

This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.

Author(s): Salminen, Sanna

Title: Benefits of singing reflected in the conceptual framework of social inclusion

Year: 2020

Version: Accepted version (Final draft)

Copyright: © Libreria Musicale Italiana, 2020

Rights: In Copyright

Rights url: <http://rightsstatements.org/page/InC/1.0/?language=en>

Please cite the original version:

Salminen, S. (2020). Benefits of singing reflected in the conceptual framework of social inclusion. In J. van der Sandt (Ed.), *Singing With Children : International Perspectives* (pp. 97-108). Libreria Musicale Italiana. *Ars Musicalis. Musica, Musicologia e Didattica*, 3.

8. Benefits of singing reflected in the conceptual framework of social inclusion

Sanna Salminen

8.1 Introduction

How to live a long and happy life? Public media is full of different guidelines for special diets and workouts. Less attention has been given to the effects of cultural and artistic activities – especially music. However, the significance of various cultural activities to the growth of social inclusion and well-being have been reported in increasing amount in fields of research. For example, in Sweden they made a ten-year research already during the Eighties with over 10,000 participants about cultural activities as determinants for survival. The results showed that cultural activities have a positive correlation in life expectancy. Further research was suggested to find out more specifically for example the effects of choir singing (Bygren et al 1996). Singing – and especially singing together – has been noticed to promote happier and longer life with higher social capital (Hyypä et al 2006). In a medical research with 2000 participants it was found out that good friends are more important than not smoking, distrust is more dangerous than overweight and those who sing in a choir live longer (Hyypä 2002: 42). Especially in educating children it's of great importance to use singing as a method. In Finnish schools the system of extended music education has shown positive effects as well on the pupils' enjoyment at school (Eerola and Eerola 2014).

As a University teacher in music pedagogy and choir conductor I find myself often in situations where I need to stand for the meaning of music and music education. Music is often seen as something nice but not very important or useful. Some believe that music belongs exclusively to musically gifted people and is not worth while supporting from public funds. Some speak up in a beautiful way for the meaning of music but actions are contradictory because of economy-based reasoning. It is rarely understood that human values and good economical results could actually support each other. When I studied the meaning of musical hobby for South African disadvantaged young people in the years 2000-2003, the students saw very clearly their hobby as a way out from the circle of poverty that had been going on through generations (Salminen 2004). The results of this ethnographic research demanded deeper understanding about the dynamics that give a musical hobby such a positive power.

Finally, I discovered the concept of social inclusion that is capable of covering both mental and social perspectives on the dynamics behind these effects. In this article it is particularly interesting to reflect singing activities in the same conceptual framework because human voice is an instrument that is attainable for everyone. The description of social inclusion is here mostly adapted from the writings of Raivio and Karjalainen (2013) and closely related to the conceptualizing of well-being by Erik Allardt (1976).

Through singing activities, children and adolescents are provided with tools for dealing with emotions, empowerment, self-esteem, social skills, equality, community and agency – among many others. In this article, different dimensions of the relationship between singing, well-being and social inclusion are discussed.

8.2 Singing as innate human action

In western countries it has been widely believed that musicality is purely an innate tendency. For example, during the 20th century many teachers in Finland still aimed at finding the musically gifted out of the tuneless children (Lehtonen et al 2016). As a result of these actions it is very common to find people who claim that they are not able to sing or they are not musical. Anyway, many studies have showed that singing is a developing skill. For example, Numminen (2005) made her doctorate research on poor pitch singing adults who got singing lessons for 1,5 years. By the end of the research period every student was able to sing a song in tune at least when supported by piano or teacher's voice. If people believe that singing is not an attainable skill and that it is meant exclusively to specially skilled people the benefits that are possible to reach from singing activities will be out of their reach.

Many linguistic researchers consider singing a natural part of being a human being. They have found interesting possible combinations between prehistorical language and singing. Many suggest that probably there has first been some kind of emotional vocalization as means of communication before speech evolved. This vocalization had many elements that are in the core of singing, such as different tones, rhythms and the aim to communicate emotions. Vocalization was used to mark local bands – to distinguish 'us' from 'them' in order to create and control physical, social and psychological surroundings (Burling, 2007). It was an important tool in raising children: in infant directed speech, or 'motherese' one can notice same elements even today. The spoken language that people use as they are speaking to babies is almost like singing in the use of tone changes, higher pitches, longer vowels and the

use of rhythms. Voice can be used in creating bonds, feelings of safety and soothing the child (Mithen 2009; Burling 2007).

In addition to communicating emotions, singing has very probably served as a tool for creating social networks between people as well as helping to operate as a team since prehistorical times. As humans started to hunt together, the importance of social bonding and trust became more essential than before. Singing and dancing together served this purpose perfectly. There was also a growing need to feel and express emotions in order to make rational decisions. It's impossible to predict or understand the actions and behavior of another human without an idea of his emotions. Obviously, the same dynamics are present in attracting mates. Emotional vocalization can be considered as being of unquestioned importance in the evolution of humans. From such vocalization evolved two main lines: language for communicating cognitive messages and singing for communicating emotional messages (Mithen 2009: 68–70). Danish linguist Otto Jespersen has put this continuum into words: “[Love] inspired many of the first songs and through them was instrumental in bringing about human language” (Burling 2007: 124).

In examining human communication and bonding one could say that the main difference between the use of language and singing is that language organizes social action while music organizes sociality. One very special function for music that language can't reach, is that in situations of social uncertainty, for example in unresolved disagreements, singing may be the tool that offers an honest signal that can be interpreted individually. This paves the way for social bonding despite of discord. Participants can experience each other's intentions as mutually manifest (Cross and Woodruff 2009: 78–93). Emotional borders between people can be crossed through singing. “We can talk together because first we sang together” (Mithen 2009: 59). Singing can be seen as innate human action that everyone should be encouraged to use – not only ‘musically gifted’ people.

8.3 The effects of singing on social inclusion

What kind of benefits would we gain if singing was encouraged more widely? There has been plenty of studies around the concept of well-being and the positive effects that cultural and artistic activities have on it. In social policy the concept of social inclusion is closely related to well-being and used in decision-making processes. In the following chapter the relations between these two concepts and the effects of singing activities on social inclusion are reflected.

Allardt (1976) has divided the concept of well-being into three categories: having, loving and being. He noticed that concentrating on the level of need satisfaction instead of available resources or economic success describes the overall well-being of people in a more precise way. In this definition ‘having’ consists of factors that are affecting the standard of living like sufficient income, work, health and education, ‘loving’ tells about social relationships as well as belonging to communities and ‘being’ is formed of self-fulfillment and opportunities for influence (Allard 1976).

The Finnish National Institute for Health and Welfare is an expert organization providing research-based information on health and welfare for decision-making. The institute has promoted the model made by two researchers (Raivio and Karjalainen) in order to explain the concept of social inclusion. The researchers took the ideas of well-being from Allardt and reshaped them to fit the needs of decision-making in Finnish social policy (Terveyden ja hyvinvoinnin laitos 2019; Raivio and Karjalainen 2013). The contents of the original model figure, in this article, has been translated into English, and within the brackets some viewpoints from perspective of singing activities have been added. Cultural capital, creativity and self-expression are not mentioned in the original figure. The three main components: ‘acting’, ‘belonging’ and ‘having’ are discussed in more detail below.

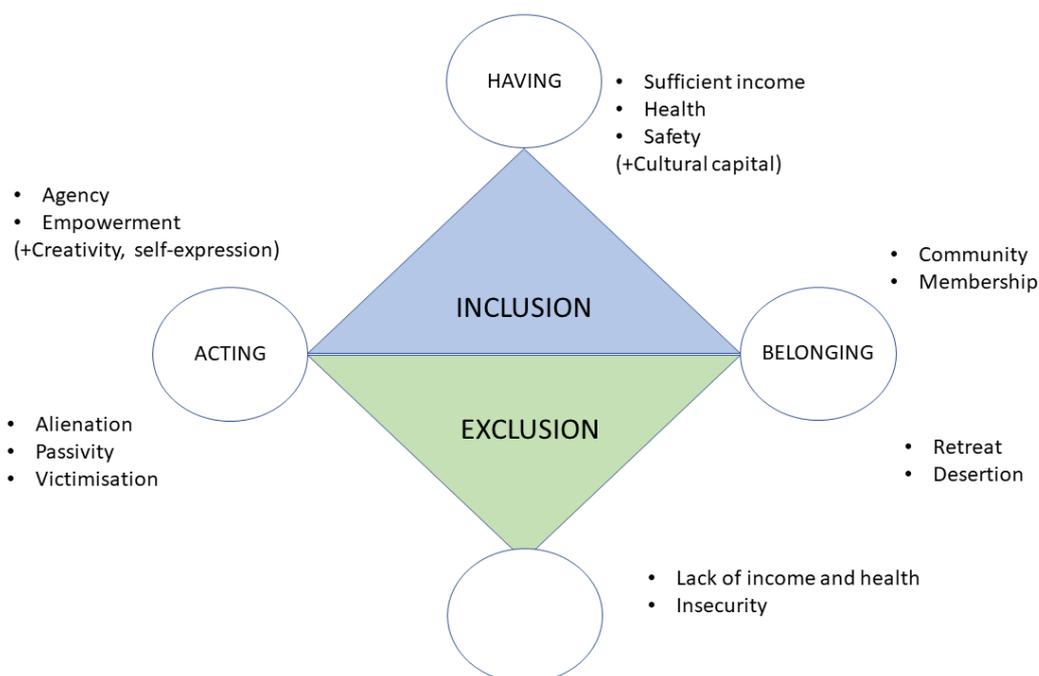


Figure 1: The components of social inclusion (Raivio and Karjalainen 2013: 17; Terveyden ja hyvinvoinnin laitos 2019).

The lay-out in Figure 1 has been divided into two sections: the upper section illustrates the components of social inclusion as the lower section represents the opposite, social exclusion. The categories taken from Allardt's conceptualizations of well-being, 'having, loving and being' are here re-transcribed into 'having, belonging and acting'. 'Having' refers to every human's need to have sufficient income, basic health and safe life. 'Belonging' replaces Allardt's 'loving' and emphasizes the importance of social networks, communities and social capital in building trust, acceptance and protection from criminality and other phenomena of disorganization. 'Acting' replaces Allardt's concept of 'being' and emphasizes the effects of agency and empowerment on increasing social inclusion. Ignoring those elements can lead into social exclusion: alienation, passivity, victimization, retreat, desertion, insecurity and lack of income and health.

Many studies dealing with singing show results that can be connected with this figure. Singing activities can be construed as enhancing social inclusion.

8.3.1 Singing and 'acting'

In the conceptualizing by Raivio and Karjalainen (2013: 17) 'acting' illustrates the agency and empowerment of an individual. Agency is at the same time a very elusive, underspecified concept and one of the core concepts in sociology. Key questions on the field are, for example, the relationships between individual agency and objective structures, the temporality and relationality of agency, should agency be measured with quality or quantity and is agency a variable or fundamental human capacity. Widely discussed also are the concepts self, self-efficacy and self-reflectivity in relation to agency (Honkasalo et al 2014; Kristiansen 2014; Hitlin and Glen 2007). Kristiansen (2014: 15) defines agency as "The individual's belief in his or her ability to influence his or her life course". Because of relational and structure-dependent nature of agency, 'acting' as a factor of social inclusion is inseparable from 'belonging' and 'having'.

Empowerment overlaps the concepts of autonomy, self-direction, self-confidence and self-worth. A growing amount of linkages have been found between development effectiveness and empowerment at both the individual level and society-wide. Empowerment can be seen as a product of the interaction between agency and the opportunity structure (Narayan 2005: 3, 6).

Singing activities may significantly develop the qualities needed in building one's agency and empowerment, qualities that support the growth of children into well-being

adults. Learning music starts already in pre-natal period and forms the brains of a child positively. Music supports neurocognitive development, hearing skills, pronunciation skills, listening skills and motor functions. Singing activates brain areas that are connected with processing sounds and languages even more than speech. Children who have music as a hobby for example often learn to read earlier than their peers (Tervaniemi 2017: 223–226). Singing can be compared to the effects of mindfulness as a stress releasing method. When singing, you need to control your breathing: exhalation activates the vagus nerve that releases the speed of heartbeat whereas inhalation accelerates the pulse. Singing in a choir has been reported to relax the physiology of participants (Vickhoff et al 2013; Baer et al 2006). In the research interviews conducted in many different countries by Jukka Louhivuori (2018) almost every chorister told feeling relaxed and energetic after choir rehearsals.

The importance of music is especially substantial in adolescence which is an essential phase in identity formation. Music supports gaining self-knowledge and forming identity through identification processes. Many youngsters use music as a tool for fortifying and releasing emotions and controlling inner impulses. Through musical hobbies one may get experiences of succeeding, learning, knowing and capability which are prize factors for growing self-esteem (Saarikallio 2009: 21–22). Already in the 90's Kauhanen (1993) found out in his doctoral research in medicine that the skills of controlling emotions outweigh diets in prevention of vascular and heart diseases.

Even greater weight could be given on the effects of flow-experiences. In musical activities, the surroundings are optimal for flow-experiences to take place: challenge and reward are gained simultaneously when striving to learn or perform a new piece – not to mention improvising and creating new music. Music offers cognitive challenge tied up with emotional pleasure. Joint rules during musical activities channel psychic energy, goals demand concentration and feedback together with the belonging to a greater ensemble release from self-observation. In flow-experience the sense of time and space disappears and one feels total embeddedness, concentration is comprehensive. These experiences build stable mental structures that protect the individual later in life when facing hardships or times of crisis (Csikszentmihalyi and Larson 1984: 249–262).

Eerola (2016) and his research group noticed that there is a connection between experiencing moving sadness – enjoying sad music intensively – and high trait empathy. Vice versa, it could be questioned if the skills of empathy could be increased through music. On the whole music and singing activities nurture qualities that benefit agency and

empowerment: these include emotion regulation and stress release, neurocognitive development and cognitive skills, language skills, self-knowledge, self-esteem and tools for self-expression.

8.3.2 Singing and 'belonging'

The concept of social capital is often used to refer to social networks, norms and trust that promote the interaction and co-operation between the members of a society. Social capital enhances the well-being of a community as well as the possibilities of individuals to reach their ambitions. Social participation is a crucial factor in increasing social capital. It helps people to understand their dependence on each other and be empathetic; trust, communicate and get information. In the end social capital has positive effects also on health and overall quality of life as well as on finances. Singing together enhances social capital and can be seen as a noteworthy factor in fortifying 'belonging' in social inclusion (Hyypä 2011; Hyypä et al 2006; 2001; Ruuskanen 2002).

As mentioned above, singing has served the needs of bonding, co-operating and communicating since pre-historical times. Singing is the language of emotions and has been an essential skill in building human communities. Singing together is social participation, which creates relationships and trust in each other, operations and achieving goals (Mithen 2009; Burling 2007; Ruuskanen 2002). In recent research it has also been noticed that singing together makes social bonding faster and creates closeness between participants (Pearce et al 2015). Singing together builds group identity and maintains the feeling of shared goals and acting as a unit. In a way one starts to feel equality with the persons who are singing together. Even though the other person would come from a different social class, in choir everyone is equal. A choir may be the most important social group in one's life and its significance is especially emphasized in elderly age (Louhivuori et al 2005). Moreover, senior aged choir singers experience their health being better than other senior citizens who are actively taking part in cultural and sport activities (Johnson et al 2017).

In 2005, in South Africa, there was a project run by a major bank company, Absa, to support teambuilding and interaction between staff members representing many different cultures, age and language groups during a merger. They organized an internal choral festival, and the results were encouraging. Choral singing provided shared communicative experiences for people who couldn't speak each other's language (Van As 2009). Numerous personnel choirs have been established worldwide in order to strengthen team spirit but it

would be very interesting – albeit challenging – to study whether these activities also have had an effect to the financial success of companies.

After the financial depression in Finland in the 90's there was a program called MUKAVA that re-established club activities at schools. Riitta-Leena Metsäpelto and Lea Pulkkinen (2011) collected data from the children who participated in different clubs. The results showed that taking part in a music club contributed to school achievement, perseverance, concentration and social skills. In comparison, participation for example in sport clubs didn't have direct link to increasement in social skills. Possibly one explanation to these dynamics could be the lack of competition in making music together. One important factor promoting the development of social skills was a high-quality adult guidance (Metsäpelto et al 2011: 163–164).

Kirschner and Tomasello have studied the effects of joint music making on the social behavior of four-year old children. They had two kinds of activity groups: one group of children played games with musical elements (songs, rhythms, etc.) and the other group had the same activities but without the musical elements. Afterwards the children were given specific tasks. Those children who took part in musical activities were more often willing to help their peers and choose to do their job preferably with another child than alone (Kirschner and Tomasello 2010).

When we sing together, we share the same rhythm, same breathing speed, same pulse, same emotional stories and same vibrations of sounds. When we sing together, we start to believe that we are on the same side, equal, willing to help and understand each other. Singing is a powerful tool in creating 'belonging'.

8.3.3 Singing and 'having'

Biasing on the factors of 'acting' and 'belonging' lead to the increasement of 'having'. The stronger networks, communities, social capital, empowerment and agency, the better possibilities of 'having' health, safety and income. On the other hand, retreat, desertion, alienation, passivity and victimization may lead to lack of income, poor health and feeling of insecurity. Singing activities are noteworthy ways in enhancing social inclusion.

Music and singing offer tools for mood regulation, thus promoting better health (Saarikallio 2007). In the studies of Hyypä et al (2006) and Bygren et al (1996) it was noticed that singing in a choir correlates positively with life expectancy. Senior citizens who sing in a choir report themselves feeling better in health than people in control group (Johnson et al

2017). Analysis of blood samples taken from choir singers showed that the content of hormones protecting from stress had increased during the singing activities (Kreutz et al 2004). Singing promotes health strongly.

Music has proved to be beneficial as well in the neurological rehabilitation of people having dementia, Parkinson's disease, epilepsy, stroke and multiple sclerosis. Music-based interventions, such as singing, playing and listening to music have positively affected on neural plasticity, cognitive functions such as memory and attention, language functions, motor functions, mood and quality of life. A singing-based speech therapy has also improved the speech of people suffering from chronic aphasia (Sihvonen et al 2017: 648–658).

Mastering your voice is intrinsically an important capital that can be made of good use in labor markets. Musical skills in general could be included in cultural capital. Music is a natural tool in overlapping cultural boundaries and creating understanding (Moisala and Antikainen 1995). One could even say that in music and songs some shared emotional memories of humans, living in a specific area, are stored. Through music you can get an idea of the original emotional landscape. Awareness of different musics is cultural capital that one can use in international affairs for creating understanding, bonding and equality. In a study made in South African STTEP-music school the students told even believing that a musical hobby reduces the motivation to be involved in crime (van Niekerk and Salminen 2008; Salminen 2004). We don't know yet if music really increases safety but what we know for sure, is that it has been used very widely in that purpose.

An important factor of 'having' especially for children and youth is the quality of education. Eerola and Eerola (2014) tested in ten different Finnish schools whether music education could create social benefits in school environment. Some groups belonged to the extended music curricula classes and others to normal classes. In a follow-up study the results were still compared to other classes with extended curriculum (sports or visual arts). The results showed that extended music education enhances the quality of school life, especially in satisfaction about the school and a sense of achievement and opportunity (Eerola and Eerola 2014). Success at school helps as well to reach a better income career later in life.

8.4 Conclusions

The studies on the effects of singing from psychological and social perspectives, as shown in previous chapters, support the idea of singing as enhancing social inclusion. In the discussion dealing with well-being it is fundamental to take singing into account as an important tool

and possibility – not only as something ‘nice’. Singing provides unique opportunities to create social bonding, understanding and co-operation: singing builds up communities and hence strengthens the ‘belonging’ of individuals. Therefore, it is no wonder that singing has appeared since pre-historical times as an essential factor of being human. Singing activities could be used much more efficiently for instance in team building, stress-release, therapy, education, parenting and intercultural co-operation. There are already encouraging examples of companies and schools that have invested in singing activities in many countries. Many institutions could, with a relatively minor effort, provide natural surroundings for community singing: hospitals, health centers, libraries, parks, churches, shopping centers – just to mention a few. Through better social inclusion it is possible to get better economic growth – but more importantly, well-being for people.

All music educators can be encouraged from knowing that children who join extended music education enjoy going to school more than their peers and they also have a better sense of achievement and opportunity. Or that the social skills of children joining music clubs improve and after participating in musical activities they are more willing to help one another and co-operate, as stated in paragraphs 8.3.2 and 8.3.3. Nevertheless, the question and challenge for the future could be, how to use singing as a tool to reach these possibilities more effectively? What kind of pedagogical choices and practices would support the growth of social inclusion and well-being? There are many examples where singing activities have led to exactly opposite direction and children have learned to believe that they are unmusical and it’s better for them to stop singing completely. These false beliefs are harmful both for the development of the child and the well-being of the whole society. A remarkable Finnish music pedagogue Siukonen criticized the teacher training seminars already in the 1930’s for not paying enough attention on the significance of music in developing emotional skills and artistic expression but putting the weight only on flawless intonation and music reading skills. (Lehtonen et al 2016). Many children grew up unmotivated to sing or express themselves through music. As we have learned, expressing emotions is in the very core of singing and intonation followed much later in history. Wider awareness and appreciation of the possibilities that singing activities offer could encourage the development of pedagogical practices and additional research. Musicality is a developing skill, and the well-being that singing brings belongs to everyone.

References

- Allardt, E. (1976). *Hyvinvoinnin ulottuvuuksia*. Helsinki: WSOY.
- Baer, R.A., Smith, G.T., Hopkins, J., Krietemeyer, J. and Toney, L. (2006). 'Using Self-report Assessment Methods to Explore Facets of Mindfulness'. *Assessment* 13(1): 27–45.
- Beck, R.J., Cesario, T.C., Yousefi, A. and Enamoto, H. (2000). 'Choral Singing, Performance Perception, and Immune System Changes in Salivary Immunoglobulin A and Cortisol'. *Music Perception* 18(1): 87–106.
- Burling, R. (2007). *The Talking Ape: How Language Evolved*. Oxford and New York: Oxford University Press.
- Bygren, L.O., Konlaan, B.B. and Johansson, S.E. (1996). 'Attendance at Cultural Events, Reading Books or Periodicals, and Making Music or Singing in a Choir as Determinants for Survival: Swedish Interview Survey of Living Conditions'. *British Medical Journal* 313(7072): 1577–1580.
- Cross, I. and Woodruff, G.E. (2009). 'Music as a Communicative Medium'. In R. Botha and C. Knight (eds), *The Prehistory of Language*, 77–98. Oxford and New York: Oxford University Press.
- Csikszentmihalyi, M. and Larson, R. (1984). *Being Adolescent: Conflict and Growth in the Teenage Years*. USA: Basic Books.
- Eerola, P.-S. and Eerola, T. (2014). 'Extended Music Education Enhances the Quality of School Life'. *Music Education Research* 16(1): 88–104.
- Eerola, T., Vuoskoski, J.K. and Kautiainen, H. (2016). 'Being Moved by Unfamiliar Sad Music Is Associated with High Empathy'. *Frontiers in Psychology* 7(1176). Retrieved from: <https://www.frontiersin.org/articles/10.3389/fpsyg.2016.01176/full>
- Hitlin, S., Glen and Elder, H. Jr. (2007). 'Time, Self, and the Curiously Abstract Concept of Agency'. *Sociological Theory* 25(2): 170–191.
- Honkasalo, M.-L., Ketokivi, K. and Leppo, A. (2014). 'Moniselitteinen ja hämärä toimijuus'. *Sosiologia* 51(4): 365–372.
- Hyypä, M.T. and Mäki, J. (2001). 'Individual-Level Relationships between Social Capital and Self-Related Health in a Bilingual Community'. *Preventive Medicine* 32: 148–155.
- Hyypä, M.T. (2002). 'Kuurossa elämä pitenee. Sosiaalinen pääoma ja terveys'. In P. Ruuskanen (ed), *Sosiaalinen pääoma ja hyvinvointi. Näkökulmia sosiaali- ja terveysaloille*. Jyväskylä: PS-kustannus.

- Hyypä, M.T., Mäki, J., Impivaara, O. and Aromaa, A. (2006). 'Leisure Participation Predicts Survival: A Population-based Study in Finland'. *Health Promotion International* 21(1): 5–12.
- Hyypä, M.T. (2011) 'Elinvoimaa yhteisöstä'. *Tieteessä tapahtuu* 29(8):15–17.
- Johnson, J.K., Louhivuori, J. and Siljander, E. (2017). 'Comparison of Well-being of Older Adult Choir Singers and the General Population in Finland: A Case-control Study'. *Musicae Scientiae* 21(2): 178–194.
- Kirschner, S. and Tomasello, M. (2010). 'Joint Music Making Promotes Prosocial Behavior in 4-year-old Children'. *Evolution and Human Behavior* 31: 354–364.
- Kreutz, G., Bongard, S., Rohrman, S., Hodapp, V. and Grebe, D. (2004). 'Effects of Choir Singing or Listening on Secretory Immunoglobulin A, Cortisol, and Emotional State'. *Journal of Behavioral Medicine* 27(6): 623–635.
- Kristiansen, M.H. (2014). 'Agency as an Empirical Concept: An Assessment of Theory and Operationalization'. Netherlands Interdisciplinary Demographic Institute, Working Paper no. 2014/9. Retrieved from:
<https://www.nidi.nl/shared/content/output/papers/nidi-wp-2014-09.pdf>
- Louhivuori, J., Salminen, V.-M. and Lebaka, E. (2005). 'Singing Together: A Crosscultural Approach to the Meaning of Choirs as a Community'. In P. Campbell, J. Drummond, P. Dunbar-Hall, K. Howard, H. Schippers and T. Wiggins (eds), *Cultural Diversity in Music Education: Directions and Challenges for the 21st Century*. Brisbane: Australian Academic Press.
- Louhivuori, J. (2018). 'Kuorolaulusta hyvinvointia ja terveyttä elämään – totta vai tarua?'. In P. Järvinen, L. Kuitunen, S. Salminen, P. Kosonen, E. Leppänen, and M. Manner (eds), *Vox Aurea 50 vuotta. Yhteinen laulumme*. Jyväskylä: Atena Kustannus Oy.
- Lehtonen, K., Juvonen, A. and Ruismäki, H. (2016). 'Musiikkirajoitteisuus sukupolvien välisenä siirtotaakkana'. *Musiikkikasvatus* 19(1): 29–42.
- Metsäpelto, R.-L., Pulkkinen, L. and Tolvanen, A. (2010). 'A School-based Intervention Program as a Context for Promoting Socioemotional Development in Children'. *European Journal of Psychology of Education* 25: 381–398.
- Metsäpelto, R.-L. and Pulkkinen, L. (2011). "'Aika kuluu nopeasti ja on ollut hauskaa": Kerho ja harrastustoiminta koulussa'. In T.K. Pohjola (toim.), *Uusi Koulu: Oppiminen mediakulttuurin aikakaudella*, 157–168. Jyväskylä: Jyväskylän yliopistopaino.

- Mithen, S. (2009). 'Holistic Communication and the Co-evolution of Language and Music: Resurrecting an Old Idea. In R. Botha and C. Knight (eds), *The Prehistory of Language.*, 58–76. Oxford and New York: Oxford University Press.
- Moisala, P.M. and Antikainen, P. (1995). *Musiikkitunteja maailmalta. Monikulttuurisia kohtaamisia.* Helsinki: Sibelius Academy.
- Narayan, D. (2005). 'Conceptual Framework and Methodological Challenges'. In D. Narayan (ed), *Measuring Empowerment: Cross-disciplinary Perspectives*, 3–38. Washington, DC: The World Bank.
- Numminen, A. (2005). *Laulutaidottomasta kehittyväksi laulajaksi: Tutkimus aikuisen laulutaidon lukoista ja niiden aukaisemisesta.* Helsinki: Sibelius Academy.
- Pearce, E., Launay, J. and R.I.M. Dunbar (2015). 'The Ice-breaker Effect: Singing Mediates Fast Social Bonding'. *Royal Society Open Science* 2(10). Retrieved from: <https://royalsocietypublishing.org/doi/full/10.1098/rsos.150221>
- Raivio, H. and Karjalainen, J. (2013). 'Osallisuus ei ole keino tai väline, palvelut ovat!'. In T. Era (toim.), *Osallisuus - oikeutta vai pakkoa?*, 12–34. Jyväskylä: Jyväskylän ammattikorkeakoulun kirjasto.
- Ruuskanen, P. (2002). *Sosiaalinen pääoma ja hyvinvointi. Näkökulmia sosiaali- ja terveysaloille.* Jyväskylä: PS-kustannus.
- Saarikallio, S. (2007). *Music as Mood Regulation in Adolescence.* Jyväskylä: University of Jyväskylä.
- Saarikallio, S. (2009). 'Musiikki ja nuoren psykososiaalinen kehitys'. In J. Louhivuori, P. Paananen and L. Väkevä (toim.), *Musiikkikasvatus: Näkökulmia kasvatukseen, opetukseen ja tutkimukseen*, 221–231. Jyväskylä: Atena.
- Salminen, S. [née Kivinen] (2004). "You can't do crime if you do music". *Soittoharrastuksen vaikutus eteläafrikkalaisen STTEP-musiikkikoulun oppilaiden elämäkuvaan.* Jyväskylä: University of Jyväskylä.
- Sihvonen, A.J., Särkämö, T., Leo, V., Tervaniemi, M., Altenmüller, E. and Soinila, S. (2017). 'Music-based Interventions in Neurological Rehabilitation'. *The Lancet Neurology* 16(8): 648–660.
- Tervaniemi, M. (2017). 'Music in Learning and Relearning: The Life-Span Approach'. *Psychomusicology: Music, Mind and Brain* 27(3): 223–226.

- Terveyden ja hyvinvoinnin laitos (2019). 'Osallisuuden osatekijät'. Retrieved from:
<https://thl.fi/fi/web/hyvinvointi-ja-terveyserot/eriarvoisuus/hyvinvointi/osallisuus/osallisuuden-osatekijat>
- Van As, A. (2009). *Choir Participation as Tool for Transformation and Teambuilding in a Corporate Environment: A Case Study within Absa Bank*. Pretoria: University of Pretoria.
- Van Niekerk, C. and Salminen, S. (2008). 'STTEPping in the Right Direction? Western Classical Music in an Orchestral Programme for Disadvantaged African Youth'. *Intercultural Education* 19(3): 191–202.
- Vergheze, J., Lipton, R.B., Katz, M.J., Hall, C.B., Derby, C.A., Kuslansky, G. et al (2003). 'Leisure Activities and the Risk of Dementia in the Elderly'. *The New England Journal of Medicine* 348(25): 2508–2516.
- Vickhoff, B., Malmgren, H., Åström, R., Nyberg, G., Ekström, S-R., Engwall, M., Snygg, J., Nilsson, M. and Jörnsten, R. (2013). 'Music Structure Determines Heart Rate Variability of Singers'. *Frontiers in Psychology* 4(334). Retried from:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3705176/>