Echoes of the past reverberate in our lives today, say Northwestern musicologists. Their scholarship reveals what our relationship with music says about cognition and culture.

“Music is not a thing at all, but an activity, something that people do. The apparent thing ‘music’ is a figment, an abstraction of the action.” — Christopher Small

**Vasili Byros**, music theory and cognition, holds a half-century of classical performance in his hand.

“There are marked differences between a concert from the 1950s and one from the 1980s or 1990s,” he says, toggling between four distinct renditions of Beethoven’s Symphony No. 9 on an iPhone app.

A sense of urgency pervades the 1992 interpretation conducted by John Eliot Gardiner that differentiates it from versions by Fricsay (1958), Karajan (1962), and Bernstein (1979), all of which are included in the digital collaboration between Deutsche Grammophon and Touchpress.

The comparative showcase is intriguing to Byros, the coordinator of Northwestern’s Advanced Undergraduate Music Theory Curriculum at the Bienen School of Music. Bienen boasts a unique interdisciplinary approach to explore musical structure using historical, cultural, anthropological, and psychological frameworks. Byros researches historical compositional and listening practices, specifically the music of the long 18th century, from about 1685 to 1827. In doing so, he helps elucidate the complex intersection of music, memory, and identity.

Claims for music’s ability to spur cognitive benefit, such as neural plasticity and learning, are many and include the innovative studies of Nina Kraus, neurobiology and physiology. Similarly, Bienen colleagues such as **Richard Ashley**, music theory and cognition, also apply a cognitive science approach to musical communication and memory. Byros’ scholarship takes another focus — cultural — to examine how people engage with music.
Memory and cognition, though, are implicit elements of this work, as revealed in his research on Beethoven’s Symphony No. 3 (“Eroica”), which used corpus study in tandem with reception history. Between the two, he has discovered evidence of culturally specific and historically contingent knowledge structures — schemas — underlying the conception of tonality. Long part of philosophy and psychology, schemas are mental representations formed through repeated experience.

What Byros found was surprising.

Aesthetic preferences shift over time. Stravinsky’s infamous 1913 Paris premiere of “The Rite of Spring” created a scandal with its angular and unexpected sound. Today, the composition is an accepted part of the canon. But Byros’ research gets at a deeper, if related, aspect of musical perception: How we form a mental representation. “This case study shows that key perception is historically fluid,” says Byros. The reason for this fluidity, he adds, lies in the mental maps — schemas — we use to help create meaning. “This is where memory really comes into play. Musical schemas are patterns you hear over and over again, and through sheer redundancy we form a mental representation.”

Schemas also figure in Ashley’s research, although in a popular music context. Ashley’s scholarship has investigated the psychology of improvisation as well as how people remember music. His studies examine a central claim in musicology and experimental psychology, which contends that listeners process music moment by moment, being unable to stitch these parts into a comprehensive whole.

Ashley’s research suggests the truth may be more complicated.

In one study, he asked students to pick a popular song familiar to them and recall the structure of it in detail. Their ability to remember verse/chorus/bridge and other elements was impressive — about 72 percent accurate when compared against the original song. “That’s really high for incidental learning rather than focused learning,” says Ashley. It also indicated that people may be engaging with music in a way analogous to how they encounter language.

In fact, in a major corpus study, Ashley compiled the “musical grammar” of the annual Billboard songs from the past 20 years. These 200 songs yielded certain patterns over time — patterns that seem to inform how listeners remember the compositions.

“The Nashville guys who put these songs together are thinking about them structurally; your average listener is not,” says Ashley. “The listeners are not trying to learn these songs, just as they aren’t trying to learn primary grammar. My theory, which informs my current project, is that music as a ‘native language’ ought to work the way we understand spoken languages to work.”

More broadly, Ashley says that music highlights important cultural and social factors related to our collective memory. Memory is not just what is happening inside an individual’s head, he says. “It’s about interacting with communities of practise that serve as repertoires of knowledge. We’re a pack animal. A herd species.”

A Tricky Time Machine

In performance, says Byros, there’s a great deal of what we may call cultural memory on display. Starting in the 1960s, a movement to emphasize historical authenticity sought to curb modernist tendencies and instead encourage a return to the supposed true roots of what Bach or Beethoven, for instance, intended.

“You hear how the Gardiner is much faster paced,” says Byros, referring to the Deutsche Grammophon app. “That’s part of this movement to reconstruct the tempo at which Beethoven might have conducted the Ninth Symphony.”

Such attempts to authentically remember the past, though, are beset by challenges large and small. For example, even though Beethoven left behind metronome markings to indicate tempo, some scholars have argued that there are likely differences between today’s time-keeping devices and the ones the composer used. More formidably, perhaps, are instrumental challenges related to “authentically” recalling Bach — at least when performing his work on the modern piano.

“Bach composed on the harpsichord or organ,” says Byros. “These instruments, unlike today’s piano, are incapable of dynamic change through finger pressure. I think that for those seeking a truly authentic connection with the past, this dramatic reconceptualization is problematic.”

Memory is not just what I figure out; it’s what we all figure out together and what’s been culturally imparted to me through a range of means.”

That transmission, he adds, includes technologies and institutions — from radio stations to libraries to concert halls — that we may take for granted. “These layers may even seem invisible to us,” says Ashley. “But they are cultural sources of memory and transmission.”
Some of Byros’ students have tried to mitigate the problem by arguing that Bach would have “wanted” to compose on the modern piano; it just hadn’t been invented. But how far do you take that argument, asks Byros? “We might say that Bach wanted a Fender Stratocaster too, but try selling that to the Chicago Symphony Orchestra!”

“Memory is not just what I figure out; it’s what we all figure out together and what’s been culturally imparted to me through a range of means.” — Richard Ashley, music theory and cognition

A more profound consideration may be what this quixotic quest for performance authenticity — a relatively recent obsession — reveals about modern society. Byros says this “nostalgia for an imagined past” is especially strong in the classical music industry, which largely replicates a fixed body of work while eschewing new compositions. The classical masters would have found this curious, says Byros.

“In Leipzig, Bach basically wrote a new cantata for mass every Sunday,” he says. “New music was being created constantly. A provocative question, but one worth considering: Are we even doing music anymore, or is it just a kind of ritual? When Beethoven Nine is performed again today, is it just a kind of ritual?”

Many classical musicians do subscribe to a Werktreue aesthetic — replicating a work faithfully — for historical compositions, suggests Byros. This raises issues of identity that are fascinating and complex. “We’re often identifying with a different time and place, whether that means 18th-century Germanic string quartets or 20th-century Bebop idioms. Yet, can we ever really ‘speak the language of the past’ in an authentic way? I would argue that many musicians don’t think critically enough about our relationship to the past.”

Musicology continues to explore that past, and its connection to today, in part by examining the art’s intricate, sometimes abstruse, structures. At the same time, this scholarship offers insights into our relationship with this expressive form.

“Around World War I, there is this aching sense of cultural loss — a world gone away,” says Ashley. “One way of reading the music of people like Ravel and Mahler is that they embody this cultural fin de siècle sense. They respond to and lament the loss. They bear witness to it.”

Those struggles appear on a personal level, too: as in Beethoven, who famously lost his hearing and battled with suicidal thoughts. His music reflects his humanity and is itself a kind of overcoming even as he engaged with his demons through his art. For Bach, music also represented transcendence, with a more specific focus on the divine.

“Bach’s ‘Art of the Fugue,’ for instance, is about much more than music,” says Byros. “In its sheer complexity, it’s a testament to the greatness of the human mind. This is a man who dedicated himself not only to his craft, but also to what he believed his craft represented, which was an attempt to connect with the eternal.”

“Though music, you gain a richer understanding of what it means to be human, which is what the humanities are all about.” — Matt Golosinski

ORIGINS: Exploring the Journey of Discovery

FINDING STORY’S SAVING GRACE with Dan McAdams

“Let me tell you my life story” sounds like an unwelcome bit of late-night oversharing as the pub closes. But it’s precisely this kind of narrative that Northwestern’s Dan McAdams, psychology and education, relishes. He’s built an academic career around exploring the stories that people create to help shape their identity and potential.

As director of the Foley Center for the Study of Lives, a 20-year-old interdisciplinary research hub generously funded by the Foley Family of Milwaukee and residing within the School of Education and Social Policy, McAdams studies adult social and psychological development. He is the author of more than 200 scientific articles and chapters and six books — including The Redemptive Self (Oxford UP, 2005) and The Art and Science of Personality Development (Guilford, 2015) — which are informed by his investigation of how story and self interact to create “personal myths” in people’s lives.

A native of working-class Gary, Indiana, McAdams earned his bachelor’s degree from Christ College at Valparaiso University and a doctorate in psychology and social relations from Harvard University, studying with the eminent psychologist David McClelland and being inspired by “personal heroes” like Erik Erikson and Freud. When drilling down to the essentials in his own life story, McAdams can do so quickly and in a no-nonsense tone that recalls film noir. “There are two big parts of my life — the first 18 years growing up in Gary, and everything since,” he says. “The good part starts with Valpo.”