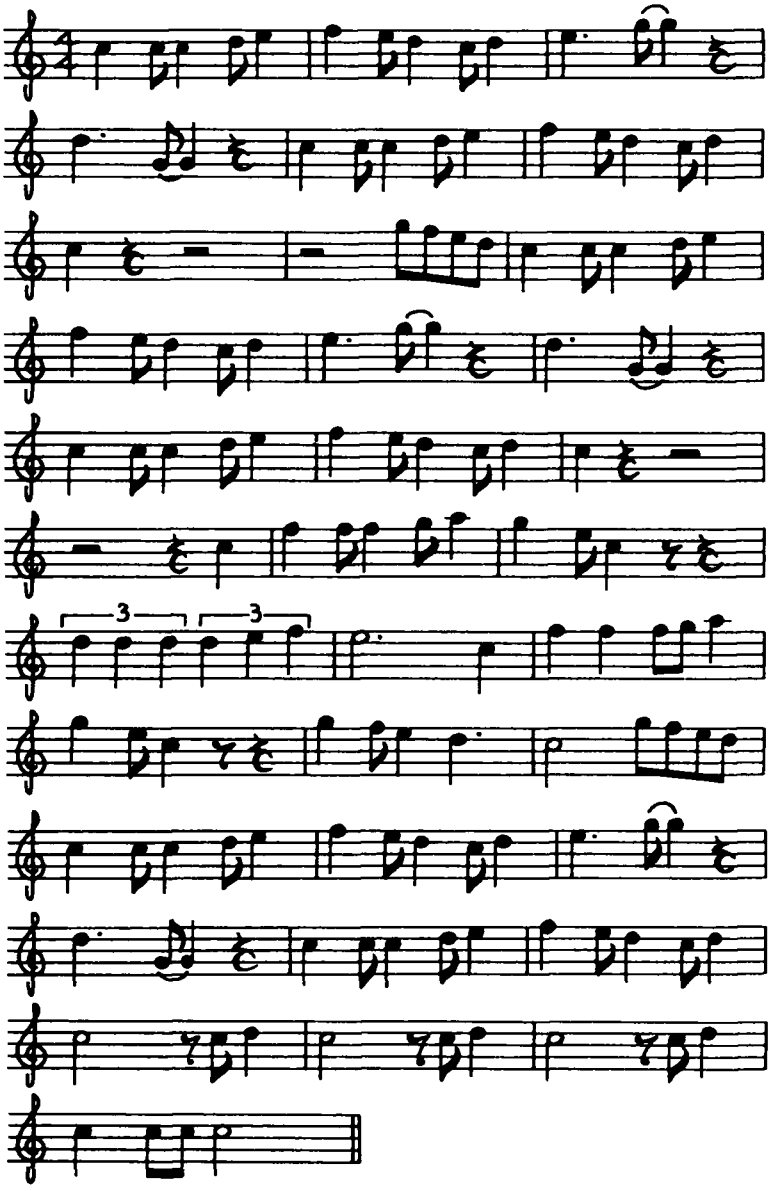
These examples are typical of the work of our 11-year-olds. In so many of their compositions there is an obvious delight in the formal possibilities of music with their potential for effective surprise.

The transition from the *Imaginative Play* element of the *Speculative* to the *Idiomatic* is somewhat similar to the development from *Personal* to *Vernacular* expression seen in the previous stage. There seems to be a periodic swing of focus, of psychological emphasis, between a more idiosyncratic relationship with music and the desire to conform to accepted norms. In the case of the *Vernacular*, the acceptance is of the most common musical procedures, involving such elements as pulse, metre, sequential patterns and phrase. With the *Idiomatic*, the accepted musical conventions are more strictly defined, often vigorously asserted, and usually defended with conviction. Frequently, the chosen idiom comes from the range of rock and pop music, though it is possible to find other strong commitments to a particular style or type of music between the ages of 10 and 15 years.

As with the *Speculative* phase, there is still tremendous concern for the excitement of sound materials and music's expressiveness, but the *Speculative* mode has initiated a new concern for musical form which is to persist thereafter, and this can still be seen despite the sometimes less experimental productions of an *Idiomatic* kind. Frequently, stylistical

authenticity is at a premium and, in many circumstances, is linked with dress, social behaviour, complete life-style. In some senses children have less freedom than was the case at the *Speculative* level, but they do have much more security and the feeling of belonging to an accepted musical convention. Teachers of young people at around this age commonly report resistance to anything but the accepted idiom and, in some cases, it seems that imaginative *Speculative* activity goes underground while repeated clichés dominate the musical landscape. However, speculation can be kept alive, and often emerges from inside the adopted convention. It has not been our main concern to collect compositions from children above the age of 11 or 12, but we do have some examples from the 14 to 15-year-old age-group. Among them is a striking calypso for bass xylophone.

Example 36



Here we can see that the calypso idiom is well assimilated but with strong elements of the *Speculative* in the use of rests and subtle variations and in the repetitions at the end. There is a very strong similarity between this and a published song, though the student believes her piece to be original and has since arranged it for a performing group. Conscious or unconscious copying is a frequent feature of the *Idiomatic* mode where the stylistic focus is more specific than in earlier vernacular compositions.

Two more 14-year-olds worked from the expressive idea of a 'Storm'. The piece, though, is not at all programmatic and is based on a clearly idiomatic motif repeated several times.

Example 37

Towards the middle of the composition there is a passage based on note clusters, an idea adapted from a contemporary piece they had recently heard at a concert. Following this, the motif on the piano is resumed and fades away until only an Indian cymbal is left. Once again the element of speculation is carried forward into the *Idiomatic* and, in this case, musical features from two quite different traditions are deliberately juxtaposed.

Meta-cognition – from symbolic value to systematic development

We feel able to speculate and project a fourth level of development which occurs beyond the age of about 15 years. The emphasis here would seem to be upon what psychologists call *Meta-cognition.* Basically, meta-cognition is to become aware of one's own thought processes. We are using the term here in a special sense, meaning self-awareness of the processes of thought and feeling in response to *music.* Central to this awareness is the development of a steady and often intense commitment to what Bunting calls 'the inner emotional content of music at a personal level'. A strong sense of *value*, often publicly declared, permeates this stage. This coincides with other developments frequently noted in the mid-teens; religious commitment, political affiliation, intense personal relationships and hero-worship have all been observed; we may ourselves have experienced them. People are not only intensely self-aware at this time but also are frequently articulate and wish to talk with others about their experiences and emerging value-systems. Bruner, in *Towards a Theory of Instruction* (1966), puts it this way; 'intellectual growth involves an increasing capacity to say to oneself and others, by means of words or symbols, what one has done or what one will do. This self-accounting or self-consciousness permits the transition from merely orderly behaviour to logical behaviour, so called. It is the process that leads to the eventual recognition of logical necessity – the so-called analytic mode of the philosophers – and takes human beings beyond empirical adaptation' (p. 15).

Although the transition from the *Idiomatic* mode into this new level of awareness is gradual and frequently imperceptible, there is a difference between the kind of commitment we have described to a particular musical style and the first stage of meta-cognitive development which we, adapting Bunting, call the *Symbolic.* The shift can be seen in the tendency for individuals to go their own way and be less concerned about any general consensus. People may begin to find that music of a particular kind begins to correspond with special personal needs. The record collections of, say, 17-year-olds are likely to be much more diverse than the recordings of young people at the age of 13 and before, when musical preferences seem largely determined by social consensus. It is possible to view this new commitment

as the first full flowering of aesthetic appreciation, involving all previous levels of response but adding to them a strong element of self-awareness, when young people can be overwhelmed by intensity of feeling and become acutely conscious of the fast-expounding boundaries of self.

It may be that, for many, such a level of response to music is never reached and only very few people engage with music at this level. Whether or not this need be so is another question.

The ultimate development within the Meta-cognitive mode we call the *Systematic*. There is plenty of evidence for this in the writings of musicians, especially composers. Here the strong sense of value within meta-cognitive processes leads to a commitment to systematic engagement. New musical universes are rolled back and this creation, not just of music but of musical *systems*, can be observed either in new generative musical procedures – we may think of Schoenberg and serial technique – or of talking and writing about music in a way that borders on the philosophical – and here we might think of Hindemith, Tippett, Cage, Copland and such personal documents as the letters of Beethoven. Not only is the value of music strongly felt and *declared*; the field of music is expanded by new processes or perspectives and these are offered to other minds.

The spiral

Thus we can see that the processes of musical development appear to lead us through four fundamental transformations.

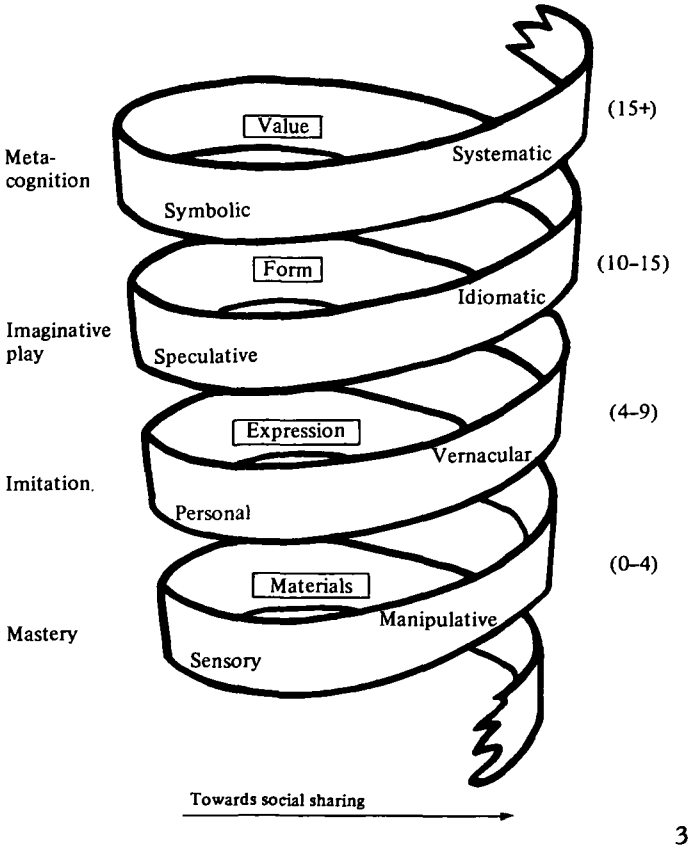


Fig. 3. Musical development.

Sequence of development
Keith Swanwick
and
June Tillman

It may be helpful here to summarise each of the eight developmental modes which appear in the spiral.

Sensory
Here the child is concerned with the impressiveness of sound, especially timbre. There is also a fascination with dynamic levels, especially the extremes of loudness and softness. There is much experimentation with a variety of sound sources, conventional instruments being only one source amongst many. There is desire to investigate the nature of sound, so that, for example, maracas are shaken and hit together, the wood of the drum is tapped as well as the skin, various parts of the hands and fingers are used to play the tambour. At this level, though the elements are fairly unorganised, pulse is unsteady and variations of tone colour appear to have no structural or expressive significance. The activities of children up to about 3 years have this character of unpredictable sound exploration.

Manipulative
The child is acquiring increasing control of techniques involved in handling instruments and other sound sources. S/he is moving towards control of steady pulse and the interest in timbre and the other surface effects of sound shifts towards the control of particular devices, such as glissandi, scalic and intervallic patterns, trills and tremolos. Compositions tend to be long and rambling and are frequently determined by the actual physical structure of instruments themselves. Increasing control in the manipulative mode is most apparent in the work of children of 4 and 5.

Personal expressiveness
Direct personal expression appears first and most clearly in song. In instrumental pieces it is mostly evident through the exploitation of changes of speed and dynamic level, climaxes being created by getting faster and louder. Signs of elementary phrases (musical gestures) appear. There tends to be little structural control and the impression is frequently of spontaneous and unco-ordinated musical gestures emanating directly from the immediate feeling experience of the child, without a great deal of reflection and shaping.

Vernacular
Here, patterns, both melodic and rhythmic, start to appear, marked by repetitions. Pieces are often shorter than previously. Expressiveness is now contained within established musical conventions and, in particular, the structure of *phrases*, which increasingly tend to fall into two, four or eight-bar units. Metre emerges more often along with syncopation and little sequences of melody and rhythm. Here children seem to have entered the first stage of conventional music-making. What they do is often predictable and they have clearly absorbed into their musical

vocabulary much from their musical experience both inside and outside of school, while singing, playing and listening to others. The *Vernacular* mode begins to appear at about the ages of 5 or 6 but is much more clearly established at 7 or 8.

Speculative

With the *Vernacular* fairly firmly engaged, the deliberate repetition of patterns makes way now for imaginative deviation. Surprises occur but they are not yet fully integrated into the style. Control of pulse and of phrase, which was clearly apparent at the earlier stage, now appears less fixed as children hunt for the 'right' note or attempt to introduce a deviation which doesn't quite work. The evidence here points to much greater experimentation, a willingness to explore the structural possibilities of music and to contrast with and vary an established motif or melody. At times it appears that there is a musical formulation in the mind of the child that is not quite realised. *Speculative* procedures become apparent in the work of 10-year-olds.

Idiomatic

Structural surprises now become more firmly integrated into a particular style. Any contrast is frequently at the end of a phrase or piece when a pattern has been clearly established from which there can be deviation. Answering phrases, variation and ending 'tags' are common. Technical, expressive and structural control begins to be established realiably over longer periods of time. There is a strong tendency to move towards what children regard as a 'grown-up' musical style or idiom. The world of popular music is especially influential here. Previous tendencies to work in a speculative way outside the conventions of metre and melody can be suppressed. Children seek to enter recognisable musical communities. This is most apparent by the ages of 13 or 14.

Symbolic

Growing out of the *Idiomatic* is a strong personal identification with particular pieces of music, even turns of phrase and harmonic progressions. These appear to be developed from the stylistic clusters which, in the previous mode, were felt to be musically and socially important. At the *Symbolic* level there is a growing sense of music's affective power and a tendency to become articulate about this experience. Musical values become more idiosyncratic and commitment to music is frequently based on an intensity of experience that is felt as unique and highly significant. The *Symbolic* mode of experience is distinguished from previous levels by the capacity to reflect upon the experience and to relate it to growing self-awareness and developing value-systems. It seems unlikely that we shall find musical meta-cognitive processes before the age of about 15.

Systematic

At the *Systematic* level we think of the fully fledged musical person, capable of reflecting on his or her musical experience. There is consciousness of the stylistic principles underlying the chosen idiom(s). There is the beginning of aesthetic speculation and the possibility of creating new 'systems'. Musical composition may be based on general principles of consciously organised groups of musical materials (such as the use of the whole-tone scale, serialism, electronically generated music and so on). Musicians and others often feel the need to write and talk about these processes, often in a philosophical way. Even if they do not, we can still find evidence of a strong value commitment to music which involves expanding musical possibilities in a systematic way.

Left to right

It would be inappropriate in a paper of this kind to do more than hint at the significance of the pendulum swings from left to right and back again as the spiral is traversed, though there is clearly much that could be developed here, taking in the work of Piaget, Bruner and others. We would simply draw attention to each shift from left to right as representing a move from the more individual and personal to the schematised and social. There are many fascinating theoretical and empirical roads to be trodden here. For the moment we will merely notice that the stages on the left-hand side of the spiral appear to be egocentric and experimental, while those on the right seem to be dictated by conventions within which the tendency is to be more derivative and less original. Bruner writes that myths, art, ritual and the sciences are all 'expressions of this deep-lying tendency to explicate and condense, to seek steady meaning in capricious experience' (1974, p. 31). It may be this move from capricious experience to steady meaning that is seen in our left-to-right swings.

There is clearly much scope here for further development, for the replication of observations and for the testing of this scheme, as pictured in the spiral. To our knowledge this is the first time that such a model has been systematically developed, and it is hoped that people might use it as a profitable starting point rather than as the final word. We would also wish to draw attention to the approximate age specifications. These are to be by no means taken as rigid, nor is it to be assumed that individuals may not fall outside these general boundaries. Ages have been indicated merely to point to the relationship between our model and the data, to give a feeling of reality to this complex and difficult enterprise. Figure 4 shows the proportions of 745 compositions as they are observed to reach the highest developmental mode.

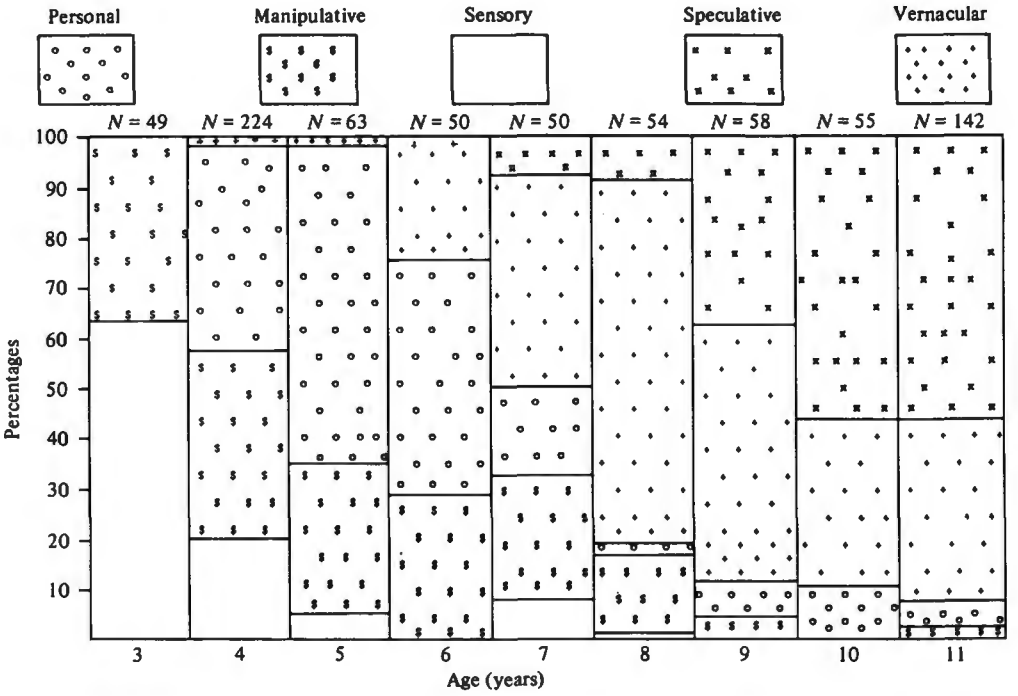


Fig. 4. Musical development spiral – distribution of levels by each age. This analysis is based on 745 compositions from 48 children collected over a period of four years. There is thus a longitudinal dimension to this study. (See Statistical Note 2.)

Implications for music teaching

There seem to be three levels at which we can begin to see the implications for musical transactions in classrooms and studios. The first of these is in terms of *general curriculum planning*, especially in schools. It has seemed to many people that formal music education in Britian is somewhat arbitrary and that expectations of children at different ages are by no means universally shared. The result of this is that is is perfectly possible to find little or no apparent development in musical terms over several years at school. Indeed, it might be said that a lack of sense of achievement may account for the disenchantment towards music in schools that has frequently been observed, especially by the middle years of British secondary schooling.

If our assessment is anywhere near correct, then the overall curriculum implication is that we should focus our musical curriculum activities towards broad aspects of musical development. In the very early years of school, sensory exploration and the encouragement of manipulative control would be crucial. In the primary school this is taken forward and the expressive elements of music, grounded in the personal and exploratory but moving towards vernacular control, would be the centre of our work. This could be related to movement and dance and to

visual and other images which help to promote, stimulate and intensify expressiveness. By the age of 10 or so we would be looking to further the production and recognition of musical speculation, a recognition that all musical form depends on contrasts and repetitions and that surprises are crucial to musical encounters. This, we know, may be transformed through adolescence towards an idiomatic 'hardening of the arteries'. Even so, we should strive to keep the speculative alive whilst making it possible for young people to enter a 'grown-up' world (rather than the classroom world) of music. Much soul-searching will be needed in order to transform present opportunities into something that more nearly matches the development of children and the demands of music, including appropriate instruments and purposeful student groupings.

The second way in which such a model may inform the music curriculum concerns *individual development*. It ought to be possible for a teacher to identify where a child is on the spiral at any given time. Although we teach classes, people develop as individuals. If we are aware of the next likely stage of development, that for example manipulative ability may lead to personal expression or that engagement in the vernacular may lead to the more imaginatively speculative, then we are more likely to ask the right kind of question, to suggest a more relevant possibility, to choose material or suggest an activity that may have more personal meaning and consequence for the individual. The model here has just as much significance for the studio teacher as for the teacher in school classrooms. It might also be that sensitivity to the concepts which we have attempted to articulate here may help us all to understand what is *musical* about music. In other words, we shall be able to see the relationship between musical phenomena, here called *Materials*, *Expression*, *Form* and *Value* along with their psychological correspondences *Mastery*, *Imitation*, *Imaginative Play* and *Meta-cognition*. For example, once we grasp that musical expression is a form of imitation then we can immediately see relationships with movement, drama, poetry and visual images; we can also understand how music can be expressive without necessarily representing anything else, that a musical gesture is an abstraction of a physical gesture. We may use programmatic ideas to get the imitative process going but will always avoid the literal translation of objects or events into music and will look towards the next stage of development – musical speculation.

The third set of implications for the music curriculum has to do with *the role of the teacher*. How, for example, do we propose to start up a certain activity, or to introduce a new musical procedure or idea? Here we must repeat something of importance. The overall development outlined in this paper is reactivated each time we encounter a new musical context. If we take up a new instrument, for example, no matter how experienced we are, we shall first be engaged with the sensory properties of the sound (possibly even the feel and smell of the instrument),

before moving to manipulative engagement and, fairly quickly, into expressive and structural procedures. To take another example, if we come across a style of music that is unfamiliar we are first attracted by its sensory properties, become aware of the manipulative articulation and then begin to penetrate its expressiveness, eventually responding to its structural speculations before feeling at home in the idiom. All of these processes will take place before it could ever become important for us at a symbolic or systematic level.

Let us, for instance, take a fairly simple example of a compositional project. We may have decided to base this activity on the materials of short and long sounds. Let us make sure that the first stage of the *Sensory* is properly entered, no matter what the age or previous experience of the children. There are different kinds of shortness; a very long sound has a very different effect from one that is only moderately long. These perceptions are an important pre-condition for sensitive *Manipulative* control. Now we must learn how to sustain long sounds, what techniques may be involved on different instruments – the use of beaters, for example, to continually activate sound as a tremolo. We may now move to explore the expressiveness involved in combining short and long sounds into patterns that communicate (i.e. imitate). Is each student able to generate a short *Personal* musical gesture from short and long sounds? Is expressiveness communicated? We might then move to consider how these sounds can be caught up into existing musical practices, the *Vernacular*. Shall we choose to organise them within a framework of pulse and metre or within other musical conventions? If the children are above the age of about 9, we shall certainly want to turn them towards the *Speculative*. Can we create a surprise using short and long sounds? Can they make a piece that holds the interest? Can we devise episodes that relate to one another either as contrasts or as repetitions? Are we concerned to broaden the range of what is considered to be *Idiomatic*? This will certainly lead us to encounter the music of others, as performers or in audience.

What is being suggested here is a strategy for curriculum development. We start from a collection of musical materials; then, no matter how tightly or loosely we organise the learning process, we shall be looking for the next question to ask. Asking the next question depends on having an idea as to what possible developments might be 'round the corner'. In our spiral, so to speak, we have many corners. The transition from one mode to the next is often so smooth as to be almost unnoticed, though occasionally it will occur as a leap. An awareness of these possibilities must surely be helpful, and we shall at least avoid the danger of predicating a curriculum upon a narrow view of musical response. We would certainly not wish to limit ourselves to the sensory, to personal expressiveness or to the speculative, but will also notice the importance of manipulative skills, of entering a general musical vernacular and recognising idiomatic

procedures. *Crossing from side to side of the spiral is a developmental necessity.*

All the indications are, then, that there is such a thing as musical development and that it takes place in a certain sequence, the 'softer' meaning of the term development; certain developments are necessary for later growth to occur. Whether or not the stronger sense of the term 'development' holds is still problematic. Our evidence suggests that there may be broad changes that occur in 'almost all children', though whether this is to what Maccoby calls a 'fairly standard timetable' is still undemonstrated, though supported by many writers. With the children we observed there does indeed appear to be a sequence. We suspect that, if children are in an environment where there are musical encounters, then this sequence will be activated. If the environment is particularly rich, then the sequence may be followed more quickly. The opposite may also, unfortunately, be true: in an impoverished musical environment, development is likely to be minimal, arrested.

The intellectual journey which has culminated in the writing of this paper has been difficult, erratic and exciting. We hope that some of the excitement may be caught by others and that this work may be taken further. It is, after all, important for all of us to feel that there is 'something round the corner'.

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Statistical Notes

(1) The Spearman rank correlation coefficient gives the following probabilities on the relationships between the judges and between each judge and the actual age.

Judges 1 and 2: $\rho = 0{\cdot}89$, $P < 0{\cdot}01$
Judge 1 and actual age: $\rho = 0{\cdot}82$, $P < 0{\cdot}02$
Judge 2 and actual age: $\rho = 0{\cdot}71$, $P < 0{\cdot}05$

(2) Table 1 gives the highest levels in the spiral judged to be reached in 745 compositions across the age-range 3–11 years.

Table 1

	Age									
	3	4	5	6	7	8	9	10	11	
Speculative	0	0	0	0	4	5	22	31	68	
Vernacular	0	2	1	12	21	39	29	18	64	
Personal	0	48	40	24	9	1	4	6	6	
Manipulative	18	129	19	14	12	8	3	0	4	
Sensory	31	45	3	0	4	1	0	0	0	
Total	49	224	63	50	50	54	58	55	142	745

$\chi^2 = 1755{\cdot}3$, $P < 0{\cdot}001$.

Note on the musical examples

The accompanying cassette tape gives further examples of children's compositional processes. We should emphasise that they are not exceptional but are typical of what the children involved in this study produced. There is no sense in which they are prepared, public performances. They are part of everyday classroom musical transactions. It is as such that they should be heard.

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Cite this article: Anderson A (2022). The Swanwick/Tillman Spiral of Musical Development: impacts and influences – *Guest Editorial*. *British Journal of Music Education* **39**, 1–43. https://doi.org/10.1017/S0265051721000243