

All together now – three evolutionary perks of singing

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Cranking out a tune cements our social networks. Julie/Flickr, CC BY-NC-SA

We're enjoying the one time of year when protests of "I can't sing!" are laid aside and we sing carols with others. For some this is a once-a-year special event; the rest of the year is left to the professionals to handle the singing (except, perhaps, some alone time in the shower or car).

Music – and singing in particular, as the oldest and only ubiquitous form of music creation – plays a central role in our lives and shared community experiences, and this has been true for every culture for as far back as we can trace our [human ancestors](#).

So does singing in a group provide specific and tangible benefits, or is it merely a curious ability that provides entertainment through creative expression?

This is a question currently of great interest to evolutionary theorists, linguists, psychologists and musicologists. The debate took off when psychologist [Steven Pinker](#) stated his opinion that music is a spandrel – a useless evolutionary by-product of another, useful, trait. In this case, he [suggested](#) that music is a spandrel of [language development](#), providing no advantage and serving no purpose.

There are strong links between music and language development, although there is no consensus on the actual nature of the relationship. [Arguments](#) include theories that:

- language developed from music
- music sprang from language
- they both developed from a proto-language that was musical in nature
- they developed concurrently.

A [strong body](#) of [research](#) conducted with choirs indicates that membership has many benefits to individual wellbeing and physical health. It is possible these effects are due to people – the singers – participating in something they enjoy doing. Or, there may be something more elemental taking place.

If these findings are viewed through an evolutionary lens, though, there

is compelling evidence that music making provided some very specific benefits for our ancestors. Specifically, there are three theories which have been proposed that, if true, may explain these effects while suggesting that group singing is still beneficial to all:

1. singing creates a shared emotional experience
2. singing increases social bonding
3. singing improves cognitive function.

Sing us a song, you're the hominid

Our hominid ancestors used music to create [shared emotional experiences](#). This would have been particularly important for early hominids struggling to survive, because emotions serve as a kind of "red flag" to our cognitive processing systems, signalling that something critical requires attention.

Emotions prioritise the many options that we may have at any given time, and reduces "data overload" from the bombardment of senses that we experience. Hominids, like many other primates, could have developed very small social groups, or even no social groups.

But the ability for a large group to work cooperatively together was more advantageous than individuals attempting to survive alone. In order to cooperate, individuals needed to subsume their individual priorities for action, and learn to delay gratification so that the good of the group could take precedence (such as forgoing eating or sleeping in order to build a shelter). Group singing likely provided a rewarding, positive activity where emotional empathy could be developed.

We know that interacting with music today is, for almost everyone, both an emotional and overwhelmingly positive experience. Music is also used to reinforce positive moods and manage negative moods.

Adolescents regularly use music as an effective [mood regulator](#).

Others put music to targeted purposes; many athletes use music to put them in a mood state that supports peak performance (and research shows it to be an [effective strategy](#)). Music's ability to change or reinforce a mood relies on the same principle of emotion contagion.

Social significance

Second, music engagement would likely have led to increased [pro-social behaviours](#). This would be supported by a shared [emotional state](#), which relies on empathic skills (empathy) to spread.

But music is also at the centre of where we first learn to be sociable – in the [mother-infant bond](#). Infants are mesmerised by their mothers' infant-directed singing. It is a communication tool between mother and infant, and is highly companionable in nature.

Listening to a mother sing has an immediate and profound impact on an infant's arousal and attention, including physical responses. These musical communications are highly effective despite the infant not understanding the linguistics involved. They are also universal; lullabies are recognisable as such in virtually [every culture](#) on Earth.

There are strong indications that group music making and [social behaviours](#) are still linked today. Individuals with [Williams Syndrome](#), in addition to profound cognitive deficits, are known for both their love of music and their incredible sociability.

Music therapy has been shown to reliably [improve social behaviours](#) in individuals on the autism spectrum. Choir members consistently report that [social bonds](#) are one of the primary benefits of choir membership.

More experimental studies indicate that instrumental jazz musicians use the [communication centres](#) of their brains when coordinating play, and that guitarists and even audience members experience synchronised brain waves when a duet is played (see video below).

Studies also show that musical interactions increase both [empathy](#) and [pro-social behaviours](#) in children.

Taken together, the evidence points to a strong link between co-creation of music and improved social bonding.

Getting ahead

Finally, evolutionary theorists argue that it was their musicality that allowed hominids to develop what is known as the "[social brain](#)", while others argue that the complex brain we enjoy today developed to keep track of large social networks. It may have been a bit of both.

By creating a shared emotional experience and increasing members' pro-social behaviours, group singing supported complex social networks. Tracking and managing complex social networks may have led to the development of the neocortex. This brain region supports the suite of abilities known as [executive function](#), which provide the skills necessary to make and implement long-term plans.

It also supports cognitive flexibility, which is a style of fluid cognition that allows humans to successfully pair concepts that don't generally go together, resulting in creative, insightful, and elegant ideas and solutions.

We already know that a positive mood state [supports](#) cognitive flexibility, while stress and anxiety act as [inhibitors](#). Co-creating music may support improved cognitive skills through other pathways as well, although these links have not been explored.

Of course all theories concerning the use of music by early hominid groups is conjecture, resting on the scant pieces of evidence the fossil record leaves us as well as what we know about our own musicality today. But the questions are important, because it can inform us about our own relationship to music.

If the theories outlined here are correct, it may benefit us both as individuals and as a community to normalise and promote [music](#) co-creation. Participating in singing ought to be more than a once-a-year activity.

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