Review

Tuning the Mind: Connecting Aesthetic Theory to Cognitive Science, by Ruth Katz and Ruth HaCohen. New Brunswick, NJ: Transaction, 2002.

Cognitive science is a relatively new discipline. Drawing on the metaphor of the mind as a computer (a metaphor that has entered popular culture only in the last half-century), cognitive science has paradoxically witnessed a rebirth of interest in psychology, since the main thrust of cognitive science in the last generation has been the attempt to provide a new answer to the mind-brain conundrum.

For modern thought, it is a question of whether the experience of music can shed light on this conundrum. In their book, *Tuning the Mind: Connecting Aesthetic Theory to Cognitive Science*, Ruth Katz and Ruth HaCohen show that this question of mind-brain relations has accompanied the development of music since the genesis of modern science. They further show that the deliberations concerning music constitute a high road to understanding the advance of theories regarding emotional affect and cognition. It is in this context that a theory came into being, one attentive to music as producing a range of affect differing from that produced by other artistic modalities.

Unlike the theories that view pictorial art as a paradigm for the experience of emotional interaction with the external world in early modern thought, this book argues that early modern thought actually created the conditions for the perception of music as a primary force, by means of which aesthetic experience should be understood. Thus, not only was music special; it was also paradigmatic.

Moreover, this new interpretation did not view music as a reflection of a higher Platonic realm. Instead, musical experience came to be viewed as creating its own, quasi-fictional world, one with its own temporal experience—a kind of fusion of narrative time and musical time. Music became an important source of several axioms, namely, that experience is internal, that its basis is temporal, that it is narrative, and that the distinction between truth and fiction is dynamic.

One of this book's merits is that it traces these developments to what it terms "a cognitive turn." On the one hand, this move on the part of the authors could be viewed as an attempt to recast an old question in contemporary language. In my opinion, however, something else can be learned from this book. In recent years I have taught courses about mind-brain relations in the nineteenth century. Many of the questions that were raised in nineteenth-century brain-science are still being asked today. However, questions concerning the connection between computational methods (which were already partially available in the nineteenth century) and models of the brain were not raised.

This book shows that the scope of cognitive science should be expanded beyond questions involving computational methods. In what way then can we use the term "cognitive" as distinct from the older usage of "epistemology?" What is the difference between a theory of knowledge and a theory of cognition? One of the achievements of

this book is to show that the antecedents of cognitive science reside in aesthetics and not in traditional epistemology. Indeed, the model of relations between the mind and the external world, as conceived in traditional epistemologies, hardly applies to music. Traditional epistemological theories, as they developed in early modern thought, were not capable of varying space-time determinations. Such variance, however, became an issue for aesthetics. Thus, the antecedents of cognitive science actually lay in the analysis of relations between the mind and the world that are not external, but emotional in a broader sense. This issue was obscured by the separation between a logic dealing with truth-relations, and a psychology dealing with emotional relations. In a world in which psychology as a distinct science did not exist, aesthetics constituted the arena in which such relations were surveyed. It follows that our own move from a logical to a cognitive model of mind-world relations can actually restore the emotions as a means of access to cognition. It is the roots of this major historical turning point that this book addresses.

One key issue highlighted by the book is that of the relationship between music and language. In the twentieth century, prevalent theories of cognition argued for language as a closed world of meaning, and for the primacy of that closed world in our experience of the external world. Almost unnoticed, the cognitive trend first expanded the concept of language, so that it could be included within brain-science as a model, and then subverted that very expansion, for a language of the brain does not really fit any theories that we have of language. This applies even to Chomsky, for whom language is an embedded capacity in the brain, but one we know little about.

How does this relate to music? The concept of language can be expanded to include music, as in the expression “the language of music.” But this language is unlike any language we speak, although they share several common traits. Language, for example, pays attention also to un-predicated signs, which in music are of prime importance. In other words, theories that base the experience of the world on pre-predicated meaning could gain force by turning to music. This is the way things developed after the Renaissance, precisely because music was invested with meaning that could not exhaust itself in a linguistic act, or be fully translated into such an act. Such a “language” requires, in fact, an expansion of the concepts of “grammar” and “syntax.” Indeed, music has developed its own grammar and syntax, which are not based on predications. The development of music thus suggests something important: namely, that there is a set of experiences that is, in our context, neither “hardware” nor “software,” because it is exhausted neither by biology nor by linguistic models. One way of conceiving this would be to agree with Ricoeur,[1] that the narrative impulse precedes the linguistic act.

It is hard to establish what that means, however, unless one concedes that pre-predicated experiences can hook up with each other without predications. To put it another way, let us assume that primitive men and women sang before they spoke. The transition between figurative art and speech is more difficult to conceive than the transition between music and speech. If this difficulty was ignored, it is because the musical experience is not solely a cognitive experience of the external world, but, rather, of the interaction between external and internal worlds.

[1] Paul Ricoeur (1913-2005), a French philosopher who combined phenomenology with hermeneutics, is considered to be one of the few intellectuals with a more than passing acquaintance with the three major intellectual milieus: French, German, and Anglo-American.

This primacy of music is not a historical primacy. Katz and HaCohen point out that modern art developed well before modern music. A historical sequence is, of course, not necessarily a cognitive sequence. For that matter, the experiences that we analyze today are often much more primitive than the experiences analyzed several centuries ago. The development of theories of art reflects this phenomenon well, since these theories, as they developed, placed an ever-greater emphasis on the purely perceptual element in artistic experience. As Katz and HaCohen indicate, it was this emphasis on pure perception that contributed to music being regarded as an art form superior to pictorial art, precisely because musical perception came to be perceived as a purer form of perception than visual perception.

Others will tell you how the book traces the interrelationships between literature, art, and music to show how theories of music and musical composition adopted and reflected outlooks imported from these other aesthetic domains. Surely, however, the story is one of how music became autonomous, by providing a purer form of expression of emotions than either literature or painting. The story is nonetheless a complex one, in that it started with the quest for a language of music akin to language or a music resembling art, and only later, once music became invested with ever more complex sets of meaning, could it sever itself from these relations. The reason that music was so tardy may be attributed, perhaps, to the fact that it was the last art form to emancipate itself from the notion that it reflected eternal ideas—precisely because it had fulfilled that function much better than the other arts.

Ut pictura poesis[2] does not mean that there is no purer form of aesthetic experience, but only that the idea that music constitutes a unique aesthetic experience was not automatically available. The argument here is that music first had to be turned into a cognitive experience before it could become an aesthetic experience. Indeed, modern aesthetic experience presupposes a cognitive experience (the connectivity of sensual data and mental operations, as they give rise to host of perceptual processes and dynamic forms) rather than resulting in one. In the same way, the modern view of emotions presupposes a cognitive motivation at their base. Music first became narrative and representation, and the new symbolic sphere that revealed itself became available, in turn, for abstraction. Again, history diverges from the cognitive effect, in that music was first conceived as a poetic impulse, and then poetry was turned into a kind of music.

A subsidiary argument of this book is that the autonomization of music was only possible in the context of secularization—a prerequisite for a secular musical culture. Or is it the other way around? Blumenberg[3] has argued that the decisive step in the transition to a secular culture was the formulation of the notion of human autonomy, and that this is what took place in the early modern period. Here, the argument is that the creation of independent spheres of meaning—like that of a piece of music, which created its own symbolic realm—was a necessary step in this secularization. In a religious world, all worlds of meaning necessarily connect or converge. The implication is that a secular

[2] This term, based on a phrase from Horatio's *Ars Poetica* (first century CE), meaning: "as in painting so in poetry," was used by many theoreticians and artists since the Renaissance and well into the Enlightenment to develop and defend the resemblance between poetry and painting, emphasizing the descriptive, figurative, and narrative aspects they share.

[3] Hans Blumenberg (1920-96) was a German philosopher who put much emphasis on the metaphorical basis of language as a source of truth and meaning. Among his well known books are *The Sorrow Crosses the River* and *Shipwreck with Spectator*.

world cannot be one in which meanings converge, though they may affect each other in ways similar to the interaction among the arts. Yet this elides the even more interesting question of whether secularization in the arts preceded other kinds of secularization. Art historians have tended to look at the Renaissance as a kind of secularization of art. However, in so doing they tend to separate between the themes of the paintings and the motives they attribute to them. Most Renaissance paintings are clearly on religious themes, thereby differing markedly from seventeenth-century Dutch art. Yet seventeenth-century Holland was not a secular society in our sense of the word. Then again, Timothy Tackett[4] has pointed out that most book titles published in France had religious titles until the 1770s. Here, the argument is that the secularization of music preceded this kind of popular secularization. The question to be investigated, therefore, is whether secularization begins in the aesthetic realm, with the secularization of the emotions—rather than concluding with them. Burckhardt[5] thought that secularization begins in the aesthetic realm, but he located that moment in the fifteenth century, and therefore paid no regard to the importance of music, even while imparting a particular interpretation to the art he surveyed as restoring antiquity. The advantage of this musical interpretation, apart from its location at the beginning of the eighteenth century, is that it does not require any dependence on antiquity, arguing instead for a complete break with older models. Again, this point is close to Blumenberg's, but Blumenberg's view was existential rather than cognitive or aesthetic.

This book thus views music as having the power to shift cognitive paradigms. Because of this, music can also affect culture. The usual explanation has been that music may affect culture. Yet we can speak of a shift in paradigm only after music and culture have been integrated. Thus, because music is cognitively independent, *Tuning the Mind* actually assigns to it the power of an independent variable. In fact, only as such could music have become historically effective. To my mind, this is a most interesting theory that requires further research, for it changes the way we think about historical conceptions concerning the interactions between cognition and the emotions, restoring to the aesthetic the place that has been conquered by psychology.

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[4] Timothy Tackett is an American historian at UCI, who specializes in the Old Regime and the French Revolution. His most recent book is *When the King Took Flight* (Harvard, 2003).

[5] Jacob Burckhardt (1818-97) was a Swiss historian of art and culture, fields that he helped found. Burckhardt's best known work is *The Civilization of the Renaissance in Italy* (1860).