

Sabbatical Application Fall 2011

Brief description of proposal

I propose to study the neurological and other physiological effects of the human response to music and to develop a teaching module for use in Introductory Psychology courses. In addition, I will offer faculty and staff one or more seminars on the topic. All information, publications, and seminars will be available to faculty and staff within the college and district.

Background

Recently, my Introduction to Psychology class was studying how different structures of the brain are involved in behavior. We discussed many of their daily activities, such as driving, sleeping, and even studying for exams. Then one alert student asked, “How is music processed differently in the brain?” While I could address basic structural processing for such musical attributes as hearing and emotions, I was at a loss to discuss *why* music affects us so differently from regular speech or sound, and why—one might say—we are so addicted to it.

The science of psychology is no longer young; the first formal study of psychology started in the end of the 19th century. Today, psychology has branches in multiple areas of human behavior, including the study of how human behavior changes over a lifetime (developmental psychology), the study of the neurological underpinnings of human functioning (cognitive psychology), and the study of how behavior goes awry (abnormal psychology). Introductory psychology courses introduce these topics and more, in an effort to enable students to use psychology in their daily life and possibly inspire them to consider psychology study as a career.

Music, on the other hand, has been part of human life since before recorded time. Music, notes Paul Bloom (2010) is one of the “key areas of human interest and pleasure.” Today, one has only to walk into a store, turn on the TV, or watch a student studying to observe that music is ubiquitous. It is everywhere, and often not by accident. Marketers know that music affects what we buy and the length of time we spend in a store. For example, the fast-food store *7-Eleven* knew that blasting classical music would discourage teen loiterers outside their store (Eatock, 2010). Many of our students can’t live

without it. Popular culture is defined by music; it shapes viewers emotions and responses in films, is a topic of awards shows and outrageous fashion (witness Lady Gaga), and accompanies students via iPod or phones throughout their day.

Yet, oddly, introductory psychology books include little, or no, information on how music affects us (Bloom, 2010). This is probably because the study of music and cognition itself is relatively recent; it is only in the last 20 years that psychologists have begun to explore the basis for human musical response, with few publications before 1977 (Sacks, 2007). Previously, music research concentrated on the areas of musical acoustics (neural responses to rhythm and pitch), musical performance anxiety, and teaching music. Much is still unknown about the wider question of why we respond *differently* to music than to other forms of human communication.

Proposal

If granted a Sabbatical for the Fall 2011, I will study what is currently known about how music affects our behavior and develop a short teaching module to supplement any introductory psychology class and text. The module will include activities with contemporary relevance for students to apply immediately to their lives and, in so doing, better understand the basic neurology of human behavior as taught in an introductory psychology class.

I will also offer seminars to the psychology faculty and any other faculty on campus (or in the district, if anyone is interested) on this topic. Such a seminar can be in the form of a teaching seminar or an ongoing dialogue, as requested.

Personal Background

Before studying and earning degrees in psychology (MS in Counseling Psychology, PhD in Human and Organizational Development), I studied music. My BA degree is in Humanities, with an emphasis on 19th century Music and Art, and I have completed courses in Music at CSUN and graduate courses at UCSB, as part of a doctoral program in Musicology. I also taught piano performance and theory for nearly 20 years.

Methodology

My study of music and cognition will include but is not limited to the following arenas of study.

Readings. The following are an illustrative sample of current books, journals, and other sources reporting research on music and cognition. Some emphasize the mechanics of neural processing while others emphasize why we respond emotionally to music.

Books. Background books and recent publications include the following:

1. Deutsch, Diana (ed.). (1999). *The psychology of music* (2nd ed). San Diego: Academic Press.
2. Dowling, W. Jay, and Harwood, Dane L. (1986). *Music cognition*. San Diego: Academic Press.
3. Hallam, Cross, and Thaut (eds.) (2008). *The Oxford handbook of music psychology*. Oxford, England: Oxford University Press.
4. Levitan, Daniel J. (2006). *This is your brain on music: The science of a human obsession*. New York: Dutton.
5. Snyder, Bob (2000). *Music and memory: An introduction*. MIT, MA: MIT Press.
6. Thompson, William Forde (2009). *Music, thought, and feeling: Understanding the psychology of music*. Oxford: Oxford University Press.

Journals. Journals exploring music and cognition include the following:

1. *Journal of Music Perception: An interdisciplinary journal*. University of California Press, published 5 times annually.
2. *Psychology of Music*. Sage Publishers, published quarterly.
3. *Psychology of Aesthetics, Creativity, and the Arts*. American Psychological Association, Division 10, published quarterly.

Conferences. Several smaller conferences are scheduled throughout the country (and world) but the largest is the *Society for Music Perception and Cognition Conference*, August 11-14, 2011, in Rochester, New York. Summer 2009 conference topics included:

- Emotional and neural response dynamics depend on performance expression and listener experience

- Infancy: a musical history tour
- Affective and cognitive changes following prolonged exposure to music and speech
- Parallel acoustic cues in sad music and sad speech
- Congenital amusia is not a music-specific disorder: Evidence from speech perception
- Implicit and explicit memory for melodies in aging and cognitive impairment
- The obsessive song phenomenon: Induction, memory, and emotions
- Musical experience results in better speech-in-noise perception: behavioral and neurophysiological evidence

Professional organizations. The following are two of the most active; during the Sabbatical, I will explore other organizations and listservs as well.

- *The Society for Music Perception and Cognition* “is a not-for-profit organization for researchers and others interested in music perception and cognition. The objectives of SMPC are:
 - to further the scientific and scholarly understanding of music from a broad range of disciplines, including music theory, psychology, psychophysics, linguistics, neurology, neurophysiology, ethology, ethnomusicology, artificial intelligence, computer technology, physics and engineering;
 - to facilitate cooperation among scholars and scientists who are engaged in research in this interdisciplinary field; and
 - to advance education and public understanding of knowledge gained.”

(www.musicperception.org)
- *American Psychological Association, Division 10: Society for the Psychology of Aesthetics, Creativity, and the Arts.* This division of APA (of which I am already a member) “is committed to interdisciplinary scholarship, both theoretical and empirical, encompassing the visual arts, poetry, literature, music, and dance. Broadly conceived, we study three

interrelated topics: creativity (including developmental, motivational, affective, and cognitive processes), the arts (including aesthetic content, form, and function), and audience response to the arts (including preferences and judgments). To this end, we apply personality, clinical, cognitive, perceptual, cultural, and postmodern psychologies to diverse artists, styles, and epochs.” (<http://www.apa.org/about/division/div10.aspx>).

Courses. While some local universities (notably, UCLA) offer courses in music and cognition, the feasibility of a non-student enrolling in such a course is questionable. However, MIT offers the following graduate-level course lectures and notes online, available to anyone for self-study: *Music Perception and Cognition*, as taught in Spring 2009. The course includes the following topics:

- Overview of music’s sociological and psychological functions
- Pitch mechanisms and neurocomputational models
- Consonance, dissonance, and roughness
- Rhythm, timing, and expectation

Summary

This application is for a one-semester, Fall 2011 Sabbatical for the purpose of studying human neurological and physiological responses to music, for the purpose of enriching and engaging students in introductory psychology studies. The study will be accomplished by individual readings, professional memberships and journals, and attending at least one conference. Deliverables from the sabbatical will include a teaching module that can be integrated into any introductory psychology course, seminars on this information for faculty and staff, and a summary paper for the college President and District Board.

References

Bloom, Paul (2010). Why we like what we like. *The Observer (American Psychological Society)*, 23, 28.

Eatock, Colin (2010) . <http://www.3quarksdaily.com/3quarksdaily/2010/10/whats-wrong-with-classical-music.html#more>, retrieved 10/31/2010.

Sacks, Oliver (2007). *Musicophilia: Tales of music and the brain* (xiii). New York: Alfred A. Knopf, Inc.