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ARTICLE

Living with the spiral: a duoethnographic perspective

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Abstract
The authors of this article met on a Master of Arts (MA) music education course a month before the Swanwick Tillman *Sequence of Musical Development* was published. The course was a portal to an exciting range of literature, with the Swanwick Tillman spiral providing a long-term source of discussion and reflection as our careers have diverged and converged over the intervening years. This paper takes the form of a duoethnographic conversation in which we summarise and reflect on that ongoing synergistic discussion, showing the influence the spiral has had within our particular situations.

Keywords: Piaget; development; spiral; assimilation; accommodation; convention

Introduction

We all tell stories of our lives. Stories are a way of making sense of our experiences, of selecting what seems important, of giving unity and continuity. At the same time, those narratives constructed from past experiences then frame how we see the world in the present – whether consciously or not. Educational researchers have long drawn on narratives of themselves or others to explore and explain particular issues (Clandinin & Connelly, 2004), and the British Journal of Music Education (BJME) has included examples of music educators' voices from the very first issue (Gebbie, Elliot & Morris, 1984).

The authors of this article, Lis McCullough (LM) and John Finney (JF), met in the autumn of 1986 on the MA music education course at Reading University. Both of us explored aspects of Piaget's work during the psychology component of the course and one of us wrote a dissertation on the Swanwick Tillman spiral (Woodward, 1987).

The course was a portal to an exciting but hitherto unknown range of literature that provided sources of theoretical underpinning to our practice and led on to exploration of many other issues. The Swanwick Tillman article (Swanwick & Tillman, 1986) is one example that has provided a long-term source of discussion and reflection as our careers have diverged and converged over the intervening three and a half decades.

In this paper, we are summarising and ruminating on that long-term, synergistic conversation in a duoethnographic dialogue covering some of the aspects that have intrigued, perplexed or inspired us over the years, showing the influence the Swanwick Tillman spiral (more accurately a helix as there is no broadening out of the curve, although common practice often uses the two terms synonymously) has had within our particular situations.

Duoethnography (see, e.g., Sawyer & Norris, 2013) is a qualitative research approach that builds on narrative enquiry by juxtaposing two researchers' narratives relating to a particular 'phenomenon' or 'artefact' – in this case the Swanwick Tillman spiral – in order concurrently to generate, interpret and disseminate data. We are here utilising duoethnographic techniques – using our own autobiographical experiences as focus for this in-depth conversation, making transparent

how our thinking has progressed and reporting in a playscript format – in order to explore how the spiral has affected our lives and thus how it might be of use to others. Sawyer and Norris use the botanical metaphor of a rhizome to illustrate 'the grounded, interconnected, crisscrossing, and symbiotic nature of the duoethnographic process' (2013: 49). Inevitably inherent within our constructed webs of experience are our (two, different) personal perspectives and epistemological stances. However, acknowledging these means readers can make their own decisions about validity, credibility, importance and relevance through the frames of their own perspectives and epistemological stances. There is thus a multifaceted relationship between the authors, the text, the Swanwick Tillman spiral and the reader. 'The aim is to create a space in which readers can reflect on their own lives as they witness similarities to and differences from the lives of others' (Sawyer & Norris, 2013: 76) and thus form their own syntheses and insights. Our conversation begins with John setting the scene for our first encounter with the spiral.

Meeting the spiral

JF: For the first 15 years of my secondary school music teaching career, I had established a music teacher identity firmly rooted in my subject expressed through a singing-listening curriculum and a smattering of music theory. I had little awareness that music education had a history and no knowledge of teaching methods sensitive to theories of musical learning and musical development. A change of school in 1980 along with little more than a chance attendance at a Reading University day course disseminating the Schools Council Secondary Music Project (see Paynter, 1982) changed the direction of my classroom practice. I had begun a quest to understand more of music education. My first move was to begin a programme of self-directed reading before the MA in music education beckoned in 1984 with the exciting prospect of attending a university, an experience I had never before dreamed of. As a part-time student, there would be 3 years of study, the first: 'Studies in Musical Development'. By term two, I was leading a seminar on Piaget's theory of genetic epistemology.

LM: You were in your third part-time year ('Curriculum Studies') when I joined in 1986 to follow the course full-time. I can still remember the excitement: new people, the university environment, the *reading*. The academic music education literature was completely unknown, even though my primary Certificate in Education (Cert. Ed.) course meant that I recognised some of the names in the *general* education literature, because educational psychology, philosophy and sociology had featured prominently. Thus, Piagetian terms such as 'conservation', 'sensory-motor', 'assimilation' and 'accommodation' were familiar, even if I could not remember exactly what they meant. So I offered to be one of the leaders for the equivalent seminar 2 years after you.

JF: Preparing for that seminar provided for a first understanding of the nature of human development and, in the case of Piagetian theory, how learning took place through the assimilation and accommodation of new experiences, a self-regulating system of equilibration. I began to wonder about the pupils in my Basingstoke secondary school. Why were there such vast differentials in pupil attainment? To what extent had their schooling accommodated to their stage of development? Why were many perceptually rich yet conceptually poor? My questions were many and unrefined.

Piaget's theory of intellectual growth (e.g., Piaget, 1953) was grounded on the assumption that infants were born with limited mental structures which then adapted to the world on the basis of experience. Human being was a biological organism adapting to the environment through acting on it. This was the thesis and I began my term two essay assignment boldly and not without a little pomposity:

> For much of the twentieth century, music education has concentrated its efforts on the acquisition of skills conforming to a behaviourist view of predicting and controlling behaviour. Emphasis has been placed on transmitting instrumental, vocal and literacy skills where

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> the careful sequencing and structuring of behaviours had dominated. However, Piaget's 'beakers' have increasingly focussed attention on the development of thought structures in children, on how children think.
>
> (Finney, 1985: 1)

How a child thought was of far greater significance than *what* a child thought. Human development involved qualitative changes in the structures of thought. It was a revelation that a 1-year-old possessed an intelligence, a sensory-motor intelligence, and that this would see the birth of symbolic thought before a stage of decentring perception, to be superseded by a stage where symbolic thought would no longer have recourse to concrete operations: formal operations. Piaget's purpose was to explain the unfolding of the logical mind where cognitive structures mirrored mathematical structures. Was this conducive to a subject like music where cognition might have a feeling component to it? Was there sufficient scope for individual differences and variation in children's thinking to be recognised? If a child reached the stage of formal operations at the age of 12 years, was there no further scope for structural change in development? Wasn't adolescence characterised by significant change? Could younger children not be thought of as simply lacking sufficient experience to demonstrate more variegated ways of thinking than supposed? These were some of the questions that had been aroused.

The following year dealt a severe disequilibrating blow as the 'Sociology of Music Education' component turned away from Piagetian fixation on the child as lone actor to the child as cultural being in society. Yet to come was the source of a possible rapprochement: June Tillman's presentation at a conference on 25 October 1986 for the Society for Research in Psychology of Music and Music Education (Tillman, 1986).

LM: That presentation, based on the article to be published the following month (Swanwick & Tillman, 1986), came early in my first term. Although initially a generalist primary class teacher, by 1986 I had been employed for several years by a county music service as a Primary Music Specialist, providing long-term school-based in-service training and support, working with teachers and their classes across the primary age range (5–11 years), and June's descriptions of the practical side of the research sounded excitingly familiar. So I immediately decided my end-of-course dissertation should involve a partial replication of the Swanwick Tillman study.

The spiral in practice

Replication

LM: The compositions on which the Swanwick Tillman model was based had come from one school, and, moreover, a school in which June Tillman taught. So I wondered whether this sequence might in some way have mirrored her teaching, and whether other children from different schools with other experiences might reveal alternative sequences, or even no sequences, within their compositions. Yet Swanwick and Tillman claimed 'it ought to be possible for a teacher to identify where a child is on the spiral at any given time' (1986: 336).

In order to investigate this, teachers from six schools each chose 'a good mix' of six 8–9-year-olds, where variation was to do with character and general approach as much as any perceived musical ability, experience or interest. Those 36 children produced compositions based on 8 of the main tasks specified for the Swanwick and Tillman pilot study (ibid.: 311-313), each done twice. An edited recording comprised a single version of each task from 20 children. I and six other teacher assessors (including June Tillman) of varying musical and teaching experience attempted to place each composition on the spiral. None of the six other assessors knew anything about individual children.

All seven assessors completed the task, but not all found it easy and for no single task or child's final 'average position' on the spiral did we all agree. Sometimes, it seemed easier to suggest the

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side of the spiral rather than a level. Sometimes, children seemed to progress up the spiral as they proceeded through tasks (not surprising, as they gained confidence and experience) and the compositions covered the range of modes from Sensory to Speculative.

Questions arose regarding the responses of individual children: how to explain differences in the 'quality' (in both senses) of response, and sometimes of the whole approach, even if children seemed to be in the same mode? Were these connected with their personality (in a broad sense) and/or their confidence? How to allow for previous experience and skill with instruments, musical concepts and the activity of 'composition'?

There were queries about some of the original Swanwick Tillman examples that were being used as benchmarks, in particular as children's perceived behaviours could be interpreted in different ways, and it was suggested that the whole assessment task might have been easier if the adults had known the children; that the difference between intent and serendipity might have been clearer if the assessors had *seen* the children. It was noted that adult and child artists may produce end products that seem similar but are produced drawing on different resources (Winner, 1982: 152, 175).

Similar issues relating to musical development in general and the spiral in particular informed my subsequent return to the school milieu.

In school 1

JF: My greatest challenge in the classroom was teaching classes labelled as in need of remedial help: 'the bottom stream', small in number and mostly boys. These pupils had a weak grasp of language, found mathematical calculation difficult, with social relationships that were frequently fraught. For these pupils, formal operations seemed a distant place. It was clear that they made sense through sensory-motor tactile action – playing instruments, making up music and becoming masterful in the use of repetition. The discovery of Piagetian theory had left me pondering the implications of the twin processes of assimilation and accommodation. What I now speculated was that these pupils had been exposed to entirely inappropriate educational experiences throughout their schooling, and this had served only to disable them. Had their intellectual states of being been acknowledged as part of their schooling? Had they been expected to assimilate too many new experiences without enough space and time for these to be accommodated? Perhaps it was this concern about the validity of formal education and music's place within it that led to the topic of *my* dissertation – *An investigation into the learning process of a group of rock musicians* (Finney, 1987). You quote Swanwick and Tillman's claim that 'it ought to be possible for a teacher to identify where a child is on the spiral at any given time' (1986: 336). I realise that I can do this for that group, albeit retrospectively. The four boys were 15 years old and making after-school use of the school's drama studio as a rehearsal space. Theirs was a total commitment to a thrash punk style of the time, a 'grown-up musical style or idiom … children seek to enter musical communities. … Technical, expressive and structural control begins to be established reliably over longer periods of time' (ibid.: 333). As they progressed, central to their efforts was an ethos seeking authenticity in both their expressive behaviour and fidelity to their stylistic identity. This takes the group into the Symbolic mode, a development from the Idiomatic. Elsewhere I had written

> They enjoyed exercising what they called 'mental skills'. These ensured going beyond an unaccountable dream world as well as developing a critical approach to their culture. They 'faced' the music in public performance. Learning 'to be musical' was 'learning to be human' and central to this was a drive for group and personal integrity and authentic self-expression.
>
> (Finney, 1999: 241)

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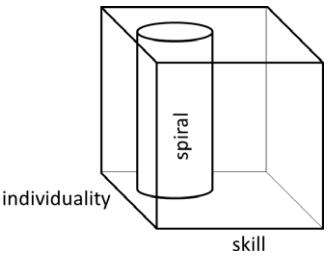

Figure 1. Extended model.

Bringing the group under the authority of the spiral feels something of a betrayal of who the group were, their commitment and the unique character of their programme. Viewing their achievements through the Swanwick Tillman lens would seem reductive.

Re-viewing the spiral 1: extra dimensions

LM: Your unease may link with my questions above, in that you are referring to aspects that do not necessarily show up on the spiral.

In order to demonstrate considerations about individual traits and experience that had caused problems when selecting modes, my dissertation included an extended model (Woodward, 1987: 98), updated as Figure 1, in which a cylinder (vertical axis) representing the spiral could move around and rotate within an enveloping cube adding two horizontal axes: one representing the child's 'individuality' (personality, imagination, preferred method of thinking and, possibly, creativity), and the other indicating the child's level of skill (motor coordination together with experience manipulating concepts and instruments).

However, this is a *visual analogy* and it should be noted that, in reality, all axes are open-ended and that both horizontal axes are symbolic in that, with no way of measuring each concept in a single plane, they are a means of showing how repositioning the spiral can create different relationships.

Yet even without those extra dimensions, it had been possible to place my children's compositions somewhere on the spiral and it is interesting that you were able to do the same with a group composition, especially with the problems that can arise when assessing individuals' contributions to group compositions. Could you do similar for individual pupils in your secondary school, given that the original Swanwick Tillman research involved primary pupils?

In school 2

JF: At the same time as coming to understand unschooled musical learning, I needed to address the teaching of the newly established General Certificate of Secondary Education (GCSE) examination to be examined for the first time in 1988. A radical new feature of the exam's specification was composition. I welcomed this. The outcomes were for the most part highly personalised and stylistically differentiated work. Here, two pieces illustrate the spiral as a resource for demonstrating pupils' musical thinking and state of musical development.

Just as the thrash punk group demonstrated strong aspects of more than one mode, the Idiomatic and the Symbolic, so Stuart revealed aspects of both the Symbolic and Systematic (Swanwick & Tillman, 1986: 333–334), with the irony of the title matched by the irony in the music.

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Stuart composed a work titled *Forty Years of Peace*. He worked on his Korg synthesiser to create a piece of immense calm, an atmosphere achieved in part by the relentless slow ticking of time, sometimes near foreground, at other times background. There were subtle surges of sampled rocket launchings counterpointing slow moving sequences of chords giving birth to melodic lines adding to a sense of space, of void and lack into which the slow ticking of time finally faded.

In contrast to Stuart's self-directed composing, another pupil worked from a template that enabled her to move from Vernacular to Speculative. (I think of Vygotsky's (1962) Zone of Proximal Development.)

Samantha, using a metallophone, was becalmed in the Vernacular mode. Repeated rhythmic and melodic patterns were characteristic of her making, with frequent recourse to imitating familiar melodies, albeit in unstructured forms. She was given a template designed to create four beat, four bar melodies using phrase repetition and extension. Samantha enjoyed playing with this and by the end of the course rhythms had become syncopated, there were surprises – intimations of entry to the Speculative and Idiomatic modes.

The spiral in theory

LM: Between us we have shown that it is possible to place the compositions of both primary and secondary children on the spiral. It is also possible to see small-scale examples of progression – both with Samantha and within the task sequence for some of the children in my study. In other words, the modes seem to work. However, when I came to consider the theoretical background, even though there was support in the existing research literature for using various Piagetian theories in music education (e.g., Serafine, 1980; Pflederer Zimmerman, 1984; Hargreaves, 1986), some aspects of Swanwick and Tillman's application surprised me.

Piagetian play

JF: At the time, we both read Swanwick's earlier paper (1983) setting out his thinking in relation to the arts that became the theoretical basis underpinning various aspects of the spiral article. He considered that aspects of Piaget's theory of mind relating to play (Piaget, 1951) were particularly relevant to the arts and, in both publications, Mastery, Imitation and Imaginative Play were depicted as a triangle demonstrating different kinds of play (Swanwick, 1983: 16; Swanwick & Tillman, 1986: 309).

For Piaget, as indicated above, cognitive development was achieved by ongoing and repeated cycles through assimilation (trying to fit a new experience to what is already known) and accommodation (changing existing thought structures to allow for the new stimulus) before reaching equilibrium (where one has absorbed and adapted to the new material so that it makes sense). The cycle then has to be repeated when something new causes disequilibrium. As imitation is connected with accommodation (where one might copy something to learn about it) and play with assimilation (where one uses something one has learned about for 'functional pleasure'), Swanwick (1983) suggested that a similar balance between imaginative play and imitation in the arts could lead to similar recurring cognitive equilibria – that is, development of mind.

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As Piaget wrote

> If every act of intelligence is an equilibrium between assimilation and accommodation, while imitation is a continuation of accommodation for its own sake, it may be said conversely that play is essentially assimilation, or the primacy of assimilation over accommodation.
> (1951: 87)

LM: But surely, then, one cannot separate Piaget's play concepts from the rest of his process of adaptation, because imitation 'is always a *continuation* of understanding' (1951: 73, my italics) and 'the *continuation* of the accommodation of the schemas of intelligence' (ibid.: 78, my italics)? Similarly, play demonstrates the primacy of assimilation – using the concept because one has mastered and absorbed it – but 'is primarily mere functional or reproductive assimilation' (ibid.: 87) rather than connected with the development of mind as such. Thus, although both imitation and play are connected with cognitive development, it is mostly by *extension*. In other words, attaching Mastery, Imitation and Imaginative play consecutively to the first three 'loops' of the Swanwick Tillman spiral (which in any case cover time spans greater than those Piaget indicated when he described those play aspects' respective emergence) removed them from their Piagetian positions as potentially part of each cycle contributing to 'adapted thought'. Swanwick had actually written in his earlier paper that 'all three elements of play must be activated in arts education, at all ages' (1983: 24).

Levels of play

LM: As far as levels within play itself were concerned, Piaget considered that

> there are three main types of structure which characterise children's games and determine their detailed classification. There are practice games, symbolic games and games with rules, while constructional games constitute the transition of all three to adapted behaviours.
> (1951: 110)

As just described, he held that these different forms of play developed *alongside* intelligence so that 'we see three classes of games as corresponding to three stages, which are also characterised by the three successive forms of intelligence (sensory-motor, representational and reflective)' (ibid.: 113). (Constructional games were not in the same category as make-believe games, but were 'a boundary class between games and non-ludic behaviours' (ibid.: 110), and could be seen at each of the three levels.) So surely, it is these three 'classes' that provide the development in games that should be attached to the levels of the Swanwick Tillman spiral?

(I was later interested to read that Swanwick acknowledged the role of Liane Hentschke 'who insisted that I clarify my position on Piaget' (1994: ix) and I noted he had changed the labelling of the spiral (ibid.: 87), removing the play forms as levels and positioning play and imitation more in line with Piagetian principles.)

Re-viewing the spiral 2: The cycle of adaptation

LM: In the original spiral (Swanwick & Tillman, 1986), Swanwick and Tillman did not seem to utilise the front and back of each loop, whereas if they had kept their three aspects of play (Mastery, Imitation and Imaginative Play) in their original 'flat' form, in other words had kept them as parts of the same 'circuit' of the loop, they could have suggested a 3-D adaptive cycle. When back working with teachers and children again, and still attempting to explain differences in compositions that seemed at the same spiral level, I later tried to do just that.

Figure 2 illustrates the cycle of adaptation described above, viewed as if looking down on a horizontal cross section through the spiral, starting from the child's *perception* (bottom left) of

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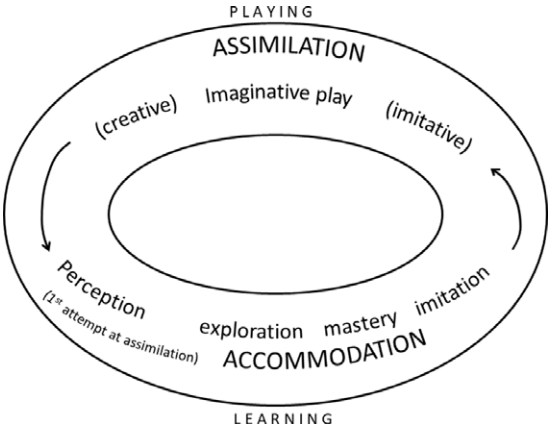

Figure 2. Horizontal cross section showing aspects of the Piagetian process of adaptation.

a new stimulus that causes disequilibrium to the existing thought structure/schema. It should be noted that there is not only one cycle of the adaptive process between each level of the spiral. The assimilation/accommodation/equilibrium/disequilibrium cycle goes on continually, at all sorts of levels of interaction with the everyday world. In similar fashion, of course, a child does not necessarily move smoothly from one spiral level to the next but moves up and down through the layers, depending on current context.

JF: Somewhat confusingly, similar schemas and consequent behaviour of the child can, according to Piaget, demonstrate different points of the cycle:

> [N]o schema is ever, once and for all, adaptive, imitative or ludic, even when its initial function has made it tend in one of these three directions . . . every schema always includes both assimilation and accommodation, since each of these two processes is essentially inseparable from the other. It is only their ratio which determines the adaptive, imitative or ludic character of the schema.
>
> (Piaget, 1951: 103)

Also potentially confusing is the fact that imitation, while primarily the 'continuation' of accommodation, as described above, can also be seen in play, that is, assimilation, since

> while in the normal circular reaction the child tends to repeat or vary the phenomenon, the better to adjust himself to it and master it, in this case the child . . . repeats exactly all the actions . . . for the mere pleasure of using his activity as completely as possible.
>
> (ibid.: 95)

LM: Yet, while confusing in themselves, those issues help explain discrepancies in compositions. For example, imitative-seeming compositions could either be attempts at building up schemas involved in learning the conventions (seen in the lower-front-right side of the spiral/cycle) or, after fully absorbed such conventions, be part of playing around for the joy of using them – 'functional pleasure' (upper-back-right). Similarly, 'Imaginative play' in the back half of the loop (assimilation) might either appear a fairly close reflection of the conventional towards the right or might be more creative towards the left hand, personal, side of the loop. How would one know whether a more idiosyncratic piece was play or, in fact, the disturbance caused by perception of a new 'stimulus'? Possibly only by knowing the context – the child, previous experience and the

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current stimulus – although Piaget suggested that 'real curiosity' might be what distinguished 'play' from 'intelligent experimentation' (ibid.: 116).

Sound progress

After the time at Reading, Lis was involved in primary Continuing Professional Development (CPD) in various ways and John went into Initial Teacher Education (ITE), preparing music graduates to teach music in secondary schools. The next time our professional paths converged was when we were both members of the National Association of Music Educators (NAME, later amalgamated with the Federation of Music Services to form Music Mark). The most obvious manifestation of our continued interest in musical development was the publication of the 2009 annual NAME book *Sound Progress: Exploring musical development* (Coll & Lamont, 2009) when Lis, as Chair of the organisation that year, chose the theme and John contributed two contrasting yet complementary chapters.

JF: While I had by this time brought the theories of Bruner and Vygotsky into my scheme of thinking, Piaget remained part of my habitus. The *Sound Progress* publication offered an opportunity to introduce the readership to Piaget. Despite a steady range of critics, in my view the theory had a robustness that was worth keeping alive. I decided to make the theory accessible through the form of an invented dialogue with Piaget.

After a teasing imaginary claim that Piaget had as a child attended the eurythmic classes of Émile-Jaques Dalcroze in Geneva, I concluded

> Amongst the many powerful insights provided by Piaget, in conclusion I will privilege just one. This was his conviction that it was even the earliest sensory-motor action of the child that constituted intellectual behaviour. Yes, sucking, looking, grasping were acts of intellect. These were mindful actions. They were both acts of perception and cognition. The body was a thinking-feeling organ. However, we note that in our system of education the body is accorded low priority. Practical knowledge struggles to be recognised alongside the sovereignty of abstract thinking. In music education the term 'practical' is too often used to imply something un-intellectual and something that must be brought into the real world of knowing and knowledge through the mediation of language.
>
> (Finney, 2009a: 33)

This minor peroration I see now as an echo of the major peroration concluding my MA dissertation (Finney, 1987) claiming the wisdom of the body to be central to a humanising music education.

LM: However, your second piece for *Sound Progress* (Finney, 2009b) was in many respects opposed to the Piagetian conception of development, while describing an approach that could enrich what the spiral might tell about children's musical thinking.

JF: In place of theories of child development, the Canadian educator Kieran Egan proposes a theory of 'educational development' and this he distinguishes from a theory of development 'applied' to education (Egan, 1992; 2001). A theory of educational development must be of direct interest to the teacher and in this case it should inspire imaginative teaching. Egan draws from evolutionary and cultural history, cognitive psychology and anthropology in proposing five stages of development:

1. The 'somatic' stage (involving mastery of physical activities and a non-verbal appreciation of the world);
2. The 'mythic' stage (during which pupils respond best to stories);

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3. The 'romantic' stage (during which pupils are keen to gather facts about distant matters yet which relate close to home);
4. The 'philosophic' stage (during which stage children become interested in developing generalisations and principles);
5. The 'ironic' stage (the sign of the 'mature' mind, during which the focus shifts to the exploration of those instances which do not obey the normal rules).

Egan sets out to give significance to the content of education, clothing it with human interest. However, this is not a matter of following children's surface and superficial interests but rather discerning more profound trends underlying such interests. In this way children can be educated, taken somewhere unknown that at the same time will resonate with matters 'close to home', matters that have personal significance. I will give an example of how we might see a synergy between the Expression/Form layers of the Swanwick Tillman spiral and Egan's Romantic phase.

The imagination of a class of 11–12-year-olds is at work as their interest is awakened in the fantastical, the awesomeness of what is on one hand so distant from their reality yet so close. Following Berlioz's *Dream of Witches' Sabbath*, their teacher presents them with a narrative:

> In a dark night ... the wind blows and rustles the long grass against my legs. I hear what sounds like a laugh, stop still ... I look around, but everything is pitch black, except for a distant glow, like a fire. Suddenly, the fire glows green, and the witches begin to dance around it, slowly at first, the faster and faster, twirling and waving their arms like dancers in a ballroom. They spin faster and faster, dancing furiously until, suddenly, the fire glows a bright red, and they stop, standing completely still ... I hear a bell tolling, like a funeral bell ...

The group's composing is supported by the mastery and reworking of motifs from Mussorgsky's *Night on a Bare Mountain*. Their music takes on a glittering vividness as they begin to care about each musical gesture made.

Egan is concerned that teaching is imaginative and that pupil's imaginations are aroused and brought to bear on work in hand. This example would seem to show such a process in train and with the musical thinking of the class meeting at least the criteria relating to the second layer of the musical spiral.

Simplifying the spiral: Towards convention and beyond

Models are only models

LM: Your description of Egan's theory of educational development demonstrates another way of seeking patterns in the world around us to make sense of our lives. We categorise in order to predict. And then we describe and illustrate those patterns. However, all such patterns, categories and illustrations reflect their creators' beliefs and ways of representing. Spirals are a recognised way of illustrating development, with Piaget himself referring to a 'spiral of knowing' (see McCarthy Gallagher & Reid, 1981/2002: 35–37). The Swanwick Tillman spiral is a normative and diagrammatic way of describing children's musical development seen in their compositions.

Yet, as Mills warned, 'We have to be careful not to generalise too far ... A model that works well in one restricted situation, and seems to make sense in another, is not necessarily true of all musical activity' (2009: 103). Even though Swanwick later reported on applications of the spiral to other areas of musical engagement, for example, 'audience-listening' and performing (e.g., Swanwick, 2012: 75), the original Swanwick Tillman spiral was designed to map out the sequence

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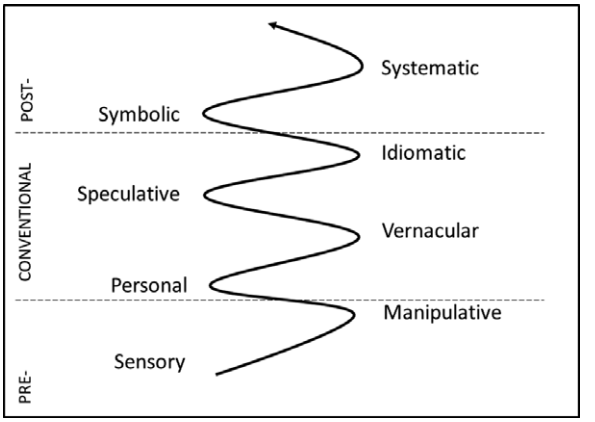

Figure 3. Zigzag.

of musical development as shown in children's compositions and it is not surprising that issues relating to aspects not intended to be included within the original spiral arose in my study above. Similarly, if one is using Piagetian theories of the development of mind, it is unsurprising that individual differences are *not* taken into account, given that Piaget admitted that, '"Generally speaking … I'm not really interested in individuals, in the individual. I'm interested in what is general in the development of intelligence and knowledge"' (Bringuier, 1980: 86).

Mills wisely concluded that, 'Being the best model around is not enough. If we don spiral-shaped blinkers, we may miss something even better' (2009: 103).

JF: So what *might* be better? Can there be any one 'better' model when all models represent differing facets of musical development viewed from different perspectives, together with diverse ways of evaluating them (see, e.g., Hargreaves & Lamont, 2017)?

Re-viewing the spiral 3: The zigzag

LM: 'Better' for me meant 'usable'. I discovered the description of the spiral was beyond the experience and comprehension of many primary generalist teachers, reflecting the least musically experienced of the judges in the original pilot study who had found assessing the compositions 'almost impossible and said so' (Swanwick & Tillman, 1986: 315).

So, having earlier elaborated the spiral for my own use, I now needed to simplify it.

Many accounts of development have long identified an (unsurprising) overarching move from a pre-conventional phase to a conventional and then a post-conventional one (see McCullough, 2011: 23–27). By 1986, this had been reported not only in musical development (e.g., Bunting, 1977; Ross, 1984; Sloboda, 1985) but also in other arts and beyond (e.g., Kohlberg, 1976; Parsons et al., 1978; Gardner 1983/1985). In fact, that arc mirrors the *essence* of the route through the Swanwick Tillman modes. Since, as noted above, Swanwick and Tillman did not explicitly use the front and back of the (3-D) spiral loops, the spiral can be redrawn as a 2-D zigzag (Figure 3) showing repeated moves 'from the more individual and personal to the schematised and social' (Swanwick & Tillman, 1986: 334), in other words, towards the 'the common language of music' (Bunting, 1977) of whatever contexts.

Even though there cannot be any single model that fits everyone all of the time, this pared down route provided a basic framework for teachers, drawing on further details or other theories as and if required.

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Final thoughts . . . for now

LM: Looking back over our conversation it occurs to me that I have been a typical primary school teacher and approached both Piaget and the spiral as practical tools to aid my and others' classroom practice, using visual aids to help explore and explain. However, more broadly, the researching and writing of that MA dissertation generated an ongoing enthusiasm for research, especially school-based studies, while the contested nature of Piaget's work continues to be thought-provoking.

JF: My MA dissertation was of a different kind from yours and, as with you, it launched my enthusiasm for research, taking me into ethnography, philosophy and historical study. But Piaget and the spiral lived on in my thoughts. The model came with me into the many secondary music classrooms visited over a 35-year period becoming something akin to an old friend, a faithful companion readily enabling a reasonable grasp of what I observed and serving to initiate a conversation. The conversation continues.

Swanwick and Tillman ended their article by referring to the excitement of their 'intellectual journey' and by hoping 'that some of the excitement may be caught by others' (1986: 338). This article shows how two of their original readers were indeed caught by that excitement, and are now, all these years later in *their* intellectual journeys, hoping to share both their own enthusiasm for the spiral and an enduring fascination with how children think and learn.

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