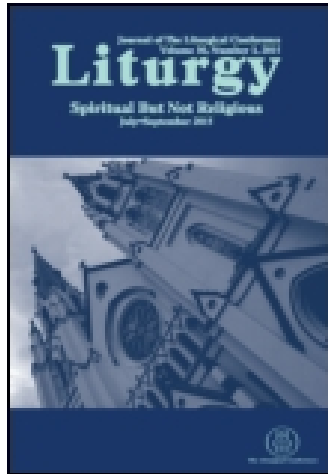


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A NOT-SO-UNIVERSAL LANGUAGE: WHAT NEUROSCIENCE CAN TEACH US ABOUT MUSIC STYLES IN WORSHIP

Tony Alonso

The phrase *music is a universal language* is invoked so frequently in conversations about the expressive power of song that it often passes without a second thought. And in the context of Christian worship, it is often invested with deeper theological meaning whenever music-making is presented as a uniquely unifying practice. Speaking of the Introductory Rites of the Roman Catholic Mass in their document *Sing the Lord*, the United States Conference of Catholic Bishops, for example, explains that because the rites themselves are designed to establish communion, it is appropriate that the assembly sing as a congregation so they may come together as one.¹ Transposed into a theological key, the phrase *music is a universal language* gives the impression that Christian music-making has the potential to create a Pentecost-like moment. Cutting across cultural, linguistic, and generational divisions, each person engaged in the practice hears and sings in the native language of the other. Like the crowd gathered at Pentecost, there *is* a deep way in which music in Christian worship often does have the power to leave us amazed.

Yet while many of us can testify to the kind of musical amazement that can emerge in moments when we have experienced a hymn's ability to unite an assembly into one grand choir of praise or lament before God, music-making in church can just as easily leave us perplexed. Any pastoral musician or liturgist who has experienced the diverse passions that the selection of a particular hymn or the use of a certain musical instrument can elicit among members of our assemblies knows that the multivalent way in which music is received is far from universal and can even be quite divisive. While we may agree that responding to the scriptural command to *sing a new song* is a central part of the way in which we sing the Christian story in our common prayer, rarely are we of one mind and heart about what that song should be, who should write it, what language it should be in, or what instruments, if any, should accompany it.

It is tempting to point to modern technological devices and the persistent and deepening commodification of music as the sole causes of intense debates over music in Christian worship. But to merely dismiss personal

expressions of musical preferences as reflections of contemporary individualism is to ignore the complex ways in which music functions in our lives and in the lives of our communities. Further, polemics as early as the fourth century reveal that passionate debates about music in Christian practice are not all that new. In the fourth century, Arnobius wrote:

Was it for this that [God] sent souls, that as members of a holy and dignified race they practise here the arts of music and piping ... that in blowing on the tibia they puff out their cheeks, that they lead obscene songs, that they raise a great din with the clapping of scabella ... under the influence of which a multitude of other lascivious souls abandon themselves to bizarre movements of the body, dancing and singing, forming rings of dancers, and ultimately raising their buttocks and hips to sway with the rippling motion of their loins?²

Christian writers from Augustine to Anne Lamott have written about the bodily nature of music and its theological significance in their lives. And while contemporary forces sharpen musical debates, the profound emotional resonances of music-making, whether listening, playing, or singing, are part of its complex ability to forge bonds of profound unity *and* create passionate division. While it is crucial for those who prepare music for worship to be steeped in the foundational documents and repertoires of their tradition and to reflect on the unique demands of ritual song, these alone are often insufficient to understanding why musical preferences can be so deeply felt and divisive.

In this essay, I engage emerging work in neuroscience and music to deepen contemporary conversations about musical styles in worship. The past two decades have seen a flourishing of material from the field of neuroscience on the relationship between music and emotion. The terrain of contemporary conversations surrounding music and the mind are complex. Complicating any easy appropriation for scholars outside the field of neuroscience is that there are significant unresolved debates about the nature of emotion and its exact relationship to music. Despite the fact that it is difficult to grasp the expertise of neuroscientists and admitting that this brief essay will not do justice to the field in any significant way, I highlight four contributions from Daniel Levitin's recent translational work on the topic, *This Is Your Brain on Music*, to offer insight into the development of musical tastes. My goal is to explore the implications this work might have for pastors, musicians, and liturgists in their work of preparing music for worship across Christian denominations.

Musical Taste and the Mind

From the time we are born, we hear sounds that begin to shape us for years to come. Alexandra Lamont has discovered that even *before* birth, we have the ability to hear and remember music.³ In her studies, Lamont discovered that a year after children are born, they not only recognize but also demonstrate a preference for music to which they were exposed in the womb.⁴ Such findings are particularly significant because they contradict

the notion of “childhood amnesia,” a long-held belief that we cannot have any actual memories before the age of five because the brain remains undeveloped. Before the age of five, there are significant gaps in a child’s understanding, awareness, and memory. However, Lamont’s study reveals that there is something unique about music in relation to memory: both the prenatal and the newborn brain “are able to store [musical] memories and retrieve them over long periods of time.”⁵ While our preferences evolve and change as we continue to develop and we may even come to reject certain kinds of music later in life, we are inescapably influenced by music to which we are exposed as infants. By the age of two, we begin to demonstrate a clear preference for the music of our own culture.⁶

Second, Daniel Levitin provides confirmation for something many people know anecdotally: the music we enjoy as teenagers is often music to which we attach for a lifetime. There are several reasons why this age is so crucial in shaping musical taste. First, several studies reveal that the age of ten or eleven is a turning point for most children in which they begin to demonstrate a deeper interest in music, even if they had not previously.⁷ Second, because of the intense development that takes place in our teenage years as we experiment with new ideas and challenge decisions handed down to us from our parents, this time of our life tends to be intensely emotionally charged; we tend to remember things that have an emotional connection because “our amygdala and neurotransmitters act in concert to ‘tag’ the memories as something important.”⁸ While people often continue to acquire new musical tastes throughout their lives, musical taste is formed in most people by the age of eighteen. Third, in our teenage years, we begin to form social groups intentionally with people we want to be like or with whom we share common interests. Externalizing social bonds, our musical preferences become an important way in which we signal our individual and group identities. Fourth, while our brains develop and form new connections at a very rapid rate throughout adolescence, this slows down dramatically following our teenage years.

Perhaps the most important way this development continues throughout our lives is through the development of what Levitin calls “musical schemas,” which frame our understanding by informing our cognitive models and expectations. Nonmusical schemas are central to the way in which the brain processes standard situations, extracting things common to a variety of situations and providing a framework within which to place them.⁹ Our schemas shape our expectations of what we would expect to find in a particular situation as well as what elements are flexible. Our musical schemas are similar to our nonmusical schemas; their formation begins very early and is “elaborated, amended, and otherwise informed” every time we experience music.¹⁰ Not only do our schemas account for why certain sounds outside our culture may challenge our understanding or appreciation of particular types of music, they also demonstrate why, as we grow, we acquire a wider array of schemas for particular genres, styles, and eras.¹¹ Our musical schemas shape our musical preferences and understanding because they are the “system into which we place the elements and interpretations of an aesthetic object.”¹² Put very simply, as we mature, we tend to prefer music that is neither too simple nor too complex in relation to the musical schemas we have previously developed: “at a neural level, we need to be able to find a

few landmarks in order to invoke a cognitive schema.”¹³ Because each genre has a set of rules and forms that guide the expectations of the listener, knowing a genre is essentially learning to categorize a song as being a part of the genre.¹⁴ Pitch, rhythm, and timbre are the three elements that most significantly allow us to place a piece within a genre. When music is perceived as too predictable and without variation from other music we have heard, we find it simplistic and unchallenging.¹⁵ However, if we are unable to invoke a cognitive schema in order to sort out what is happening in a piece of music, we are similarly likely to find the music unsatisfying.

Finally, the melodies, rhythms, and timbres we prefer are often an extension of positive experiences we have had with particular songs and genres in the past. Indeed, the most common form of musical expression throughout history has been the love song precisely because it connects us in a vital way to the positive sensory experience of being in love.¹⁶ Like any sensory experience, safety and familiarity are key components to the way in which music carries positive emotional resonances. Because our experience of music often alters our mood and because we often identify music as a way in which we connect with something larger than ourselves, including the sacred, we are often reluctant to completely let our guard down to new music.¹⁷ The degree to which we develop a wider musical schema is often dependent upon the degree to which we are willing to venture beyond those schemas shaped by extrinsic forces. For many, these cognitive schemas will be determined quite early in life and are narrowly determined by exposure to a relatively limited repertoire.

Implications for Music in Christian Worship

In a book of reflections on the relationship between music and theology, Don Saliers writes about music as a living practice that is deeply bodily and intimately bound to our emotional lives. Reflecting on the theological significance of the ways in which music has potential to both shape and express our image of God, Saliers notes that controversies about music in Christian history emerge “precisely because music—played, sung, and heard—remains both emotionally powerful and yet mysteriously ephemeral, always passing away in linear time, yet always fusing past, future and present.”¹⁸ Attentiveness to the development of musical taste and the emotional resonances of music through the lens of neuroscience helps shed some limited but helpful light on this mysterious quality of music-making. It holds great potential for deepening contemporary conversations over musical styles in worship and, in particular, for helping to explain why such conversations can be so deeply felt and emotionally charged.

This reflection need not result in the dismissal of central liturgical principles, which must always guide musical discernment for common prayer. Yet to paraphrase the apostle Paul, if we speak in the tongues of rubrics and of documents, but do not have love, we risk sounding like a noisy gong or a clanging cymbal. Acknowledging the very human way in which musical tastes develop and the vulnerable emotional associations music has the ability to encode, will allow us to speak with greater love while simultaneously

creating a space for deeper theological questions. It challenges an uncritical assumption that the Spirit sings only through a particular genre or musical expression and instead opens us to the unexpected and perhaps even uncomfortable ways in which people hear God's voice in a wide variety of modes.

Practical Matters

I conclude with a cluster of practical conclusions to stimulate further reflection on the topic. First, the complex forces that conspire to shape musical taste should lead pastoral musicians to deeper humility and self-reflection about their own musical history. Because so much of advanced music education is dependent upon the intentional cultivation of particular musical schemas, it should caution professionally trained musicians from presuming others will take the same pleasure they do in music they have taken years to master and appreciate. While many church musicians see worship as an opportunity to expand musical schemas, this is often exclusively understood as expanding the schemas of others toward their own. When members of our assemblies request or even demand different musical expressions, it is tempting to point to a consumer-driven music marketplace that caters to individual preferences and the way in which individualized musical customization runs counter to the demands of our shared ritual song. However, in doing so, we ignore the ways in which our own musical tastes are shaped by those same forces.

Whether pastoral musicians are tempted to narrowly chase the winds of popular music on the one hand or preserve the cultural patrimony of a musical heritage on the other, neither stands above or outside the dynamics of the fragmentation of the contemporary music marketplace. Condemnations of shallow individualism accompanied by easy appeals to theology in order to advocate for the use of particular styles often serve to mask the personal preferences of the one who holds the power over such decisions. Admitting biases rather than claiming theological authority might be a helpful first step in acknowledging the ways in which God is speaking in and through our diverse musical fragments. For those musicians for whom expanding schemas is a priority, how might a consistent application of such a principle result in an invitation for them to expand their own as well, particularly reaching beyond the comfort of one's own training, past experiences, or culture?

Second, attentiveness to the development of musical taste from the first music to which we are exposed as infants to its strong solidification in our teenage years should make us suspicious of whether marketing musical repertoire toward a specific demographic is salutary or even possible. This work challenges Christian communities who assume they can successfully respond to diverse musical schemas in light of the way they vary not only among different age groups, but even among people within those groups dependent upon a complex constellation of factors. The cellist in the high school orchestra who enjoys listening to popular music with her friends and the mariachi music of her Mexican heritage surely has the potential to connect to the sacred through more than one musical genre. Indeed, many

of the arguments mounted in favor of particular styles by a person or a homogenous group of people do so at the expense of ignoring or downplaying the diversity of musical schemas present in the congregation. Further, Levitin's examination of the development of musical taste should cause us to reject the use of the terms *traditional* and *contemporary* to describe styles of music in worship—a use that persists not only in pastoral settings but in scholarly discourse as well. This unhelpful binary is not only musically inaccurate; it also ignores multivalent musical schemas, which do not fit neatly into such categories.¹⁹

Third, and closely related to my previous point, one of the most frequent motivations for using a particular style of music is a well-intentioned effort toward evangelization. For example, the worship committee hopes that replacing the organ with a praise band will better respond to the tastes of young people. Putting aside my aforementioned concern about whether the use of particular styles in worship based on preference is desirable or possible, attentiveness to the development of musical taste might find us asking a new question: Is the music of the praise band even reflecting the popular musical schema of the diverse young people toward which the worship committee seeks to direct their attention?

While the length and purpose of this brief essay does not permit a musical analysis as such, I would contend that much of contemporary praise and worship music used in Christian worship sounds less like the Top 40 and more like a popular musical schema from ten or twenty years in the past. Regardless of intention and without casting any judgment on the aesthetic quality of such music, it is possible that the adults who often hold the power in worship settings may be unknowingly masking a desire for music that reflects the comfortable musical schemas of their own teenage years. If musical evangelization in worship is a priority (an open question in itself), this work invites a deeper conversation about how such music might sound quite different than what is currently in the Christian mainstream if it is an authentic attempt to respond to the constantly shifting musical currents of American popular music. My own hunch is that many worship committees that embrace Christian praise music would object if music truly reflective of the most cutting-edge American popular music were to be adopted for Sunday morning worship. The lack of rap, reggae, country, and hip-hop music played and sung in most communities who use music to evangelize testifies to the often unspoken limits of such efforts. These limits are often as narrowly drawn as those who advocate for the exclusive use of Gregorian chant or the hymns of Charles Wesley.

Fourth, because the American church is increasingly diverse with a significant influx of immigrants from Latin America, Asia, and many other countries throughout the world, as communities respond musically to changing demographics, this work demands greater attentiveness to how musical taste is culturally formed. Too often, debates about musical style center on Western assumptions on all sides of the conversation. Indeed, when the words *contemporary* or *traditional* are invoked, they often come with a set of assumptions regarding whether the music will be accompanied by the organ or the guitar, a choir or a praise band. Despite deep divisions among “warring” camps, they share in common a tendency to cling to a very limited

musical repertoire of white Western men. A more profound engagement with the diverse cultures present in our communities will complicate such presuppositions.

Further, failing to attend to the cultural and musical mixing which takes place among diverse immigrants can mistakenly lead one to make broad assumptions about the musical preferences of a particular cultural group, which ignore demographic and regional differences as well as the way in which music will be received differently among different people and groups that share a common cultural heritage. Just as with the dominant culture, significant differences in musical styles and repertoires are present based on age, denomination, and a wide variety of other factors.

Finally, because the melodies, rhythms, and timbres we prefer are often an extension of positive experiences we have had with particular songs and genres in the past, whether or not it changes the appropriateness of a particular piece of music for worship, taking seriously the strong emotional resonances of music will help those who prepare music for worship to be more charitable in responding to even the most obscure requests from members of our communities at some of the most emotionally charged moments of their lives, such as marrying a partner or burying a parent. And when someone expresses deep disdain for a hymn we have chosen, it might evoke in us a pastoral response, which internally acknowledges the complex emotional connections working below the level of conscious discourse of which we, and they, may never be aware.

Conclusion

While music-making within and outside worship is a powerful Christian practice that uniquely allows us to express our praise and lament at full stretch before God, it rarely has the ability to create unity where none has previously existed. Music, like much of our theology, without self-emptying love for those who are most different from ourselves, can indeed be a quite divisive language. Emphasizing the love of Christ that transcends all divisions might challenge us to embrace the way the Spirit is singing through the favorite hymn of the person next to us or across the world from us. Bound together in that love, we can place less of the burden on music to create unity and more trust in the One who sings us into being and in turn invites us to sing our lives to God and to one another in psalms, hymns, and spiritual songs.

Tony Alonso is a composer of liturgical music and a PhD student in the Graduate Division of Religion at Emory University in Atlanta, Georgia.

Notes

1. United States Conference of Catholic Bishops, *Sing to the Lord: Music in Divine Worship* (Washington, DC: United States Conference of Catholic Bishops, 2007), 140.

2. James McKinnon, ed., *Music in Early Christian Literature* (Cambridge: Cambridge University Press, 1989), 49.
3. A. M. Lamont, "Infants' Preferences for Familiar and Unfamiliar Music: A Socio-Cultural Study" (paper read at Society for Music Perception and Cognition at Kingston, Ontario, 9 August 2001), cited in Daniel J. Levitin, *This Is Your Brain on Music: The Science of a Human Obsession* (New York: Plume, 2007), 223–225.
4. In Lamont's study, she exposed babies to pieces of music chosen by the mother while still in the womb. From birth until the child's first birthday, the baby was not exposed to the same music. Over one year later, all of the babies displayed significant preferences for the pieces they heard in the womb over similar pieces to which they had never been exposed. A control group tested with the same set of pieces displayed no clear preference.
5. Lamont, "Infants' Preferences," 227.
6. *Ibid.*, 230.
7. *Ibid.*, 231. This does not exclude the fact that some children take an interest far earlier; however, many children take relatively little *intentional* interest in music before this age.
8. *Ibid.*
9. *Ibid.*, 116.
10. *Ibid.*
11. Another helpful phrase for better understanding "musical schemas" might be "musical expectations."
12. Levitin, *This Is Your Brain on Music*, 234.
13. *Ibid.*, 237.
14. *Ibid.*, 239–240.
15. *Ibid.*, 234.
16. *Ibid.*, 246.
17. *Ibid.*, 243.
18. Don E. Saliers, *Music and Theology* (Nashville, TN: Abingdon Press, 2007), 17.
19. For example, the music of sacred classical composer Arvo Pärt is deeply contemporary but would likely not be identified as such in this distinction. Even the most basic interrogation of what one means by these terms reveals how unhelpful they are to moving the conversation forward in any substantive way. This was made powerfully evident to me when a teenager recently told me she loved traditional Roman Catholic music like "On Eagle's Wings," a song composed by The Rev. Jan Michael Joncas in the late 1970s.