

Oxford Handbook of Musical Identities¹

Chapter 30

Singer identities and educational environments

Graham F Welch

UCL Institute of Education, London

g.welch@ioe.ac.uk

Abstract

The human voice is a core component of our identity, both in singing as well as in speech. This is because our vocal utterances intimately reflect our inner physical and psychological health. In singing, our vocal products are closely related to our current phase of musical identity, as well as to the coordination of the voice mechanism. Relative singing mastery and development are nurtured or hindered by experiences in socio-cultural settings, which range from the initial playful explorations of cot-based infancy to making sense and attempting to recreate elements of the glocal (global/local) sung repertoire, as experienced in the home and outside, either virtually (as mediated by media) or directly through contact with another human. Singing skills usually develop over time, relative to the nature and quality of cumulative experience. This includes how others perceive our singing—which, in turn, relates to *their* own experience of singing, expectations and singer identity. It is normal for singing competency, in relation to the

¹ To be published in R. MacDonald, D. Miell, & D. Hargreaves (in press). *Oxford Handbook of Musical Identities*. New York: Oxford University Press.

expectations of the local culture, to develop across childhood into adolescence and adulthood. However, where singing skills are not appropriately nurtured and developed, the outcome can be a lifelong mislabelling of negative musical self-efficacy and self-worth. Critical periods for whether or not singer identity emerges as positive or negative have been noted in childhood and adolescence. The chapter explores singer identity by drawing on empirical data from a wide range of studies of children's, adolescents' and adults' singing development in the UK and elsewhere. The chapter also suggests how appropriate educational interventions can address negative singer identity.

Key words: singer, identity, development, positive, negative

Introduction: Singer identity as an adult

Over a decade ago, a music journalist visited me in central London. She worked for a leading English national broadsheet newspaper and had been in contact to follow up a public lecture that I had given on 'The Misunderstanding of Music' (Welch, 2001). The central thesis of my lecture was that humankind is essentially musical, in that musical behaviour is part of our basic neuropsychobiological design – a stance subsequently supported by a wide range of research literature, including from the neurosciences of music (*cf* Patel, 2010; Schlaug, 2015; Snowdon et al, 2015). During the interview, the journalist mentioned that she could not sing. This surprised me as she had mentioned in passing that she was a pianist. So, I invited her to an adjacent lecture room to demonstrate her pianistic skills and also to explore her singing ability. It was evident from her ability vocally to copy simple pitch patterns that I played on the piano that she could sing, and sing 'in tune'. It transpired that what she had meant by her negative statement of her singer identity was not that she could not sing, but that she did not like the quality of her singing voice. Her singer identity was negative (despite her competent piano playing) because she had an internal image of what a singer should sound like and her actual perceived singing behaviour could not match this self-generated ideal.

Similar mismatches between a perceived ideal and reality were reported by Knight (2010) in her doctoral research into adult 'non-singers' in Newfoundland. Amongst her participants were case studies of nine long-standing self-identified non-singers, most of whom had not sung since childhood because of a traumatic early experience of singing, usually in school or a local community setting. Yet, when these

same adults' singing ability was assessed empirically by Knight, all nine were much more competent than they believed. Detailed analyses of the participants' biographies revealed a persistent belief either that they did not have the ability to sing: "Non-singers are born that way – you come either able to sing or not. You can't change it." This seemed to be a self-belief that arose in childhood because of a particular negative experience, or was self-inferred by comparing their singing to that of others, or because they believed that they could not sing well enough for others to hear them. In each instance, a key component of their negative adult image was a sense of embarrassment about their singing and a feeling of general musical inadequacy. Such emotions are perhaps unsurprising given that a related survey of 197 Newfoundland adults revealed that singing is a particularly valued feature of cultural life in the family home (e.g., the 'kitchen party'), at school and in the wider Newfoundland community (Knight, *op.cit.*). Being a 'singer' was commonly understood as being able to 'hold a tune' and be able to sing successfully in public. Written comments from the survey participants provided self-reports about their singing experiences and these typically fell into two main singer identity groupings:

'Singers': 'Singing Danny Boy for a group of my peers when I was 14 years old. Most of them had tears and commented that I had a beautiful voice for a beautiful song'; 'In music in primary school sitting in a circle singing. I was next to my teacher and she leaned over and told me I was a good singer.' (Knight, *op.cit.*, p232)

'Non-singers': 'In Kindergarten, I was asked to sit and listen to the rest of the class. I continued to do so for 7 years'; 'I was in grade one and Sister walked across each row and listened to us in a group. When she finished, she told several of us to pantomime [mime] during singing class. I ran home so excited to be one of the chosen few, until my mother told me what it meant. I was crushed! That was the first time I found out I couldn't sing.' (Knight, *op.cit.*, p239)

A recent Scottish study of adult 'non-musicians' (Caldwell, 2014) echoed the personal narratives of the 'non-singers' in Newfoundland (Knight, 2010). Caldwell reported the importance of musical memories in adulthood in relation to the shaping of their musical identity that changed over time in the light of experience. With hindsight, participants realised that their early musical experiences in social family events often had powerful impacts on subsequent musical identity into adolescence and adulthood.

“...my first recollection about music starts when I’m a wee boy [Yep] in the hoose [house], at parties [Mhmm] at aw-the-githirs [Scots for social gathering/party]...in ma [my] parents’ hoose there wiz [was] nae [no] guitars or nae instruments, so people would jist [just] sing songs. [Mhmm] But that was the first, sort of, introduction to me, to music.” [Caldwell, 2014, pp143-144]

Qualitative data analyses revealed that parental expectations were significant in generating a personal value towards music that could be lifelong, but not necessarily in creating a sense of musicianship, of being a ‘musician’, even though it was possible to perceive oneself as ‘musical’. Some of the adult participants in this study played instruments, but still considered themselves to be ‘non-musicians’, e.g., ‘I’m musical, but not a musician’ (Caldwell, *op.cit.*, p.127).

However, it was possible for negative self-identity concerning singing to be altered through successful individual experience as an adult. For example, when self-identified adult ‘non-singers’ were enrolled by Knight to participate regularly in a programme of specially designed singing classes, singing perceptions were altered:

‘Thursday nights have to be the high point of the week. I love singing class. Never thought I’d say that. In fact, if anyone had told me last spring, I’d say that I’d seriously consider having them committed.’

‘Singing in public when you’ve always thought you couldn’t must be more like undressing after you’ve had some mutilating surgery, like a mastectomy or an amputation. You know you won’t measure up, you’ll be a disappointment to yourself and your audience, and, worst of all, you fear you’ll be the object of malicious humour. The miracle of singing classes is the discovery that I am not disfigured, that my voice can be a source of pleasure, and amazingly, the limb can re-grow.’
(Knight, *op.cit.*, pp250-251)

Self-identity as a non- or incompetent singer appears to be culturally commonplace and longstanding, judging by references in literature, and as evidenced by two of my favourite quotes:

I can’t sing. As a singist I am not a success. I am saddest when I sing. So are those who hear me. They are sadder even than I am.

Artemus Ward’s Lecture. Oxford Dictionary of Quotations (1953: 560; original 1865)

And an ill singer, my lord... An [sic] he had been a dog that should have howled thus, they would have hanged him...

Much Ado About Nothing. Shakespeare, W. Act II, Scene III: comment by Benedick on hearing Balthazar sing 'Sigh no more, ladies' (believed to have been written around 1598)

However, despite such anecdotes, the empirical reality is somewhat more nuanced—as evidenced in my own research with children (e.g., Welch et al, 2012; Welch et al, 2014), as well as in Knight's (2010) research with adults and also by Wise (2015), who has undertaken sustained research into the aetiology of the term 'tone deaf', particularly in adulthood. This particular label of apparent singing inability (disability) over the past century or more is an indication of the label user's conception of the singing 'problem', but does not necessarily provide clarity as to its meaning. Other labels have surfaced over time, such as 'note deafness', 'tune deafness', being 'tone dumb', a 'monotone', 'drone', 'growler', 'grunter', 'poor pitch singer', 'uncertain singer' and (for the Japanese) '*onchi*' or 'tone idiot' – a label reportedly evidenced in public performance by some less-than-skilled karaoke singers (*cf* Welch, 1979; Welch & Murao, 1994; see Wise, in press for an overview). My own label preference for those less skilled than others, based on several decades of researching children's singing, is 'developing singer', not least because, for those of us involved in music education research, policy and practice, this label is more optimistic in its implication that singing ability is open to improvement in appropriate circumstances. Nevertheless, an agreed and robust definition of what counts as competent versus incompetent singing (and what might be observed between such polar opposites) remains somewhat elusive, which may be why singer identity is prone to a bipartite, can/cannot, categorisation.

The general public's bipartite view of singing is unlikely to have been helped by the outcomes of empirical studies that vary in their reports of the incidence of self-defined 'tone-deafness' in its conventional interpretation as an inability to sing known melodies 'in-tune' (whilst we should recognise that even professional singers are not 'in-tune' in an absolute sense: Larrouy-Maestri, et al, 2014). Cuddy et al (2005) reported that approximately 17% of n=2000 first year undergraduates defined themselves as 'tone deaf', whereas a contemporary study of 'poor pitch singing' in an undergraduate population found that the majority (59%) of n=1,105 questionnaire respondents answered that they could not imitate melodies by singing (Pfordresher & Brown, 2007). However, subsequent laboratory-based singing behaviour experiments with a sample of the same participants found much smaller proportions of 'poor pitch singing' of between 10-16% (Pfordresher & Brown, op.cit.). Just to add to the challenges of terminology and its assignment in pinning down the nature of singing competence, 43%

of 197 adults identified themselves as 'poor' or 'non-singers' in Knight's (2010) Newfoundland questionnaire survey.

Furthermore, where individual assessment has been undertaken by researchers that allow a comparison between self-report and actual singing ability (such as by Cuddy et al, 2005; Knight, 2010; Pfordresher & Brown, 2007), there is a demonstrable and generally consistent trend for participants to underrate their singing competence. Why some adults should adopt a negative singing identity, despite actually being able to sing approximately in-tune when tested is not clear. Cumulative, published research evidence over many decades suggests that less than 5% of children aged 11 years are unable to sing a simple song recognisably 'in-tune' (Welch et al, 1997; Welch, 2009). Similarly, reports of singing accuracy (the difference between the sung product and a target pitch or interval) suggest that around 85-90% of the general public can sing 'in tune', although they may not be always consistent in their singing behaviours (Dalla Bella & Berkowska, 2009; Dalla Bella et al, 2007 – see Dalla Bella, 2015 for a review).

Consequently, it may be that adults' self-labelling of a singing deficit is on the basis of (i) comparisons generated by a greater listening exposure over time through electronic media to those that they regard as highly skilled (and whose vocal products may have been tidied up by the recording industry prior to public distribution), allied to (ii) a lack of opportunity by such adults to continue to practise and develop their individual singing skills to the same degree as had happened previously in childhood. For example, in a landmark Canadian study (Dalla Bella et al, 2007), a member of the research team approached people in a public park, pretending that it was his birthday, said that he had made a bet with friends that he could get 100 individuals each to sing the refrain of *Gens du pays* for him on this special occasion. When the results of the public participants' renditions were analysed and compared to the same musical material sung by four professional singers, the data revealed that these 'occasional singers' (a label created by the research team) were less accurate in producing pitch intervals (having an average deviation from the correct intervals of 0.6 semitones) compared to the professional singers (an average deviation of 0.3 semitones). However, the occasional singers typically sang faster than the professionals, a phenomenon linked to lower pitch accuracy. 'Reducing performance tempo had a positive effect on the performance (i.e., increase pitch accuracy) in most of the cases' (Dalla Bella, 2015).

Perceiving oneself as 'tone deaf' is often associated (unsurprisingly) with an inhibition towards singing, at least in public because of the perceived likelihood of an adverse social judgement being made about singing competency, and often allied to the adoption of coping strategies to avoid public situations where singing is expected (Knight, 2010). Relatedly, Wise & Sloboda (2008) found that the negative identity of self-labelled 'tone deaf' singers was supported somewhat by empirical measures of their

actual singing competence, i.e., ‘, they are not imagining their difficulties’ (Wise, 2015). Nevertheless, the basis for such a belief is also strongly socially constructed, in that what counts as singing is a socio-cultural phenomenon, and it is singing in public that such self-identified individuals seek to avoid. They may sing to themselves in the privacy of their car or bathroom, whilst also desiring to ensure that they avoid any instance in which their perceived singing inability is made public.

In addition to (i) the challenges evident in the singer identity discourse—the labels that are in vogue to denote an apparent lack of singing ability, allied to the public conventions of what such labels might imply—and (ii) the differences between a self-perception of singing disability in contrast to a general lack of validation, at least to the same degree by empirical study, there are also issues surrounding (iii) the contexts in which singer identity is shaped. For example, in terms of making sense of people’s general propensity for self-attributions as part of their daily discourse, Bruner (1990:14-15) succinctly described its socio-cultural nature as follows:

‘It is in terms of folk-psychological categories that we experience ourselves and others. It is through folk psychology that people anticipate and judge one another, draw conclusions about the worthwhileness of their lives and so on.’

Kagan (2001: 188) offers a similar observation on human behaviour:

‘One of the unique products of human evolution is the automatic habit of imposing symbolic meaning on experience, especially the tendency to evaluate events and self with a good or bad gloss.’

Consequently, in terms of a particular attribution in singer identity such as ‘tone deaf’, this emerges within a social context, as does musical identity in general, whether this is identity in music (IIM)—defined by the individual’s social and cultural roles in music, or music in identity (MII)—how music is used for developing other aspects of personal identity (Hargreaves et al, 2002). One example of the latter is how some older children are reported to associate a national identity related to royalty, sport, and the military when they hear the National Anthem (Winstone & Witherspoon, 2015). It is not surprising, therefore, that adults commonly report on the formative experiences of childhood as essential features of their singer identity development (Knight, 2010; Ruismäki & Tereska, 2006; Welch, 2000; Whidden, 2009), and provide examples of being recipients of the power of social commentary in the family home (from parents and other relatives, such as siblings), in school (where the knowledge status of teachers adds

weight to their positive or negative comments), and wider community where singing is evidenced (such as in the church or community play areas).

Potential changes in singer identity with countervailing experience

Perceived negative singer identity can be open to transformation into something more positive, as seen earlier in the quotations from the Newfoundland adults who had the opportunity to develop their singing in a group (choral) setting despite their apparent disability. In another example, Numminen et al (2015) report the results of an eighteen-month singing intervention with ten adults in Finland who had elected to participate on the basis of experiencing negative emotions in childhood about singing and, subsequently, 'a non-singing life: most of the participants had not sung for years or even decades' (op.cit.:1667). Participants progressed from not being able to find a common starting note for a well-known children's song at the beginning of the programme to being able to self-correct when making a pitch error against a melodic target. Some were even prepared to sing in public at the end of the programme. Singing learning was structured through group and solo sessions, with the number of individual lessons being determined by the degree and nature of assessed singing need at the beginning of the programme. Critical to the pedagogical approach was the desire to create an 'emotionally safe context' (op.cit.:1671), not least because of the perceived need to address the emotional trauma around singing that had been reportedly experienced in many of the participants' childhoods.

Pedagogy that was sensitive to participants' 'non-singer' identity was also reported as a core characteristic in the data from a systematic, seven-month case study of the rehearsal experiences of members of an adult 'Can't Sing Choir' in London (Richards, 2002; Richards and Durrant, 2003). At the beginning, choir members were noticeably self-conscious, unsure of what to expect and somewhat fearful of exposing their singing inability to others. In addition to simple singing activities, opening with vocal warm up exercises and progressing to simple singing tasks and songs, each being modelled by the teacher, there were systematic opportunities provided each week for informal discussion between members and the choir director about vocal problems and anxieties. The director was observed to adopt a friendly, non-judgemental style in her singing pedagogy, with lots of physical gestures being added (such as for pitch direction) to support the vocal and auditory experiences with visual metaphor. Notwithstanding this approach, the researcher observed a continued mismatch between verbal (talk) and non-verbal (singing) behaviours, with the former being animated and positive, especially during break times, whilst the latter signalled a persistent wariness and lack of

confidence during the actual singing activities². Nevertheless, questionnaire responses at the end of the seven-month research period revealed an overwhelmingly optimistic reappraisal of participants' singing competency, with approximately two-thirds being more positive about their voice quality and their ability to know consciously if they were 'singing in-tune or not'. They reported experiencing a wider vocal pitch range, allied to a 'better understanding of the voice and singing' (Richards, 2002:63). Adjectives used to summarise their experiences of being in the 'Can't Sing Choir' were exhilarating, uplifting, inspiring, fun, wonderful, joyful, encouraging, liberating, positive, energising, relaxing and enjoyable. Similarly, having had this experience, virtually all (97%) agreed that most adults can improve their singing voices with appropriate help and encouragement, a finding that echoed similar positive reports from an earlier Canadian study of 'tone-deaf' university students (Mawhinney & Cuddy, 1984). The majority of students believed that they could improve their singing competency and address their perceived 'tone-deafness' if provided with appropriate tuition³.

Other recent research into singer identity in a choral setting supports the view that singing is sensitive to social context, conductor behaviour and also to physical organisation of the singers (Bonshor, 2014). Identity can be impacted positively or negatively by the conductor's body language, which—in turn—can nurture (or not) a sense of collective expertise and confidence amongst choir members. Similarly, the physical configuration of the choir, of how closely the singers are placed in relation to each other, can create positive (or negative) feelings in amateur singers that influence their sense of individual as well as collective competency. In this particular study, amateur choral singer identity was perceived to be enhanced when singers were arranged in vocal sections (such as the sopranos being all together), rather than in a mixed voice configuration, as had been reported favourably by Daugherty (2003) for chamber choir placements.

The transformation of negative singer identity into something more positive suggests that adult singing ability and associated identity need not be fixed entities (*cf*

² Singer anxiety is also evidenced in those with much greater skill levels, including professional singers. For example, a study of music performance anxiety (MPA) amongst 32 opera chorus singers working for Opera Australia revealed higher trait anxiety (a general tendency to be anxious) than in a normative sample (Kenny et al, 2004).

³ In another example of singing education with adults who have very poor competency, a study of a seven-week singing intervention with a group of so-called 'congenitally amusic' adults led by a professional singing teacher revealed positive improvements in perception and production for several participants (Anderson et al, 2012). According to Anderson et al, 'congenital amusia is a developmental disorder that impacts negatively on the perception of music, which has been estimated to occur in about 4% of otherwise normal individuals' (2012: 345).

Dweck, 2013), but can be open to change, not least because cognitive development is shaped by social development, with dedicated neural networks being reported in the brain that represent self and others (Uddin et al, 2007; see Dweck, op.cit. for a review). Similarly, although theoretically such singer identity transformation may be possible for children, i.e., from negative to positive, the evidence suggests that, for the majority (who go on to become the adult 'occasional singers' reported earlier), this is not an appropriate conceptualisation. It is more common in childhood for a generally positive singer identity to emerge until or unless there is some limiting experience to challenge such self-perception. It is only a minority of children who experience some form of emotional trauma about their singing, such that they will be reported subsequently as 'singing disabled' adults (using whatever label that is current). As mentioned earlier, the available research data suggest that less than 5% of children aged 11 years sing 'out-of-tune', a reduction from approximately one-third of 7 year olds (Welch et al, 1997; Welch, 2009). The evidence suggests that, as children become more competent and confident in their singing abilities formed within social contexts, there are likely to be concomitant and reciprocal changes in their social selves, in their sense of being socially included, of being part of a community (Welch et al, 2014), which links to the emergence of a positive identity as a 'singer' as defined by their social group. Where singing development is inhibited socially, it is more likely that children will experience a sense of otherness, of being an 'outsider' compared to the majority of their peers and thus extend this identity into adult life in the absence of any countervailing experience.

"...But it was a dread that you were going to have to go to music, singing I guess... I really disliked it because it was an ordeal. You had to get in the back row and pretend you were singing while everybody else sang... but you were not allowed to sing and you weren't allowed to turn it down. It was never "try a bit harder or half dozen of you girls come down a little earlier or stay after class"; there was no encouragement, none whatsoever... There was no instruction. They worked with you to sing a song same as anybody. I guess practice makes perfect for those that could sing. But I never sing. You never hear me in the shower, accidentally, ever sing a note. Never in the car. Never even to myself."

(Carla, 43-year-old mother of three and one of five children who grew up in Newfoundland: Knight, 2010:89)

The emergence of singer identity in childhood

The origins of singing identity begin early in life (*cf* Welch, 2005). Initially, young children's earliest vocal products relate to their affective state (such as discomfort or distress, or eustress—the latter characterised by euphonic cooing, e.g., Papousek [H], 1996). Subsequently, the interfacing of infant neuropsychobiological design and sonic experiences within the maternal culture shapes the infant's pre-linguistic vocalisations to create a form of parent-child/self-other communication that draws on the prosodic features of the mother tongue (such as pitch contours and basis harmonic intervals, 3rds, 4ths, 5ths, octaves, as well as loudness, timbre and rhythm) (e.g., Papousek, [M], 1996; Malloch, 1999 – see Welch, 2005 for an overview). This form of 'infant-directed speech' is complemented by 'infant-directed singing', in which mothers sing to their infant more expressively, more slowly, and at a higher pitch level than when singing informally on their own (Trainor et al, 1997; Trehub et al, 1997). Communication is also reciprocal, in the sense of parents encouraging and responding to the infant's vocal products, whilst reinforcing and expanding these (Kirkpatrick, 1962; Tafuri, 2008; Trehub & Trainor, 1998). Knight (2010:267) argues that such "musical conversation' is singing *as* life [original emphasis], not merely singing in life.'

Trehub and Gudmundsdottir (2015) report that mothers are 'singing mentors' by revealing the ways that they intuitively use melodious talk and a limited repertoire of favourite songs to bring comfort and joy to their children. Maternal singing is a 'caregiving tool' that is aimed primarily at emotional regulation, at least in the first year of life, with visual gestures forming an integral part of the behaviour, and vocal repertoire shaped by the dominant culture. Infants respond in terms of levels of arousal, being sensitive to expressive variations in the maternal singing. Over time, the maternal 'singing mentor' focus is reported to change from predominantly attention capture and emotional regulation towards more active singing games, including rudimentary vocal duets (Kirschner & Tomasello, 2010) and, subsequently, the playful singing of pre-schoolers that explores elements of the dominant musical culture and which is often linked to language acquisition (Trehub and Gudmundsdottir, *op.cit*). This maternal singer identity should be regarded as crucial in the infant's socio-musical development.

Whilst the acquisition of singing shows considerable individual variation, being related to home environment and community engagement (including the value placed on singing within the maternal culture), where encouraged, young children are likely to build a repertoire of known songs or fragments and to use elements of these in their own creative vocal play (*cf* Barrett, 2006, 2009, 2011). For example, in an ongoing study, Wu is investigating musical activities in the family homes of members of the Chinese diaspora in London. Participants' mothers are keeping diaries, written and video, of

their young children's musical behaviours, with emergent data being mapped onto a new developmental framework⁴ to reveal how such behaviours, including singing, emerge, are repeated and develop. In one recent video clip, Lucy aged 4 was filmed by her mother singing a made-up song in the shower, drawing on music from a Disney CD that she had listened to previously in the family car.

She sang a made-up song when having her shower. I asked her 'What are you singing?' She said 'I am singing a Princess song made by myself.' I asked her why there were some tongue-clicking sounds. She said that the Princess was knocking on the door. 'She is going to visit me.'

(Lucy's mother's diary entry 2, as reported by Wu, 2015)

At this stage in life it seems unlikely that the young child has a separate identity as a 'singer', although there will be an awareness from exposure to adults and siblings, as well as the music performance media, of what 'singers' do, such as dancing whilst vocalising, a behaviour that is often picked up and mimicked by the young child. Experience in community playgroups prior to nursery school, as well as in the home, nurtures the developing singer identity where the prime focus is on participation rather than accurate reproduction of song material. For the vast majority of young children, unless they are stopped in some way from expressing themselves through their recognisably sung products, their emerging singing identity is positive, as evidenced within their imaginative play or in their growing awareness of the song repertoire of childhood (Barrett & Tafuri, 2012; and see Barrett, this volume). Anecdotally, over the past three years of new fatherhood, I have experienced how groups of mothers in voluntary community settings make regular time for collective song singing, with mothers (and sometimes fathers) sitting in a circle and each young child in turn being asked to choose a favourite song for everyone to sing, sometimes prompted by the mother, that is then performed enthusiastically by the collective group of parents and toddlers, often with actions.

As children get older and enter the school system, the focus tends to be more on the formal learning of songs in the classroom, whilst they will continue to experience informal learning of other song repertoire outside, such as in the home and related contexts. These experiences are either virtual (as mediated by media), or direct through

⁴ The *Sounds of Intent in the Early Years* framework (Ockelford, 2015) is based on existing literature on young children's musical development, allied to newly collected empirical data, to provide a coherent developmental structure to map children's musical behavior hierarchically (simple to complex). It is based on an extended study that has mapped musical development in children and young people with complex needs (Ockelford & Welch, 2012).

contact with another human, such as their peers, which may also be linked to shared listening to recorded or broadcast vocal music. The outcome is not just a sense of child singer identity that is shaped by these two contexts of musical experiences (school/non-school), but of possible tension between the two. For example, as part of a national evaluation of the National Singing Programme (NSP) *Sing Up* in England, participant children were asked a series of questions concerning their identity as a singer. In design, this questionnaire drew on an earlier study (Joyce, 2005) that had investigated the possible symbiotic relationship between children's musical development and their experience of different musical environments (based on the socio-cultural stance taken by Welch, 2001). Joyce's findings, based on responses from 114 children aged 9 and 10 years, revealed a dichotomy between singing in the home and singing in school, in that 64% of children reported that they enjoyed singing at home, compared to 36% in school. Also, a quarter of the children reported that someone had told them that they could not sing, a finding that has echoes of the negative childhood experiences summarised earlier that carry over to singing identity in adulthood.

The contradiction in singer identity between singing in school and singing at home was reinforced by detailed analyses of the large-scale *Sing Up* questionnaire data. Responses from 8,124 participants aged seven plus to ten plus revealed that younger children were more positive about singing than older children. This is somewhat paradoxical, in that as children grew older and become more competent at singing (as measured comparatively for each individual in a separate strand of the *Sing Up* programme evaluation, e.g., Welch et al, 2010), they tended to become more negative about singing in school. However, children in those schools that had participated in the *Sing Up* programme and, by inference and researcher observation, had experienced a greater nurturing emphasis on the collective development of singing skills, were significantly more positive about singing in school than their non-*Sing Up* experienced peers. In these *Sing Up* cases, older children matched their younger peers' enthusiasm for school-based singing and tended to have sustained more positive singing identities.

Gender is also a factor, in that girls are often reported to be more competent at school-type song singing than boys, a common finding in studies of singing in primary (elementary) school settings (Mang, 2006; Welch, 2009; Welch, 2015; Welch, et al. 1997)⁵. For example, detailed analyses of the individual song singing behaviours of 11,388 participant children from across the first three years of the *Sing Up* programme evaluation revealed that, overall, girls were approximately three years in advance of

⁵ Note that such gender differences in singing competency are not evident for child singers that have undergone extensive training, such as those regularly rehearsing and performing a musically demanding repertoire as choristers in cathedrals alongside professional male singers (Owens & Welch, in press; Saunders et al, 2012; Welch, 2011).

boys, a difference that held across all assessed age groups (5-12 years) (Welch et al, 2012). Nevertheless, both sexes demonstrated an improving trend of singing competency with age, and children in schools with experience of the *Sing Up* programme at the time of assessment were rated as more competent than those without such experience (but with a similar gender bias being evidenced in favour of girls for both sets of children). Similarly, in earlier published studies of 'out-of-tune' singing by children in Western cultures (a socially defined behaviour that declines with increasing age), boys tend to outnumber girls, often by a ratio of 3 or 4:1 (Howard et al, 1994; Welch, 1979).

Perceived singer identity in childhood is a psychoacoustic, socially constructed phenomenon. Gender is evidenced in the sung products of children, which are perceived as being feminine or masculine. Untrained young boys' singing can be mistaken as girls' up to around the age of eight years (Sergeant et al, 2005). In contrast, trained girls' voices can be mistaken as trained boys' from around the age eight to fourteen years, depending on the musical piece being performed and the experience of the listener with this kind of repertoire (Howard et al, 2002; Welch & Howard, 2002).

The shaping of children's sung products by the social contexts that they experience impacts on their emerging singing identity throughout childhood and into adolescence. The onset of puberty brings about changes in the underlying anatomical and physiological structures of the voice and, in turn, these impact on singing behaviours for both females and males (see overviews by McAllister & Sjölander, 2013; Welch, 2015). Boyhood singing behaviour and consequently singer identity is particularly disrupted by the onset of puberty. For some, this creates a sense of loss as they enter their teens, and the products of their singing (and spoken) voice become unstable (Ashley & Mecke, 2013; Freer, 2015). Unfortunately, research and school inspection evidence suggests that the secondary school music curriculum and pedagogical practice, at least in England, is not always well suited to sustaining the singing identities of boys into adolescence and beyond (Ashley, 2013; Ofsted, 2012).

For some boys, the transition from primary to secondary schooling (or its equivalent in different countries) is reported also to mark a time when they reimagine themselves and the relative importance of singing in their lives (Freer, op.cit.). Factors that can support boys in continuing to explore and enjoy their singer identity include the teacher's personality, evidence of high levels of teacher musicianship such as reflected in the choice of the selected, appropriately challenging singing repertoire, and the social environment for singing. Where each of these three factors are perceived to be positive, then boys are more likely to continue to participate in choral singing (ibid).

By comparison, for girls, whilst puberty also brings about physical changes that can impact on singing identity (Gackle, 2014), these are more subtle, such as related to

increased breathiness and short-term discomfort in the upper singing range. Consequently, because these changes are relatively minor, it may be that girls may be unaware of such differences in their voices unless they have a regular performance schedule and are sensitised to small, perceived changes in their singing ability.

For some children in primary (elementary) school settings, there is an added challenge, as reported earlier, of inappropriate and adverse comments from teachers that can dissuade children from singing activities. Such comments significantly hinder their singing development and thus create a negative singer identity where previously the identity was more positive. In part, such experience may derive from a tendency for primary (elementary) teachers to feel less confident about leading music in their classes, often because they are reported to believe that they lack appropriate music subject knowledge and have limited faith in their own musicality (Hennessy, 2000; McCulloch, 2006; Mills, 1989; Stunell, 2007). Where teachers do not have a professional, research-based understanding of how singing develops and of how singing might be fostered in children, possibly allied to their own personal adult negative singing self-concept, it is not surprising that they might seek to avoid having singing in the classroom curriculum. This would be reinforced if they also held a bipartite, 'can'/'cannot' view of singing that is reflected in the musical competency expectations of themselves and others, including their pupils (Abril, 2007; Gifford, 1993; Grace, 2011).

Nevertheless, one strand of the *Sing Up* programme was focused on developing competency in singing pedagogy for teachers. A subsequent survey evaluation (Himonides et al, 2011) of 1046 respondents nationally revealed that this programme of in-service singing education was effective in bringing about positive changes in singer identity, both personally and professionally. Amongst the findings, respondents reported increased confidence in their ability to lead singing and in their own singing skills, as well as a greater awareness of how they could help all children to develop. Given that two-thirds of the respondents were aged 40 or over, representing many years of collective teaching experience, but with over half having no formal qualification in music, the reported outcomes are commendable in suggesting that identity in singing can become more positive in terms of personal and professional self-efficacy.

Summary and Conclusions

As reported in the preceding narrative, singer identity has many different interrelated facets. These arise from an underlying interfacing of (a) the nature of the vocal instrument itself—its physical structure, and its psychological management, which change and develop over time as part of a normal maturational process, interfaced with experience, and in which singing behaviour can have a close relationship with the other

prime vocal function, namely that of speech (Patel, 2008; Thurman & Welch, 2000). In addition, (b) a range of personal, musical and socio-cultural contexts shape vocal behaviour, including singing (see Figure 1). Different cultures and social groups place distinctive values on the act of singing. In some cultures (such as Afghanistan), the leading of singing is an expected role of particular families within the local community (Doubleday & Baily, 1995). This is in contrast to sub-Saharan communities in which singing and dance are customarily interwoven as a common cultural activity (Blacking, 1973).

For infants, the definition of 'singing' can be very fuzzy, in that some of their earliest vocal products from the age of two months onwards can be construed by adults as 'musical babbling' (Tafari & Villa, 2002) and are the precursors of an emergent singing identity. These kinds of utterance contain recognisable musical features, being closely related to the use by carers of symbiotic 'infant-directed' vocal behaviours (speech and singing) (Trehub & Gudmundsdottir, 2015). As children enter toddlerhood, they explore and play with aspects of the song repertoire to which they have been exposed through interaction with adults in the home and in the wider community, as well as engaging with toys with musical features and music media.

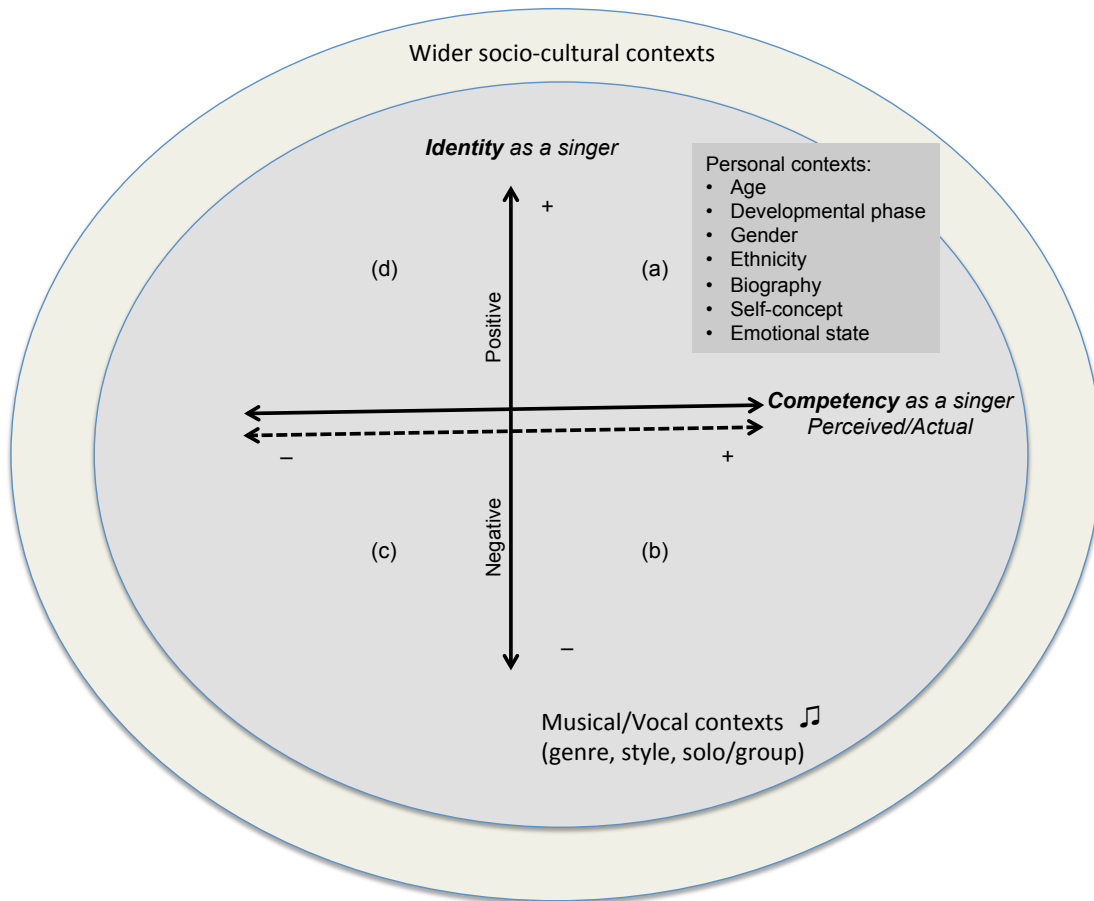


Figure 1: The interrelated nature of singer identity

Vocal products that are recognisable as ‘singing’ (in a conventional sense) emerge from around the age of two years onwards. However, at times the boundaries between singing and speaking can still be blurred or ambiguous to the adult listener. Interaction with carers, especially the mother, is reported to be crucial in the development of a song repertoire (whether whole songs or fragments) by the time of entry to schooling, and singing competence, in the sense of being relatively tuneful, is reported to be closely related to the degree of exposure to maternal singing in the home (Ilari, 2005; Kirkpatrick, 1962). In turn, the rich experience of singing as a child is reported to be linked, subsequently, to the value and frequency of singing when the same child achieves adulthood and uses singing as part of their own childcare practice, a finding that implies that early singing exposure can cross generations (Mehr, 2014).

It is during childhood that singing identity comes more strongly into focus, in part because of the formalisation of music in the school curriculum, but also because of increased access to popular music media in the home (for example, 57% of English

children aged 3-4 years who go online are reported to listen to music, rising to 64% of children aged 5-7 years; Ofcom, 2014). It is also during this age phase that gender effects become more evident in singing, with girls growing up in Western-type cultures increasingly becoming more advanced in their singing competency than boys (Welch et al, 2012). In addition, gender becomes more prominent in children's sung products, with distinct acoustic features emerging that allow listeners (including the children themselves) to be able reliably to recognise the sex of a child singer (Sergeant et al, 2005). Furthermore, this is the age phase when the foundations for adult singer identity are laid, both in terms of competence and confidence. It is also an identity process that is challenged by the advent of physical voice change in puberty for males (and less so for females), which can provide a maturation-driven reason for some older children significantly to reduce their singing behaviour. The possible emergence of a positive male singer identity in adolescence and beyond is not helped by conventional public discourse concerning voice change in males that refers to 'voices breaking' (rather than the more neutral term 'voice change', or the positive term 'voice transformation').

Consequently, in adulthood, a variety of singer identities are evident within the population. This variety can be hypothesised as being biased towards four possible groupings. Each of these has their own singer *identity* predisposition along a continuum that embraces positive to negative, and which interfaces with two other positive to negative continua that are related to singing *competency* (both self-perceived and actual). (The hypothesised spaces defined by the intersections of these continua are shown as (a)-(d) in Figure 1, with the vertical continuum signalling singer identity and the two horizontal continua singing competence – perceived and actual). The characteristic biases of these four groupings are as follows:

- Adults with positive self-identity as singers and who perceive themselves (and are perceived by others) as skilled (located in space (a) on Figure 1);
- Adults with a more negative self-identity who believe that they are not competent at singing, but who are actually more competent in reality, as assessed by independent judges (located in space (b), but likely to overlap with other groups);
- Adults who have a negative self-identity as singers and whose singing competency is also poor (located in space (c)); and
- Adults who have a positive self-identity as singers, who believe themselves to be relatively competent, but who in reality are not (or not as good as they believe they are).

These four hypothesised groupings are also evidenced in different ways in the literature, although there are likely to be overlaps between them.

- For those adults signalled by grouping (a), these can be seen on popular singing-based television shows that showcase adults who are sufficiently competent to perform on a public stage (such as in the TV programme 'The Voice'). Some of these participants report that they are already employed as part-time (occasionally, as full-time) singing entertainers; others are not so employed, but for each person, singing is a central part of their identity (*cf* related to 'music in identity', Hargreaves et al, 2002). Alongside these 'amateur' singers are other adults who earn their living as 'professional' singers within various parts of the music industry (such as in theatres, opera houses, concert halls, cathedrals and equivalent major churches, and on cruise ships), with opportunities for singing-based media engagements on television, radio and with the recording industry. It is also common for professional musicians, including singers, to include teaching as part of a portfolio career (Creech, 2014).
- Those signalled in grouping (b) are more heterogeneous and represent attributes that are likely to overlap with groupings (a) and (d) to a certain extent. These adults are likely to be less confident about their singing, may avoid any kind of public context where they are expected to sing on their own (unless in a karaoke bar with friends), but some may be sufficiently encouraged by others to join workplace or community choirs, where they develop their singing competence as part of a larger ensemble and also gain enjoyment from the social aspects of singing (e.g., Bailey & Davidson, 2009; Clift & Hancox, 2010). Chorus America (2009), for example, reported that there were around 270,000 choirs in the USA, with 18.1% of households having one or more adults participating in chorus activities. The numbers of adults in choirs totalled 32.5 million. When children were added, participation increased to 22.9%, i.e., almost 1:4 of US households, numbering 42.6 million Americans (adults and children). Nevertheless, other members of grouping (b) would only ever sing at home, perhaps in the shower, with their young children, and/or in the car whilst listening to their favourite music. Schoolteachers are likely to be widely represented in this broad grouping. These adults are 'occasional singers', not always very accurate, nor consistent with their singing, and may be reluctant to sing in certain contexts outside those that are immediately familiar, such as family gatherings, or with peers attending sports events. The last of these socially located singing behaviours was evidenced in a study of football crowd singing by Professor David Howard, resulting in a 'league table of English Premier League fans' singing [in which] Southampton topped the table [as the most tuneful] and Bolton came last [sounding the most 'tone-deaf']'. (See the public discussion of the outcomes at http://news.bbc.co.uk/sport1/hi/sports_talk/1879433.stm)).

- In contrast, those adults in grouping (c) are negative about their singing ability, demonstrate little if any singing competence, and may classify themselves as ‘non-singers’. Several research studies have focused on this group in order to understand both the social reasons for their negative singing self-concept (e.g., Knight, 2010), but also to investigate from a neuropsychobiological perspective the nature of the human process of singing and how this can be disrupted or deficient (for example, see the articles in the recent special issue on singing in the journal *Music Perception*, 2015, volume 2). A common finding reported from empirical studies with this grouping is the lifelong negative impact on singing identity of some emotional trauma associated with singing in childhood.
- Finally, those adults in grouping (d) are likely to be less conscious about singing in public, for example, but are not very competent. Less is known from research about this group, but anecdote suggests that they exist, and it would appear that some television media exploit their existence to boost audience ratings by allowing expert panel members to provide negative commentary about less than competent live singing performance.

In summary, at any given moment, individual singer identity (Figure 1) is closely related to age (biological and chronological), including the underlying development of the voice mechanism and its neurological management and monitoring (see Kleber & Zarate, 2014, for an overview of the neuroscience of singing), their biological sex, ethnicity, and also their emotional engagement with singing as a form of personal expression. In addition, social and cultural identities and roles (such as parenthood) exert influences, as well as the dominant forms of ‘singing’ that exist in the locality.

There are a great number of musical genres and sub-genres in contemporary society, many of which embrace vocal performance. These include over 45 different musics enjoyed and practised within the South Asian diaspora in the UK (Farrell et al, 2005); the 200+ folk musics in China exhibited across 56 different ethnic groups (Yang & Welch, 2014); the separate Indigenous, African and Western music traditions of contemporary Brazil (Soares, 2006); as well as over 200 kinds of rock music listed on Wikipedia (http://en.wikipedia.org/wiki/List_of_rock_genres).

Singer identity is also shaped by the local, immediate social context, such as singing alone (whether to yourself as the audience, or in the presence of others), or in a collective setting (family, peer group, community or school choir). Singing to yourself is likely to be perceived differently from singing on the concert stage in front of a paying audience. The former is private and personal, relaxed and usually unselfconscious, from infancy through to senescence. In contrast, public singing often involves a greater sense

of 'performance', of implied 'correctness' against some perceived expectation of what counts as 'appropriate' musical behaviour, and offering a sense of 'audience'.

From an educational perspective, in which the prime imperative is usually to foster singing development by sustaining and extending current singing competency in some way, it becomes critical to understand how the forces reported above shape singer identity in childhood, adolescence and adulthood, as well as for the precursors of singing identity in infancy. It may then be possible to provide a much richer and more effective singing pedagogy across the lifespan that is nuanced for age, gender, ethnicity, development age, emotional engagement with singing and personal biography.

One example of the impact of an appropriate education intervention on singer identity is implied in a 19th century Boston, USA initiative to introduce vocal music into the schools' curriculum as a social and moral experiment. In May of the following year, the Mayor of Boston requested a report on progress. The schools' response was subsequently published by the Boston Music Gazette on Wednesday, July 25, 1838 as follows:

'...One thing has been made evident, that the musical ear is more common than has been generally supposed...Many who at the outset of the experiment believed that they had neither ear nor voice, now sing with confidence and with considerable accuracy; and others who could hardly tell one sound from another, now sing the scale with ease...'
Birge (1937: 50)

Given the wealth of research evidence related to singing and singing-related behaviours across the lifespan that has emerged since the publication of this report, we should be ideally placed to ensure that the fostering of a positive singer identity is a realisable goal for everyone. This is not to say that everyone must sing (although it would be possible to articulate the wider physical, psychological and social benefits of such a policy), but that an individual's decision to sing or not is based on a personal biography of successful singing engagement.

References

- Abril, C.R. (2007). I have a voice but I just can't sing: a narrative investigation of singing and social anxiety. *Music Education Research*, 9(1), 1-15.
- Anderson, S., Himonides, E., Wise, K., Welch, G., & Stewart, L. (2012). Congenital amusia: is there potential for learning? A study of the effects of singing interventions on pitch production and perception of those with congenital amusia. *Annals of the New York Academy of Sciences*, 1252, 345-353.

- Ashley, M. (2013). Broken voices or a broken curriculum? The impact of research on UK school choral practice with boys. *British Journal of Music Education*, 30(3), 311-327. doi: [10.1017/S0265051713000090](https://doi.org/10.1017/S0265051713000090)
- Ashley, M., & Mecke, A.-C. (2013). 'Boys are apt to change their voice at about fourteene yeeres of age': An historical background to the debate about longevity in boy treble singers. *Reviews of Research in Human Learning and Music*, 1: epub2013001. doi:10.6022/journal.rrhlm.2013001
- Bailey, B.A., & Davidson, J.W. (2009). Amateur group singing as a therapeutic instrument. *Nordic Journal of Music Therapy*, 12(1), 18-32. doi: 10.1080/08098130309478070
- Barrett, M.S. (2006). Inventing songs, inventing worlds: The 'genesis' of creative thought and activity in young children's lives. *International Journal of Early Years Education*, 14(3), 201 – 220.
- Barrett, M. S. (2009). Sounding lives in and through music: A narrative inquiry of the 'everyday' musical engagement of a young child. *Journal of Early Childhood Research*, 7(2), 115–134.
- Barrett, M. S. (2011). Musical narratives: A study of a young child's identity work in and through music-making. *Psychology of Music*, 39(4), 403–423.
- Barrett, M. S., & Tafuri, J. (2012). Creative meaning-making in infants' and young children's musical cultures. In G. E. McPherson & G. F. Welch (Eds.), *Oxford handbook of music education* (pp. 296–313). Oxford, UK: Oxford University Press.
- Birge, E.B. (1937), *History of Public School Music in the United States*. Bryn Mawr, Pennsylvania: Oliver Ditson Company.
- Blacking, J. (1973). (1973). *How Musical is Man?* Seattle: University of Washington Press
- Bonshor, M.J. (2014). *Confidence and the choral singer: the effects of choir configuration, collaboration and communication*. Unpublished PhD Thesis, University of Sheffield.
- Bruner, J. (1990). *Acts of meaning*. Cambridge, Massachusetts: Harvard University Press.
- Caldwell, G.N. (2014). *Exploring the Musical Identities of Adult-Self-Defined 'Non-Musicians': An Interpretative Phenomenological Analysis (IPA)*. Unpublished PhD Thesis, Glasgow Caledonian University.
- Chorus America. (2009). *How Children, Adults, and Communities Benefit from Choruses*. Washington, D.C.: Chorus America.
- Clift, S., & Hancox, G.(2010). The significance of choral singing for sustaining psychological wellbeing: Findings from a survey of choristers in England, Australia and Germany, *Music Performance Research*, 3(1), 79-96.
- Creech, A. (2014). Understanding Professionalism: Transitions and the Contemporary Professional Musician. In: I. Papageorgi, & G.F. Welch (Eds.), *Advanced Musical Performance: Investigations in Higher Education Learning*.(pp. 349-363). Farnham, Surrey: Ashgate Publishing Ltd.
- Cuddy, L.L., Balkwill, L-L., Peretz, I., & Holden, R.R. (2005). Musical difficulties are rare. A study of "tone deafness" amongst university students. *New York: Annals of the New York Academy of Sciences*, 1060, 311-324. doi: 10.1196/annals.1360.026.
- Dalla Bella, S. (2015). Defining Poor Pitch Singing: A Problem of Measurement and Sensitivity. *Music Perception*, 32(3), 272-282.
- Dalla Bella, S., & Berkowska, M. (2009). Singing proficiency in the majority: Normality and "phenotypes" of poor singing. *Annals of the New York Academy of Sciences*, 1169, 99-107.
- Dalla Bella, S., Giguère, J-F. & Peretz, I. (2007). Singing proficiency in the general population. *Journal of the Acoustical Society of America*, 121(2), 1182-1189.

- Daugherty, J. (2003). Choir spacing and formation: Choral sound preferences in random, synergistic, and gender-specific chamber choir placements. *International Journal of Research in Choral Singing*, 1(1), 48-59.
- Doubleday, V., & Baily, J. (1995). Patterns of musical development among children in Afghanistan. In: E.J. Fernea (Ed.), *Children in the Muslim Middle East* (pp. 431-444). Austin: University of Texas Press.
- Dweck, C. (2013). Social Development. In: P.D. Zelazo (Ed.), *The Oxford Handbook of Developmental Psychology, Vol 2: Self and Other*. Oxford Handbooks Online. doi: 10.1093/oxfordhb/9780199958474.013.0008
- Farrell, G., Bhowmick, J., & Welch, G. (2005). South Asian music in Britain. In H.-K. Um (Ed.), *Diasporas and Interculturalism in Asian Performing Arts: Translating Traditions*. (pp. 104-128). London; RoutledgeCurzon.
- Freer, P.K. (2015). Perspectives of European boys about their voice change and school choral singing: developing the possible selves of adolescent male singers. *British Journal of Music Education*, 32(1), 87-106. doi: <http://dx.doi.org/10.1017/S026505171400031X>
- Gackle, L. (2014). Adolescent Girls' Singing Development. In: G.F. Welch, D.M. Howard, & J. Nix. (Eds.), *Oxford Handbook of Singing*. New York: Oxford University Press. doi: 10.1093/oxfordhb/9780199660773.013.22
- Gifford, E. (1993). The musical training of primary teachers: Old problems, new insights and possible solutions. *British Journal of Music Education*, 10(1), 33-46.
- Grace, A. (2011). *Singing Teaching and Generalist Primary Teachers*. Unpublished MA Dissertation, Institute of Education, University of London.
- Hargreaves, D.J., Miell, D. & MacDonald, R. A. (2002). What are musical identities and why are they important? In: MacDonald, R.A., Hargreaves, D.J. & Miell, D., (Eds.), *Musical identities*. (pp.1-20) Oxford: Oxford University Press.
- Hennessy, S. (2000). Overcoming the red-feeling: the development of confidence to teach music in Primary school amongst student teachers. *British Journal of Music Education*, 17(2), 183-196. doi: <http://dx.doi.org/>
- Himonides, E., Saunders, J., Papageorgi, I., & Welch, G.F. (2011). *Researching Sing Up's Workforce Development*. London: International Music Education Research Centre, Institute of Education, University of London.
- Howard, D. M., Szymanski, J., & Welch, G. F. (2002). Listener's perception of English cathedral girl and boy choristers. *Music Perception*, 20(1), 35-49.
- Howard, D.M., Angus, J.A., & Welch, G.F. (1994). Singing pitching accuracy from years 3 to 6 in a primary school. *Proceedings of the Institute of Acoustics*, 16(5), 223- 230.
- Ilari, B. (2005). On musical parenting of young children: beliefs and behaviors of mothers and infants. *Early Child Development and Care*, 175, 647-660.
- Joyce, H. (2005). *The effects of sex, age and environment on attitudes to singing in Key Stage 2*. Unpublished Master's dissertation, Institute of Education, University of London.
- Kagan, J. (2001). Biological Constraint, Cultural Variety, and Psychological Structures. In A.R. Damasio, A. Harrington, J. Kagan, B.S. McEwen, H. Moss and R. Shaikh (Eds.), *Unity of Knowledge: The Convergence of Natural and Human Science*. Annals of the New York Academy of Sciences, Volume 935. (pp. 177-190). New York: New York Academy of Sciences.
- Kenny, D.T., Davis, P., & Oates, J. (2004). Music performance anxiety and occupational stress amongst opera chorus artists and their relationship with state and trait anxiety and perfectionism. *Anxiety Disorders*, 18, 757-777. doi: 10.1016/j.janxdis.2003.09.004

- Kirkpatrick, W. (1962). *Relationships between the singing ability of prekindergarten children and their home musical environment*. Unpublished Doctoral Dissertation. University of Southern California, Los Angeles, California.
- Kirschner, S., & Tomasello, M. (2010). Joint music making promotes prosocial behavior in 4-year-old children. *Evolution and Human Behavior*, 31: 354–364.
- Kleber, B.A., & Zarate, J.M. (2014). The Neuroscience of Singing. In: G.F. Welch, D.M. Howard, & J. Nix. (Eds.), *Oxford Handbook of Singing*. New York: Oxford University Press. doi: 10.1093/oxfordhb/9780199660773.013.015
- Knight, S. (2010). *A study of adult 'non-singers' in Newfoundland*. Unpublished PhD thesis, Institute of Education, University of London.
- Larrouy-Maestri, P., Magis, D., & Morsomme, D. (2014). The Evaluation of Vocal Pitch Accuracy: The Case of Operatic Singing Voices. *Music Perception*, 32(1), 1-10. doi: 10.1525/MP.2014.32.1.1
- Malloch, S.N. (1999). Mothers and infants and communicative musicality. *Musicae Scientiae, Special Issue*, pp29-57.
- Mang, E. (2006). The effects of age, gender and language on children's singing competency. *British Journal of Music Education*, 23(2), 161-174. doi:10.1017/S0265051706006905.
- Mawhinney, T.A., & Cuddy, L.L. (1984). *A factor analysis investigation of tone deafness*. Unpublished paper presented at MENC, Chicago.
- Mehr, S.A. (2014). Music in the Home. New Evidence for an Intergenerational Link. *Journal of Research in Music Education*, 62(1), 78-88. doi: 10.1177/0022429413520008
- McAllister, A. & Sjölander, P. (2013). Children's Voice and Voice Disorders. *Seminars in Speech and Language*, 34(2), 71-79. <http://dx.doi.org/10.1055/s-0033-1342978>
- McCulloch, L. (2006). *"I don't know anything about music." An exploratory study of Primary teachers' knowledge about music in education*. Unpublished PhD, Northumbria University.
- Mills, J. (1989). The generalist primary teacher of music: a problem of confidence. *British Journal of Music Education*, 6(2), 125 – 138.
- Numminen, A., Lonka, K., Rainio, A.P., & Ruismäki. (2015). *'Singing is no longer forbidden to me – it's like part of my human dignity has been restored.'* Adult non-singers learning to sing: An exploratory intervention study. *The European Journal of Social and Behavioural Sciences*, XII. <http://dx.doi.org/10.15405/ejsbs.149>
- Ockelford, A. (2015). *Sounds of Intent in the Early Years*. Oxford: Soundabout.
- Ockelford, A., & Welch, G. (2012) 'Mapping musical development in learners with the most complex needs: the *Sounds of Intent* project', in G. McPherson and G. Welch (eds), *Oxford Handbook of Music Education*, Vol. 2, Oxford: Oxford University Press, pp. 11–30.
- Ofcom. (2014). *Children and Parents: Media Use and Attitudes Report*. Retrieved from http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/media-use-attitudes-14/Childrens_2014_Report.pdf 1 May 2015.
- Ofsted [Office for Standards in Education, Children's Services and Skills]. (2012). *Music in schools: wider still, and wider*. Manchester: Ofsted.
- Owens, M., & Welch, G.F. (in press). Choral Pedagogy and the Construction of Identity: Girls. In: F. Abrahams., & Head, P.D. (Eds.), *Oxford Handbook of Choral Pedagogy*.
- Papoušek, H. (1996). Musicality in infancy research: biological and cultural origins of early musicality. In: I. Deliège, & J. Sloboda (eds.), *Musical Beginnings*, 88-112. Oxford: Oxford University Press.
- Papousek, M. (1996). Intuitive parenting: a hidden source of musical stimulation in infancy. In: I. Deliège and J. Sloboda, (Eds.), *Musical Beginnings*. (pp. 88-112). Oxford: Oxford University Press.

- Patel, A.D. (2008). *Music, Language, and the Brain*. New York: Oxford Univ. Press.
- Patel, A.D. (2010). Music, biological evolution, and the brain. In: M. Bailar (Ed.), *Emerging Disciplines*. (pp 91–144). Houston, TX: Rice University Press.
- Pfordresher, P. Q., & Brown, S. (2007). Poor-pitch singing in the absence of "tone deafness". *Music Perception, 25*: 95-115.
- Richards, H. M. (2002). *Offering an enjoyable choral experience to adult non-singers*. Unpublished graduate Masters dissertation, University of Surrey Roehampton, UK.
- Richards, H. & Durrant, C. (2003). To Sing or Not to Sing: A Study on the Development of 'Non-singers' in Choral Activity. *Research Studies in Music Education, 20*(1), 78-89. doi: 10.1177/1321103X030200010501
- Ruismäki, H. & Tereska, T. (2006). Early childhood musical experiences: contributing to pre-service elementary teachers' self-concept in music and success in music education (during student age). *European Early Childhood Education Research Journal, 14*(1), 113-130.
- Saunders, J., Papageorgi, I., Himonides, E., Vraka, M., Rinta, T., & Welch, G.F. (2012). *The Chorister Outreach Programme of the Choir Schools Association*. London: International Music Education Research Centre, Institute of Education, University of London.
- Schlaug, G. (2015). Musicians and music making as a model for the study of brain plasticity. *Progress in Brain Research, 217*, 37-55. <http://dx.doi.org/10.1016/bs.pbr.2014.11.020>
- Sergeant, D.C., Sjölander, P.J., & Welch, G.F. (2005). Listeners' identification of gender differences in children's singing. *Research Studies in Music Education, 24*, 28-39.
- Snowdon, C.T., Zimmermann, E., & Altenmüller, E. (2015). Music evolution and neuroscience. *Progress in Brain Research, 217*, 17-34. <http://dx.doi.org/10.1016/bs.pbr.2014.11.019>
- Soares, J. (2006). *Adolescents' engagement in computer-based composition in Brazil*. Unpublished PhD thesis, Institute of Education, University of London.
- Stunell, G. (2007). *Help, I'm worried about music! Perceptions of generalist Primary teachers in the context of the National Curriculum for Music in England*. Unpublished PhD Thesis, Institute of Education, University of London.
- Tafari, J. (2008). *Infant Musicality*. Farnham, UK: Ashgate.
- Tafari, J., & Villa, D. (2002). Musical elements in the vocalisations of infants aged 2 to 8 months. *British Journal of Music Education, 19*(1), 73-88.
- Thurman, L., & Welch, G.F. (Eds). (2000). *Bodymind and Voice: Foundations of Voice Education*. [revised edition] Iowa: National Center for Voice and Speech
- Trainor, L.J., Clark, E.D., Huntley, A., & Adams, B. (1997). The acoustic basis of preferences for infant-directed singing. *Infant Behavior and Development 20*: 383–396.
- Trehub, S.E., & Gudmundsdottir, H.R. (2015). Mothers as singing mentors for infants. In: G.F. Welch, D.M. Howard, & J. Nix. (Eds.), *Oxford Handbook of Singing*. New York: Oxford University Press. doi: 10.1093/oxfordhb/9780199660773.013.25
- Trehub, S. E., & Trainor, L. J. (1998). Singing to infants: Lullabies and play songs. *Advances in Infancy Research, 12*, 43-77.
- Trehub, S. E., Unyk, A. M., Kamenetsky, S. B., Hill, D. S., Trainor, L. J., Henderson, J. L., & Saraza, M. (1997). Mothers' and fathers' singing to infants. *Developmental Psychology, 33*, 500-507.
- Uddin, L. Q., Iacobini, M., Lange, C., & Keenan, J. P. (2007). The self and social cognition: The role of cortical midline structures and mirror neurons. *Trends in Cognitive Sciences, 11*, 153–157.
- Welch, G.F. (1979). Poor pitch singing: a review of the literature. *Psychology of Music, 7*(1), 50-58.

- Welch, G.F. (2000). The Ontogenesis of Musical Behaviour: A Sociological Perspective. *Research Studies in Music Education*, 14, 1-13.
- Welch, G.F. (2001). *The misunderstanding of music*. London: University of London Institute of Education.
- Welch, G.F. (2005). Singing as Communication. In D. Miell, R. MacDonald & D. Hargreaves (Eds.), *Musical Communication*. (pp. 239-259). New York: Oxford University Press.
- Welch, G.F. (2009). Evidence of the development of vocal pitch matching ability in children. *Japanese Journal of Music Education Research*, 39(1), 38-47.
- Welch, G.F. (2011). Culture and gender in a cathedral music context: An activity theory exploration. In M. Barrett (Ed.), *A Cultural Psychology of Music Education*. (pp. 225-258). New York: Oxford University Press.
- Welch, G.F. (2015). Singing and Vocal Development. In G. McPherson (Ed.), *The Child as Musician: A Handbook of Musical Development*. 2nd Edition. (pp. 441-461) New York: Oxford University Press.
- Welch, G.F., Himonides, E., Saunders, J., Papageorgi, I., Preti, C., Rinta, T., Vraka, M., Stephens Himonides, C., Stewart, C., Lanipekun, J., & Hill, J. (2010). *Researching the impact of the National Singing Programme 'Sing Up' in England: Main findings from the first three years (2007-2010). Children's singing development, self-concept and sense of social inclusion*. London: International Music Education Research Centre, Institute of Education.
- Welch, G.F., Himonides, E., Saunders, J., Papageorgi, I., & Sarazin, M. (2014). Singing and social inclusion. *Frontiers in Psychology*, 5:803. doi: 10.3389/fpsyg.2014.00803.
- Welch, G.F., & Howard, D.M. (2002). Gendered Voice in the Cathedral Choir. *Psychology of Music*, 30, 102-120.
- Welch, G.F., & Murao, T. (Eds.). (1994). *Onchi and Singing Development*. London: David Fulton
- Welch, G.F., Saunders, J., Papageorgi, I., & Himonides, E. (2012). Sex, gender and singing development: Making a positive difference to boys' singing through a national programme in England. In: S. Harrison, G.F. Welch, & A. Adler (Eds.), *Perspectives on Males and Singing*. (pp37-54). London: Springer.
- Welch, G.F., Sergeant, D.C., & White, P. (1997). Age, sex and vocal task as factors in singing 'in-tune' during the first years of schooling. *Bulletin of the Council for Research in Music Education*, 133, 153-160.
- Whidden, C. (2009). *The adult non-singer: connection, context and culture*. Unpublished PhD Thesis, Department of Music, University of Calgary. [Whidden, C. (2009). [Available from ProQuest Dissertations and Theses. NR49638]
- Winstone, N., & Witherspoon, K. (2016). 'It's all about our great Queen: The British National Anthem and national identity in 8-10-year-old children. *Psychology of Music*. 44(2), 263-277. doi: 10.1177/0305735614565831
- Wise, K. (2015). Defining and Explaining Singing Difficulties in Adults. In G. Welch, D. M. Howard & J. Nix (Eds). *The Oxford Handbook of Singing*. New York: Oxford University Press. DOI: 10.1093/oxfordhb/9780199660773.013.38
- Wise, K. J., & Sloboda, J. A. (2008). Establishing an empirical profile of self-defined tone deafness: Perception, singing performance and self-assessment. *Musicae Scientiae* 12, 3-26.
- Wu, Y-T. (2015). Musical environment and the development of young children of the Chinese diaspora in London. In: G. Lock & T. Selke (Eds). *Proceedings, The Changing Face of Music and Art Education, CFMAE-MERYC2015*, Tallinn, 5-9 May, 2015.
- Yang, Y., & Welch, G.F. (2014). Contemporary challenges in learning and teaching folk music in a higher education context: a case study of Hua'er music. *Music Education Research*, 16(2), 193-219. DOI: 10.1080/14613808.2013.878324