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## THE KINSHIP OF MUSIC AND LANGUAGE

### Introduction

The matter of affective prosody in speech, of the musical elements of spoken language, presents us with an interesting means to cross-disciplinary research between the fields of musicology and linguistics.<sup>1</sup> So far this area of research has been disappointingly neglected. While efforts have been made to forge linkages between musical and linguistic studies, they have mostly been focused on aspects of form, and relations between the syntax of language and the structure of musical compositions. What is proposed herein is the forging of new connections between music and language, through the examination not of scores and texts, but rather of natural and spontaneous data from the real-world performance of individuals engaged in undeniably linguistic or musical behaviors, though the separation between these behaviors is ambiguous at times. The interaction between music and language is an area of research that has been touched upon by scholars since at least the time of Plato and Aristotle. Yet for all its long history, little has been resolved, and the relationship between these two quintessentially human endeavors remains clouded in mystery. It is with an eye toward fortifying discussions between musicologists and linguists, which might at last bear fruit, that the following comments are aimed.

### Linguistic and Musical Cultures

One might argue that just as there are linguistic cultures, defined as languages or dialects, there are musical cultures. Surely, the concepts of *Czech* and *Italian* music, even *Gypsy* and *Jewish* music, are bandied about as if they were well-defined categories. But the simple fact remains: they are not (for further discussion see Beckerman 1986 and Beckerman 2000). Granted, the boundaries between languages, and the distinction between language and dialect are porous, at times arbitrary and ill-defined. But musical cultures appear even more permeable still. Nowadays, there is hardly a point on the globe untouched by “American pop music,” including among those who understand not a word of English, which dramatically argues that music more easily crosses boundaries than people or tongues.

The cliché of course says that music is a universal language. But what does music mean? If music is a language of emotions – as commonly asserted (Cf. Pinker 1997) – and were it truly universal, then a funeral dirge in any culture should sound the same, or at the very least invoke the same emotions in a listener regardless of familiarity. But this simply is not the case.<sup>2</sup> Even if these differences are the result of cultural attitudes toward funerals (i.e. celebration of life vs. regret for death) the argument holds: music can not be a universal language unless it is universally understood. Cultural differences that are encoded musically are nonetheless non-universal elements. While music is capable of overstepping the bounds of space and time more easily than, for instance, the vocabulary of a language – in many cases even the speakers of that language – it nonetheless retains some as-yet-undetermined connection to the culture from which it arose, an irredeemable accent, if you will.

The matter of defining cultures is not a simple one, and while it is easy to attach a label to something, that attaching does not in itself render the result meaningful. It is what might be termed a *polite fiction*, something which we admit to be spoken amongst ourselves only because it is easier to pretend than to replace the idea with another one more accurate, though harder to grasp. This is what Michael Beckerman describes as the “necessary economy” of human memory and information retrieval:

As a matter of fact, almost anyone who has not devoted a good deal of thought to the subject tends to think such categories as “Polish folk music” or “Czech songs” are unproblematic. Part of the reason for this is the necessary economy which dictates the way the brain stores and retrieves information. In order to function in a complex world, we cannot be continually “unpacking” and challenging every stored concept (Beckerman 2000: 96).

Thus, music remains attached to a culture, though one somewhat more broadly defined than linguistic descriptors alone can muster, yet narrower than the universality of all humanity. It crosses some boundaries, but not all as easily as others. The truth is, we do not quite know to what extent the emotional and narrative characteristics of music are universal, and to what extent they are more bound to a people or a place.

I have noted above how one people’s funeral music fails to evoke a recognizable image of death in an outsider. To be fair, not all “foreign” music is equally foreign, nor equally incomprehensible to the uninitiated. For instance, Beckerman has privately recounted diverse classes of California undergraduates rather consistently, and mostly accurately, describing the program of a Dvořák pastoral, after listening to a recording. Do they somehow have more direct access to the culture of late-19<sup>th</sup> century Austro-Hungary than they might to that of 20<sup>th</sup> century Indonesia? And if so, to what extent, and why? Or is it a matter in this case of a teacher’s willful expectations that makes sense of the students’ comments in a way that corresponds to his learned knowledge of the music? At this

point, without empirical studies to reduplicate these anecdotal results and to test this theory, we simply do not know.

### **Linguistic Prosody and Music**

But music is not the only sound from distant lands that one might encounter. While in most cases the words of an unfamiliar language will fail to provoke understanding, it is likely that a face-to-face encounter between two speakers of widely divergent languages will nonetheless provide opportunities for a good deal of communication. While shared circumstances, facial and bodily gestures, physical appearance, and other factors, will surely play a role in facilitating this, one unavoidable element of speech (beyond the phonemes and morphemes of a language, which might be quite unfamiliar, and in any case meaningless in themselves) is the prosodic shape with which it is presented. Encoded in this prosody are aspects that might be deemed universal, or more likely trans-cultural in ways that might be akin to music's boundary-crossing proclivities.

Every utterance of speech contains an emotional layer, largely but not exclusively found in the prosody of that utterance. Directed speech prosody can be broken into three principal categories: what might be termed *lexical*, *propositional*, and *affective*. In simplified terms, the first is that encoded in the word (as for instance which syllable is to receive the "accent"); the second that which determines the type of utterance (i.e. question intonation vs. statement intonation); and the third that which colors an utterance with emotional and attitudinal information. I will mostly be concerned with the latter two, especially the last, though at the acoustic surface, and even at the level of production, these different sorts of prosody are difficult to distinguish. Not enough is yet known about the cognitive processes leading to sound production, nor those leading to the comprehension of speech to provide an objective means for their distinction.<sup>3</sup>

This layer of speech may hold a great deal in common with the emotional and narrative aspects of music. While syntax and semantics are often the focus of linguistic research, and form the focus of music analysis, the emotional and narrative features of both music and language present an additional means of comparing these two behaviors. This is an area of research that has yet to be fully exploited, and one that has often been overlooked. Comparison along these lines therefore holds great promise for uncovering new connections between musical and linguistic knowledge. Unfortunately, no thorough comparison has ever yet been done between the prosodic elements of different languages (synchronic variability), nor between the prosody of utterances in the same language across time (diachronic change).<sup>4</sup> Certainly none has been done comparing such aspects of language to musical experience.

The prosody of speech might be termed the musical aspects of language. But such a description, relegating prosody to something musical and by implication not linguistic, masks the overlap between these two domains, and creates false impressions of how they relate. For instance, one might suppose that musicians

would necessarily be more adept at comprehending and manipulating these aspects of language, than the average language user. But musicians do not seem to be immune to having bad accents in a second language, which one might suspect if these were ostensibly subject to a single musical faculty. It also creates the impression that prosody is something external to language, something ornamental, but non-essential. However such a view would fail to accommodate the reality that affective prosody is a universal aspect of all spoken language!

Certainly there are differing degrees of competence in this realm. There are dynamic storytellers and itinerant mumblers in all languages. But there is no evidence at this point that correlates prosodic abilities with musical ones. To be perfectly clear, outstanding musicians appear no more nor less capable as a class than the average population, in terms of their control over and comprehension of speech prosody. At least the evidence to such effect has never yet been produced.

### **The Nature of Competence**

It has been argued that language and music differ in that linguistic competence is something shared by all people, but that musical competence is not. In support of this argument, it is pointed out that all normal children, with intact hearing, acquire speech, but contrarily only a small segment of the population learns to play an instrument, and an even smaller percentage does so well. For instance, Steven Pinker has written:

All neurologically normal children spontaneously speak and understand complex language, and the complexity of spoken vernaculars varies little across cultures and periods. In contrast, while everyone enjoys listening to music, many people cannot carry a tune, fewer can play an instrument, and those who can play need explicit training and extensive practice. Musical idioms vary greatly in complexity across time, cultures, and subcultures. And music communicates nothing but formless emotion (Pinker 1997: 529).

But these are not exactly comparable activities, nor is it truly clear just what sorts of behaviors Pinker is attempting to compare. First off, listening to music is not in itself a simple procedure, as even a brief survey of the wealth of music cognitive literature will show. Further, what does it mean for someone to be able to *carry a tune*? Certainly those neurologically normal children who acquire language likewise acquire the ability to manipulate and comprehend the tonal aspects of language. They will be quite capable of expressing their wishes, desires and attitudes through the drama-rich melodies and rhythms of their speech. Likewise, there is not a culture in the world that exists without some form of playsong or lullaby, often improvised by parents or children, alone, in groups, and most especially when interacting with infant relatives. Thus an ability to carry a tune, both in speaking and in singing, appears contrary to Pinker's asser-

tion to be quite universal, though certainly in varying degrees of aesthetic skill. Playing an instrument can be put aside. It is clearly not comparable to the acquisition of spoken language. It might be more akin to literacy, or the ability to type, aspects related to language, but far from universally held.

Does Pinker perhaps mean something different then by carrying a tune? Later in the same section quoted above, Pinker describes music as being “built from an inventory of notes and a set of rules” (Pinker 1997: 529). Yet such a set of rules has never yet been satisfactorily described, no more so than has a complete description of the set of rules needed to produce language. Both have been attempted, and the attempts have proven beyond anything else, that these behaviors are superbly complex, and difficult to contain in simple systems. In this way as well, music and language are quite similar. As for an inventory of notes, does not speech itself also contain manipulations of pitch? Such an inventory of notes does in fact vary quite widely across musical cultures, just as the use of pitch in speech varies across linguistic cultures. Further, there is a great deal of flexibility available, in terms of the use of pitch space, even within a single musical culture (which itself would be difficult to define). Again, we have evidence of how music and language relate, rather than differ.

### **Cultures, Revisited**

In terms of linguistics, one major way cultures vary is by their use of distinct languages. In fact, one point I made above is that we often use languages as a means of labeling and defining cultures. But musical cultures do not vary in the same ways that linguistic cultures do. One might argue, that there is no comparable level in music that corresponds to the stratum of individual languages. Is this because the concept of individual languages is a false one, or is there in fact a disconnect between these domains of human experience? In most cases, there are no clear lines between languages. To some extent this must be because of human interaction across these erstwhile divides. This of course, is similar to music, as music from a neighboring region, or even one more remote, can influence music of a particular locale. One might imagine however a time when linguistic cultures (and musical ones) were quite distinct, as the peoples of these cultures were isolated one from another. Surely, this has periodically existed throughout the world, and throughout time. The remnants of this phenomenon can still be observed in the more remote areas of the earth, where isolation is more common. The great preponderance of languages in Papua New Guinea, for instance, is surely in part the result of this sort of physical isolation.

It would seem therefore that a time may have existed when languages were truly distinct, and it is possible to consider that at such a time music and language may have corresponded more clearly, that indeed a directly comparable level may have existed in music to correspond with independent languages. It is conceivable that as music and language evolved, their differing natures (in particular the greater connection of language to referentiality) allowed them to

spread in different ways, thus blurring musical cultures more than linguistic ones. Whether languages emerged from a single source, then through divergence became multiple, or originated in multiple forms, then through convergence became more similar is perhaps impossible to determine. Whichever is the case, it is quite likely that the history of music followed along similar lines.

But you will note that I speak in terms of individual language users as the promulgators of linguistic change. Surely, each of them does not have their own language. However, individuals are described as having their own *ideolects*, their own ways of speaking, determined and influenced by their individual experiences.<sup>5</sup> For where in the world does a language exist? Certainly it is in the utterances of those who ostensibly speak that language. Is language then a physical object or is it more like a symphony, existing only as a construct based on events in the world? Languages most assuredly are of this latter variety, at least one step removed from concrete objects, existing as abstractions from examples. It might seem that the best level of comparability is between linguistic utterances and musical compositions. Even if we consider an utterance to be more comparable to motives, a whole composition is something different from a language, in that a composition is a world unto itself, in a way that a language is not.

A composition, as an abstraction, exists as a collection of specific musical parts. Individual languages exist not as a specific set of utterances, like compositions, but rather are often defined as the set of all possible utterances that could be understood by a hypothetical listener competent in that language. Yet the world does not present us with all possible utterances, but merely a selection of them, from which we might extrapolate other such possibilities. Formally we call such a collection a *corpus*. Neither does the world present us with hypothetical listeners, but real ones. It is difficult to speak of an individual language as existing somewhere in the world, rather than inside the minds of the real-world listeners and speakers of that language.

A compromise is perhaps made in saying that a language is determined by mutual comprehensibility. Yet individual speakers of ostensibly the same language may fail to understand each other, whereas speakers of otherwise different languages may often succeed. A native of Alabama in the center of London may find oneself completely misunderstood. A New Yorker ordering a cup of „regulah coffee“ in Atlanta will be surprised to find that their mug contains neither cream nor sugar. Indeed a Pole in Slovakia might find a greater degree of mutual understanding than a Texan in the South Bronx.

In reality, each speaker will have their own corpus to draw from, their own experience and memory of utterances, influenced by their subcultures as well as their cultures, though a subculture is no easier to define than a culture. Thus the realm of possibilities (i.e. possible utterances) differs by person. As a rule however, this is not the case for compositions. The realm of possibilities is constrained by those specified in the score, or in the memory of a performer for unwritten music. In this way, a prepared composition is more akin to composed language. A composition would be like a book or a play, in which the realm of possibilities is likewise constrained.

Interestingly, not all music is of this composed variety, just as not all language is premeditated and preconceived like a book or play. Much music is improvised on the spot, and much language is similarly extemporized. I have mentioned above playsongs and lullabies, and also that natural spoken language (real utterances, not hypothetical and theoretical ones) always contains a layer of prosody, the real-world presentation of pitch and timing, timbre and intensity. It is in these naturally-occurring, spontaneous utterances that music and language may be most similar. Many linguists have simplified the study of language to relate merely to the words, their constituent morphemes, and the relations among and between these words. One problem with this approach is that it further abstracts utterances from their living context, and most particularly from their sounds in the world.

### **Amid and Between: Music, Language and Experience**

The focus for our discussion is the sound of spoken language, in particular the rise and fall of pitch and the flow of time in speech, and how this relates to music. These are the elements most commonly described as melody and rhythm. While some may object to the use of these terms in the context of spoken language, it is in fact such an objection that I wish to illuminate. For what is the difference between speech and music? Why is it that we feel confident calling the rise and fall of a musical line *melody*, and the durational relationships of note-lengths *rhythm*, yet we hesitate to recognize these elements in the flow of speech?

One might contend that it is a matter of length, that a melody as such is something substantial, not a mere snippet or motive. Yet some musical compositions, like those of Leoš Janáček, who was inspired by spoken language, are noted for these sorts of melodies: brief, disjunct, often undeveloped. Would we stubbornly contend that such music lacks melody for this reason? I think not, and thus the question remains: what determines the description of a feature as melody or rhythm? By what objective measure can we say in music, “ah, there is a melody and there a rhythm,” but in speech, “see here, no melody exists”? Do our ears truly distinguish between these sorts of input? If so, in what ways? Put another way, is there something in the acoustic signal that renders music distinct from language? Or is it rather, an aspect of our thinking, determined by cultural and contextual expectations, rather than an objective feature of the sound itself? For our purposes here, let us limit ourselves in this discussion to the one instrument common to both speech and music – the human voice, for it is in this way we can assure that our comparisons are most similar. Surely, the presence of a brass or percussion instrument will skew our judgments, but it is far more difficult to distinguish merely by listening when an individual is speaking or singing, or engaging in some middling activity, and this is especially the case in cultures other than our own.

The flow of language in natural discourse is intended to convey meaning, and to express the attitudes of the speaker to the topic under discussion (cf. Chafe 1997: 399). Further information can be gleaned about the age, gender, health and mood of the speaker, through the timbre, pace, and pitch of their speaking. The context is constrained only by the knowledge and sensitivity of those involved.



When we capture language as written text, we simplify the richness of lived experience, and in a sense we divorce it from its social context, that of two or more people engaged in direct and intentional interaction.

Performed music in some ways creates its own context, at least an auditory one, within which the individual voices of the musical texture play. As an audience, we may choose to ignore external sounds, which we may consider extraneous. Of course, it was a consideration of this unconscious choice that composer-philosophers in the last century, like John Cage, wished to highlight. Like gadflies, they sought to raise an awareness of our neglect of the real environment of sound that envelopes us. The debate they forged remains one of conscious choice vs. unconsciousness. The history of Western music to that point, as it moved out of the cloister and the park, onto the stage, provided a direct path toward such unconscious choice, the ignoring of externalism. The environment of theater and concert hall present a social context that is more in the background, as music itself takes center stage.

Though an explicit debate had already been waged, in particular during the 19<sup>th</sup> century, between *absolute music* and music which asserted its referentiality, its directedness, the greater context for music was thus pushed even further into the background, not to reemerge until the mid-20<sup>th</sup> century. In interpreting the world, music being one example, one must always make choices as to what is relevant. If we take a purely positivist tack, looking merely at the score, we ignore many things. Some would say we ignore the referentiality of the music, what it means, what it signifies. But even beyond this domain, there exists the context in which it is presented, and the means by which it is perceived. The layers of musical experience are as skins on an onion: there for the lifting. We should never be deceived that any one layer contains the whole fruit.

Musical meaning in general is less specific than that of language, where the semantic ground of individual words is established by use and convention. Music is more flexible, and bears fewer constraints than language. In speech, overlapping of utterances is commonplace. In written language, as for example in the writing of plays for the stage, this sort of overlap is uncommon. We instinctively choose what is most relevant, most important, as if the overlap did not in reality exist. In writing, one might simply notate that one utterance is cut off short of its conclusion, with another one taking its place. In reality, however, both may co-exist at the same time. It is interesting to note, that in performances of plays, such overlap is often produced by the players, even where it is not written in the script. Likewise musicians, in particular soloists, will often create rhythmic or harmonic interactions that are not located in the score, for example by hastening or delaying an entrance *out of time* with their colleagues. In instrumental music since polyphony took root, it is common to hear a multitude of instruments playing at once. In the tradition of opera, it is frequent for several singers to share a sound space, singing different lines of music concurrently, often with different words.

Both spoken language and music present a great variety of styles of presentation, each bearing a different relationship to what we might notate or recall in written form. A score and a text are mere approximations of the sounds they signify;

and this approximation, though ruled by convention, appearing in standardized form, does not produce a clean one-to-one correspondence with what is connoted, neither for language, nor music. We learn explicitly as performers, that for different style-periods of musical composition we are allowed, even expected, to veer from the notation in particular ways. For instance, a straight eighth–eighth rhythm in Baroque music might likely be performed as a dotted-eighth–sixteenth or triplet rhythm. We also know that conventions of tuning have shifted over time, and a B-natural from one era, may sound as B-flat in another. What might be considered an out-of-tune interval in one time and place, is proper in another, and a consonance from one period may be deemed dissonant in another. I bring up the flexibility, indeed vagueness, of notational convention merely to argue unambiguously that even the absolutes of a musical score require interpretation.

Written text is in ways akin to this. Written language provides only a schematic for what is expressed beneath the surface. This is clear if we think of how frequently misunderstandings arise in the exchange of letters and emails. How often do we read and reread a brief, seeking to capture the fine-toothed meaning behind innocuous words. We do not hear the voice of a speaker, and therefore we must attempt to glean from the text itself a sense of their attitudes and commitments to the meaning that is conveyed on its surface. There are conventions of written language that differ from spoken language. A clear example of this is punctuation, which in some ways relates to the pace, melody, and pauses of speech. Another example might be the use of italics or boldface in printed text, which most likely indicates where a change in pitch or amplitude might signal prominence in speech.

We can see these writing conventions in ways similar to the designation of measures and durations in music. In absolute terms, a quarter note conveys one fourth the length of a whole note, and each 4/4 bar of music is of the same length. Convention tells us this is so, at least in writing. Yet, a simple acoustic examination of just about any performance of any piece of music will call into question these absolutes. A singer or wind-player often requires time to breathe at points unallowed for by the score. The breath is taken, a delay ensues, but we ignore it as an artifact, rather than an integral part of the performance or interpretation. Further it is quite common that a musical phrase will be performed with slowing toward its end, despite a lack of this in the score. It is this sort of ebb and flow of time, beyond the bounds of explicit notation, that produce the human quality of music. Musical-sequencing software often contains a “randomizing” feature, in order to produce natural-sounding results, since cleanly exact behavior is perceived as artificial (Clayton et al).

This sort of ebb and flow is natural in speech as well. Linguists engaged in the study of natural speech describe as commonplace a quickening of pace at the beginning of utterances and a slowing at their end. This speeding and slowing has been noted at various levels of speech, from what is considered by many to be the basic unit of speech and thought, the *intonation unit*, to larger units of conversation, including *topic*. This sort of temporal flow holds, though perhaps in modified form, whether in spontaneous speech, lectures, or read text. It is a necessary part

of the segmentation of speech, that facilitates parsing of an utterance by a listener, and possibly also the production of these utterances by a speaker.

Further, the vocabulary is likely broader in written text, allowing for great subtlety of meaning, in large part to compensate for the lack of emotional prosody. A phrase on a page, absent the melodic, timbral, and rhythmic cues of speech requires a greater degree of semantic explicitness than spoken language, in order to convey the same level of information as is contained in speech. One might argue that so too does a written score require a greater degree of explicitness than performed music. In this light, it is quite understandable that the written forms of folk song often present a great variety of rhythmic interpretations. A score must make explicit one choice, though a performer of this music will quite possibly make another. Composers such as Messiaen have taken this rhythmic explicitness to extremes as they have notated what appear to be more exact ratios between notes. Curiously, such notated rhythms are more difficult for performers to read and comprehend, though they may correspond more precisely to what is produced when the usual simplified versions are notated. Most commonly of course, a composer or editor will choose to notate approximate rhythms in the score but indicate perhaps an *accelerando* or *diminuendo*, as short hand to the performer to veer in particular ways from what is written.

### Conclusions

The relationship between music and language is a complex one, but one which deserves a fuller presentation and analysis than it has so far enjoyed. Both linguistic and musical research would be enriched by attempts to bridge the divide between these enterprises. Although, many assume *a priori* a distinction between music and language, the evidence does not support such a supposition, at least not in consideration of the production and perception of music and speech in context. In particular, an examination of natural and spontaneous behaviors from everyday speech to improvised playsongs and lullabies, presents a rich array of data that fails to fit within neat categories of music or language. Further, it can be noted that new means toward linguistic and musical analysis can arise from an approach to actual performance, and not merely an examination of scores or written texts. In examining human vocalisms of all sorts, which comprise an ambiguous territory between speaking and singing, much knowledge can be gained.

### Notes

- <sup>1</sup> This work is adapted from the author's upcoming Ph.D. dissertation, "Leoš Janáček and the Music of Language," University of California, Santa Barbara, expected 2004.
- <sup>2</sup> Thanks to the ethnomusicologist Timothy Cooley and to the linguist Wallace Chafe for enlightening discussion in this regard.
- <sup>3</sup> Monrad-Krohn (1963) recognizes four categories of speech prosody, the first three roughly corresponding to my own, which he termed: intrinsic prosody; propositional prosody; emo-

- tional prosody; and prosodic grunts.
- <sup>4</sup> An exception to this in terms of synchronic comparison can be found in Ross et al (1986), which compares the acoustic features of affective prosody in English with those of three tone-languages (Taiwanese, Mandarin, & Thai). This appears however to be the only such study extant.
- <sup>5</sup> The neurologist Walter Freeman has described the condition of *epistemological solipsism*, the result of individual's isolated experience of the world. He has argued that music and dance evolved in part as a means of bridging this solipsistic gulf. These ideas were presented as part of a panel on Evolutionary Musicology at the International Musicological Society in Leuven, Belgium, August 2002, and also in Freeman 2000.

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