“Music usage” is an odd turn of phrase, odd in part because the analog “English usage” is so very common. The smallest bookshop might carry *The Cambridge Guide to English Usage* (Peters 2004), but a *Cambridge Guide to Music Usage* has never even been contemplated. And yet different aspects of usage are precisely what many writers on music have in mind when they refer to style, expectations, norms, innovations, and the like. Such a writer was Leonard B. Meyer.

As a graduate student, I was fortunate to study with Meyer at the University of Pennsylvania in the early 1980s. It was toward the end of his professorial career, and questions of music usage were clearly on his mind as he worked to complete his magnum opus, *Style and Music: Theory, History, and Ideology* (1989). I assumed that “usage” had always been a part of his scholarly vocabulary, though I realize now that it had not.

Meyer chose his words carefully, a legacy of his degree in philosophy. For instance, his decision in the 1970s to begin replacing the word “expectation”—so central to his early work—with “implication” signaled a small but significant shift in his thinking, a move away from “nature” and toward “nurture.” The same could be said of his eventual replacement of “archetype” with “schema.” The advent of free digital libraries (i.e., Google) has now made it possible to document, with some precision, trends in Meyer’s vocabulary. With respect to his usage of “usage,” one can search for every instance of the word in nearly everything that he ever
published. A simple progression emerges from such a survey. In his earliest and still best known writings, he avoided the word entirely. In his “middle period,” he made analogies with language and began to use combinations like “harmonic usage” or “Haydn’s usage.” And in his later works he finally naturalized “usage” as a general term tied to the empirically grounded behavior of composers, where norms are understood statistically as acts with higher probabilities of occurrence in particular contexts. The chapter subheading “Changes in Usage” in Style and Music (1989, 296) is perhaps the clearest indication that “usage” came to be an important topic for Meyer. In this paper I will survey his shifting relationship with “usage,” examine in some detail his last efforts in this area, describe (echoing Meyer) some of the difficulties inherent in empirical studies of music behavior, and close with a cautionary tale from eighteenth-century Naples.

The Analogy with Language

In Meyer’s first four books—Emotion and Meaning in Music (1956), The Rhythmic Structure of Music (1960), Music, the Arts, and Ideas (1967), and Explaining Music (1973),—he never discussed musical patterns as representing, defining, or defying a usage. It was only with his chapter “Toward a Theory of Style” in the multi-author collection The Concept of Style (Lang 1979) that the word began to enter his vocabulary. He used it only four times there, and, as shown below in bold type, only the later two instances refer to music usage:

(1) Thus it would, I think, be abnormal usage to speak of the style of someone’s
breathing, even though such breathing involved regular replications, and even though the particular patterning could be differentiated from the breathing of other individuals. (3)

(2) Textbooks dealing with harmony, counterpoint, form, and so on, are not, despite customary usage, theoretical treatises explaining the bases for the constraints employed in some style. (11)

(3) From the standpoint of melodic/contrapuntal usage, for instance, the organization of harmony in organum is an aspect of strategy—that is, a way of realizing rules; but from the standpoint of the history of harmonic practice (which is admittedly retrospective), the constraints governing vertical successions can be considered dependency or contextual rules. (26, fn 57)

(4) The use of an unmistakable cadential formula at the beginning of a movement is a strategy of which Haydn was especially fond. In other words, this sort of usage is a characteristic of Haydn’s idiom, both in the specific sense that Haydn often begins with a closing figure and in the broader sense that he was prone to employ, in playful and at times seemingly capricious ways, the forms and procedures established by the dialect. (35)

His allusions to English usage in passages (1) and (2) invoke the basic humanistic precept
expressed in ancient times by Horace (ca. 18 BCE), who called usage “the arbiter, law, and rule of speech” (usus quem penes arbitrium est et jus et norma loquendi). In (2), Meyer’s connection of “custom” with “usage” similarly echoes Aulus Gellius (ca. 150 CE), who made a broader assertion that “Custom is the mistress of everything, and, in a most special manner, regulates the use of words” (Consuetudo omnium domina rerum, tum maxime verborum est). I will return later to explore the ramifications of this ancient and deceptively simple premise.

In (3) and (4), by contrast, Meyer is speaking more of musical norms. The appositional constructs that he deploys—first, “melodic/contrapuntal usage” contrasted with “harmonic practice,” and second, “this sort of usage” paralleled by “characteristic of Haydn’s idiom”—serve to narrow the reader’s construction of “usage” by likening it to either a technical practice or a personal idiom or dialect (note the further allusions to language), and hence not to universals. This bimodal semantic field, with “melodic/harmonic/contrapuntal practice” on the one side and “a famous composer’s characteristic idiom” on the other, persisted in his later writings.

There is, to be sure, a difference between actively using one’s native language and passively listening to music. Even performers of classical music, who in some circumstances might have questions about their English grammar, need hardly ever worry about their music grammar. Yet Meyer began his musical career as a composer, which is to say as a music “speaker.” He openly made the analogy between the active use of language and the active type of listening that he no doubt sensed in his own engagement with music and hence inferred in others. Bertrand Russell had said, “Understanding language . . . is like understanding cricket: it is a
matter of habits acquired in oneself and rightly presumed in others” (1927). In *Emotion and Meaning in Music*, Meyer claimed that “What Bertrand Russell says of understanding language also applies to the understanding of music: ‘Understanding music is not a matter of dictionary definitions, of knowing this, that, or the other rule of musical syntax and grammar, rather it is a matter of habits correctly acquired in one’s self and properly presumed in the particular work’” (1956, 61). Russell and Meyer were describing what a psychologist might term “procedural memory,” that is, memories for how things are done, for how one moves in a certain way, or performs a known task. Native speakers of English, for instance, would never describe a child’s toy as a “red big ball” because they learned the correct form—“big red ball”—early in life. This knowledge, even for a seemingly arbitrary sequence of adjectives, is robust, immediately available, never explicitly taught, and very much of the type that Meyer had in mind when thinking of musical norms, habits, customs, and, of course, usage.

I imagine that the game of cricket invoked by Russell was played by nearly every English boy of his generation and class. The tradition of classical music described by Meyer was known, even if superficially, to nearly every educated American in the 1950s, especially to those with the once common experiences of piano or violin lessons (Meyer played the violin), of playing in the school band or orchestra, or of singing in a church or school choir. As someone with scant knowledge of cricket and no personal experience in playing it, I can attest that the game is mystifying to the uninitiated observer. Is the experience of classical music similarly mystifying to modern listeners who may be “native listeners” of other traditions (Rock, Hip-Hop) and perhaps have never played or sang from music notation? Because this question remains largely
unexplored there is room for doubt that the usage of music speakers in the classical tradition (composers and improvisors) is available to passive, casual listeners as “a matter of habits correctly acquired in one’s self and properly presumed in the particular work.” That said, in the remainder of this essay I will adopt Meyer’s view of an ideal listener who, through performance and focussed study, has developed empathy toward the kinematics of performance and internalized the norms of the classical style. Meyer’s listener is, if you will, inside the music, experiencing it as a train of dynamic thoughts and/or actions which, though initiated externally by others, play out internally upon the “proper presumptions” of the listener’s memories.

Usage Naturalized

A revised version of “Toward a Theory of Style” became, ten years later, the first chapter of Style and Music. With “style” appearing so frequently in these titles, it may pay to quote Meyer’s own definition: “Style is a replication of patterning, whether in human behavior or in the artifacts produced by human behavior, that results from a series of choices made within some set of constraints” (1989, 3). During the interval between “Toward a Theory of Style” and Style and Music, it appears that “usage” became a naturalized word in Meyer’s musical vocabulary and an element of his verbal style, as judged by the word’s many replications. The following excerpts selected from Style and Music suggest that “usage” had become one of many constraints that determine and characterize musical style. Or one might go further to say that in this Darwinian world where those patterns best adapted for replication in a particular environment are the ones most likely to survive and flourish, “usage” came to describe a dynamic ecology.
(5) Once a theory has been formulated (usually on the basis of prevalent practice), it may serve, often through a process of logical extrapolation, as a source of novelty. Thus the conceptualization of, say, the triad as an entity easily leads to novel kinds of usage. (132, fn 54)

(6) [A scholar] has called my attention to the fact that it was common in Austrian music (to about 1780) for theatrical overtures in several movements to end with an aria, chorus, or ensemble ([citation]). This usage may, through extrapolation, (whether conscious or not), have served as a source of Beethoven’s innovation. (144, fn 21)

(7) Composers tended to define such territories through the use of what might be thought of as surface self-markers—e.g., idiomatic rhythms, melodic gestures, harmonic relationships, instrumental usage—and, in the twentieth century, novel precompositional constraints. (222)

(8) But what is of interest stylistically is not such similarities, but rather the differences in structure and usage that result in differences in frequency of occurrence and in modes of disguise. (227, fn 23)

(9) [speaking of a folk tune borrowed by Rimsky:] Such usage was warranted by the
Romantic valuing of the putative naturalness and innocence of the folk. (239, fn 49)

(10) For an interesting discussion of some aspects of subdominant usage in the late nineteenth century, see [citation of article]. (276, fn 16)

(11) For much later instances of this kind of nonsyntactic usage, see [citation from Stravinsky’s Rake’s Progress]. (278, fn 18)

(12) In short, the sign-function of the minor-to-major plagal cadence was supported and perhaps encouraged by earlier usage. (290)

(13) I am grateful to [a scholar] for calling Schoenberg’s usage to my attention. (292, fn 74)

(14) [Chapter Subheading:] Changes in Usage. (296)

(15) [speaking of transitional passages becoming more thematic in works of Romantic composers:] This usage resulted from a valuing of the expressive power of melody and a prizing of gradual transformation on the one hand, and from the rejection of what seemed conventional and impersonal “passage work” on the other. (309)
(16) On the other hand, perhaps Brahms’s usage (choice) is symptomatic of his well-known classicizing proclivities. (329, fn 58)

(17) At times Stravinsky’s harmonic usage is considerably more traditional than it is in [example citation]. (349, fn 31)

Notice that the majority of these passages occurred in footnotes. Though Meyer was then using “usage” more frequently, he still employed it mostly in asides, where he invoked either the totality of a composer’s style or the norms of Satztechnik (the technical aspects of composition such as counterpoint, harmony, orchestration, etc.). This same dual usage, as mentioned earlier, characterizes his language in the other essays published while he worked on Style and Music:

from “Melodic Processes and the Perception of Music” (Meyer and Rosner, 1982)

(18) [speaking of the Haydn figure addressed in (4) above:] “One consequence of this anomalous usage is that the movement might have ended with the very same figure that it began with. (158)

(19) Because they are quite different in these respects, changing-note melodies are not especially well suited to polyphonic usage. (184)

from “Exploiting Limits: Creation, Archetypes, and Style Change” (Meyer 1980)
(20) In my view, it is not surprising that Beethoven's usage is more like Mozart's than like Berlioz's — even though the last of Mozart's works considered here preceded the C#-Minor Quartet by forty years while Beethoven’s precedes Berlioz’s work by only four years. (207, fn 31)

(21) Harmonic usage also serves to disguise the archetype. Because dominant harmony (V) ends the first phrase (m) and occurs as part of motive x’, it is understood to underlie the beginning of the second phrase (m’). (217)

Explaining Usage

“Nature, Nurture, and Convention: The Cadential Six-Four Progression” (Meyer 1992) was Meyer’s last published research article. With its tables of historical occurrences of the 6/4 progression and a graph of the pattern’s prevalence among various composers (possibly the only graph ever published by this lifelong advocate of empirical research), Meyer’s contribution to a Festschrift for Leonard Ratner stands somewhat apart from his other work and remains among his least known efforts. Its contemporary reception was not entirely positive, perhaps because it resembled an exercise in “positivist” bean counting during the high-water mark of the anti-positivist New Musicology (e.g., Kerman 1985, 44, 50, 108, 129, 199). Viewed from within Meyer’s own trajectory of publications, this article shares elements not only of his 1982 collaboration with the psychologist Burton S. Rosner (“Melodic Processes and the Perception of
Music,”), but also of my own *A Classic Turn of Phrase* (Gjerdingen 1988), which Meyer had edited and accepted for publication in his series “Studies in the Criticism and Theory of Music” (Rothfarb 1988; Meyer 1989; Jopkins 1990; Thomson 1991; Eitan 1997). The tables and the “methodology” section in “Nature, Nurture, and Convention” are reminiscent of the Rosner collaboration, while the graph of usage plotted against historical time strongly resembles the graphs presented in *A Classic Turn of Phrase*. These similarities are, of course, no more than stylistic affinities. But they do signal Meyer’s embrace of what were then the still new fields of music cognition and cognitive musicology.

The cadential 6/4 progression itself had a checkered history, both in music instruction and scholarship. The designation “6/4” stems from the discourse of figured bass. There the figures were shorthand tokens for contrapuntal models taught, in an oral tradition, by seasoned music masters to young apprentices (Gjerdingen 2009). The notion of “progression,” by contrast, is rooted in the much later discourse of harmony. As touted in nineteenth- and twentieth-century textbooks for amateurs and young-adult students, the theory of harmony was a new, scientific revelation of the natural simplicity underlying the old practices. The term “cadential,” which presumes an understanding of the import of tones, stems from yet a third source—classical rhetoric. So the “cadential 6/4 progression” likely signified different things in different eras, and today it continues to straddle the fault lines of quite opposed views of the musical art. For Meyer, this contested schema may have seemed the perfect foil for his own discussion of convention.

He titled the first section of his article “Introduction: About Origins.” He argued that historical concerns about the very first instance of a music pattern are misplaced, and that we
should focus instead on a pattern’s replication. Given his definition of style, the emphasis on replication is understandable. But he goes on to argue that replicated patterns, if they become “commonly used,” can establish a convention.

How cognitive constraints establish the necessary conditions for replication, thereby making it possible for a particular pattern to become a convention, will be one part of my concern. . . . The other part concerns sufficiency: that is, the cultural conditions that induce the compositional community to replicate particular patterns so that they actually become conventions. . . . If a relationship is to be commonly used—to become a stylistic convention—it must also be consonant with other constraints of the style and be nurtured by the values, ideological as well as aesthetic, of the broader culture in which it exists. (229–30; page numbers refer to the reprint ed.)

If conventions form part of what is “commonly used,” then particular conventions must be part of a specific music usage. Indeed, “usage” seems to be the central topic of Meyer’s article, though the word appears nowhere in his text.

His second section focusses on the cognitive constraints that may have helped foster the cadential 6/4 progression. Meyer began with “some observations about tonal cadences in general” (230). That particular gambit exposed him to a problem of history. In (3) above, with reference to Medieval organum, he granted that making comparisons with tonal harmony “is admittedly retrospective.” In “Nature, Nurture, and Convention,” Meyer recounts, as established
doctrine, a common opinion of mid-twentieth-century historians: an earlier contrapuntal epoch was succeeded by a harmonic epoch in whose compositions “individual lines were subordinate to a succession of chords” (236). In an important study on the establishment of harmonic tonality (1968; Eng. 1991), Carl Dahlhaus had set out to pinpoint that shift of epochs, but he was unable to do so with any precision. Meyer, in a similar vein, apologizes that he was “unable to explain the origin of this change” (236). If it could be shown (see below) that many cadential conventions spanned both epochs, thus ensuring a bond of custom and usage, what evidence would there be that cognitive constraints were crucial for the replication of patterns in the second epoch that were already widely replicated in the first? When Meyer tries to explain why alternative chord successions like ii⁶-iii⁶-I were not replicated, he cites the principle that “forceful harmonic progression depends in part on the amount of pitch change between successive triads” (231). Again, whatever the merits of this principle universally, historically this seems a flawed argument—the presumed preference for forceful harmonic progression only comes into play many years after the conventions it is imagined to have fostered.

Meyer himself may have articulated the best explanation of his difficulty. Whereas his insights into the world of Bach or Mozart were those of a native speaker of the modern reception of the classical tradition, he was not at all fluent in early music. He would never have claimed to understand the musical language of a Lassus or a Monteverdi, other than as an outside observer. And so he failed to develop an understanding of their music usage as, in his own words, “a matter of habits correctly acquired in one’s self and properly presumed in the particular work.” Meyer heard the cadential 6/4 progression with ears conditioned by the music usage of the late
eighteenth and nineteenth centuries, though the pattern in question was already an important product of the sixteenth and seventeenth centuries.

In his “Methodology” section, Meyer laid out twenty-one conditions for including, or adjustments for tabulating, instances of the cadential 6/4 chord as found in the first two volumes of *The Norton Scores* (Kamien, 1970). He had hoped that this collection was truly representative of European music history. But he began to have doubts that were confirmed midstream, so to speak:

After my statistical work was well along, I happened to glance at the preface only to discover, to my dismay, that salesmanship had triumphed over scholarship. For, according to the preface, “the works . . . have been chosen from among those most frequently studied in introductory music courses.” And so I can only hope that the works used in introductory music courses are not merely canonic and easily taught (given the tenets of current music theory and the genetic assumptions of music music history) but reasonably representative of the styles they were included to exemplify. (238)

Meyer was being generous, as he was throughout his career. His *Norton Scores* were clearly skewed to the national preferences and prejudices of early twentieth-century England and America. Among eighteenth-century composers, for instance, those volumes contain only two Italian names, Domenico Scarlatti and Antonio Vivaldi, both known to modern amateur musicians by their instrumental music. Yet during that century there was never any doubt but that
Italian opera was the most important genre and its composers the most significant of the age. Charles Burney, in 1770, named the four greatest opera composers, Jommelli, Piccini, Sacchini, and Galuppi (Burney 1771; 2nd ed. 1773). Not one of them is represented by even a single measure in The Norton Scores.

Meyer’s list of the musical features that must co-occur to qualify as an instance of this particular schema is impressive in its thoroughness. He is careful to ensure that the 6/4 chord must sound in a particular context before it could count as a cadential 6/4 progression. His describing a feature as “preceded by a pre-dominant harmony” does, of course, seem to prejudice the tally toward only one of the many possible contexts for the cadential 6/4, even if it was a common context. As will be shown below, the boys in the Naples conservatories first learned this same 6/4 chord in a different context. Neither Meyer nor I knew this in the early 1990s, and it is a testament to Meyer’s perspicacity that the last of his conditions for the cadential 6/4 progression notes parenthetically that “there are reasons for believing that the early years of learning and creative activity are the ones in which a composer’s basic stylistic stance—his or her ingrained habits of mind, cultural values, and aesthetic preferences—is formed” (240). A fluent, fully internalized music usage, analogous to one’s mother tongue, is best learned while still young.

The final section of the article, “Nurture: Cultural Constraints and Compositional Choices,” is full of astute comments on individual composers of the classical style and replete with the kind of insights for which Meyer is justly famous. In style and outlook, this section serves not only as an extended footnote to Style and Music but also as a return to the topics in his
1980 “Exploiting Limits: Creation, Archetypes, and Style Change,” the article that inspired my own work in the history of musical utterances.

Meyer was not the first scholar to explore music usage through the lens of the 6/4 chord. He cited several prior studies, the earliest being from the pioneering American musicologist Glen Haydon (1896–1966). Haydon published *The Evolution Of The Six-Four Chord; A Chapter In The History Of Dissonance Treatment* in 1933. The phrase “dissonance treatment” in the title echoes the then influential dissertation (1922) of the Danish scholar Knud Jeppesen (1892–1974), the English version of which—*The Style of Palestrina and the Dissonance*—appeared in 1927. Haydon would later translate Jeppesen’s *Kontrapunkt* (1935; Eng. 1939). Jeppesen had achieved one of the first successes of the scientific musicology advocated by Guido Adler (1855–1941) in Vienna. Adler, in fact, had himself approved Jeppesen’s dissertation, though much of the research had already been done in Copenhagen. To some observers today, Jeppesen appears the arch “bean counter.” He looked in detail at every melody and every contrapuntal combination that Palestrina had ever written, and compiled tables of many types of co-occurrences. By itself, such an effort at piling up data has no absolute value. But what he deduced from the effort were a number of real insights into Palestrina’s contrapuntal behavior—Palestrina’s music usage.

For me, the most elegant of Jeppesen’s results were a number of hitherto unknown correlations between melodic contour, melodic interval size, and rhythmic patterns. For instance, Palestrina would not ask a singer to leap upward in quarter notes from a strong beat, but might easily ask him do so in whole notes. Similarly, upper neighbor-notes in quarters are treated in the same careful way as dissonances, whereas lower neighbors are freely allowed. In Palestrina’s
day, these coordinated gestures involving multiple musical features were clearly “a matter of habits acquired in oneself and rightly presumed in others,” especially so because Palestrina and many composers in his day began as choirboys and later worked as professional choristers. As boys, these “speakers” of the high Roman style developed a physical feel for the proper movements of voices. But as time passed and styles changed, the older subtleties became forgotten. Johann Joseph Fux’s *Gradus ad Parnassum* (1725), which purported to revive the pure music usage of Palestrina for aspiring eighteenth-century composers, shows little cognizance of these constraints on melodic contour. Jeppesen’s empirical work thus shed a penetrating light onto the essence of that most classic of all styles, and helped to explain why efforts at the resuscitation of the Palestrina style by Fux and others generally lacked the palpable refinement of the model.

The postwar German musicologist Carl Dahlhaus (1928–1989), in writing on the rise of tonality, had praise for Haydon’s study of the 6/4 chord, “so discriminating in its description and classification of this phenomenon” (1991, 329). But Dahlhaus went on to say that Haydon’s work “suffered from an overestimation of the chordal character of this interval combination.” Much depends on whether one views a 6/4 chord as a sonorous unity, which like a single dissonance will “resolve,” or whether the chord is viewed a result of the movements of separate voices. For earlier repertories, Dahlhaus said “It was not a chord that was dissonant as a whole, but a combination of two intervals that were independent of each other and treated differently: the fourth as a dissonance that had to be prepared and resolved, the sixth as a consonance not subject to rules of progression” (329). Had Dahlhaus lived to read Meyer’s study, he would likely have
voiced the same concerns. (As an aside, from having worked with both these scholars, I might note that neither seemed aware of the other’s work, and that Meyer’s direct contact with Germany was largely restricted to action on the Western Front, 1944–45.)

Usage and Probability

There were many Meyer’s, at least to his readers. There was the humanistic historian of listening (Style and Music), the systematic analyst of musical structure (Explaining Music), the performance coach (The Rhythmic Structure of Music), the music critic (Music, the Arts, and Ideas), and the music psychologist (Emotion and Meaning in Music), to name only the most important. All these Meyers were vitally interested in listeners and in questions about the experience of music. But slightly different personae speak from the pages of these books, a reflection perhaps of the different stages of Meyer’s life.

The Meyer who took up his first teaching position, at the University of Chicago, was a Modernist composer, recommended for the job by Aaron Copland. Theorist-composers were the norm in 1950s music departments, and in that regard he had much in common with his close contemporary Milton Babbitt. One could almost imagine Babbitt having penned these highly abstract paragraphs from Emotion and Meaning in Music:

Musical styles are more or less complex systems of sounds relationships understood and used in common by a group of individuals. The relationships obtaining within such a
style system are such that: (a) only some sounds or “unitary sound combinations” are possible; (b) those sounds possible within the system may be plurisituationally within defined limits; (c) the sounds possible within the system can be combined only in certain ways to form compound terms; (d) the conditions stated in (a), (b), and (c) are subject to the probability relationships obtaining within the system; (e) the probability relationships prevailing within the system are a function of context within a particular work as well as within the style system generally. The occurrence of any sound or group of sounds, simultaneously or in sequence, will be more or less probable depending upon the structure of the system and the context in which the sounds occur. (45)

Thus the effect of any particular deviant is a function of its position in the series. A deviant which might have only a slight effect at the beginning of a series, where expectation entertains a greater number of alternatives of approximately equal probability, may have a powerful effect toward the end of the series, where expectation is more particular and where the probability of expectation is liable to be greater. (50)

The first paragraph above lays out a trenchant analysis of what makes a particular kind of music that kind of music. Like a mathematical formula, its brevity conceals both the breadth of its possible applicability and the likely difficulties of exploring its terms in the practical world (think of $e=mc^2$). The second paragraph could be taken as a corollary of the first. Its central assertion has recently been experimentally validated through recordings of electrical activity in
the brain as people listen to music (Kutas and Federmeier 2000; Loelsch et al. 2000).

If we invoke the dictum of Aulus Gellius—that “Custom is the mistress of everything”—and define custom in music as, following Meyer, the probability of “any sound or group of sounds” occurring “simultaneously or in sequence,” then we should seek a statistical analysis of a musical style. Meyer was among the first to point out some significant difficulties with this enterprise, notwithstanding its attractions. He cited three in particular (1956, 55–60). The first is caused by “natural probabilities,” where probabilities outside the domain of a particular musical style still exert a force on our perceptions. He would later term these “cognitive constraints.” The second he associated with styles in constant flux, where individual and perhaps unique works form a difficult ground for generalization. Finally, he described the third difficulty as stemming from situations where “one style system may presume a knowledge of other styles which do not become overtly realized in a statistical sense.” Much of early twentieth-century art music, for instance, presumes a listener’s grounding in the classical tradition, even though the obvious and central patterns of that tradition may be consciously avoided and hence missing from the overt norms.

Hopes for a statistical analysis of music usage faded after the 1950s. Meyer and others moved away from what seemed like intractable problems, especially in a world where such studies were often performed with pen, paper, and an adding machine. Linguists had similar intuitions during that period, and met similar impediments. The English linguist J. R. Firth, for instance, drew attention to what he termed “collocation,” the extensive knowledge that one possesses of which words go together, and in what order. In the words of his playful epithet,
“You shall know a word by the company it keeps” (1957, 11). Yet it was only in the 1970s, when computer analyses became possible at research institutions, that Firth’s proposals were resurrected. With the establishment of huge computerized corpora of written and spoken English, the study of collocation is now seen to be central to understanding English usage. Native speakers have ears delicately tuned to the propriety and familiarity of “lecture circuit” or “auspicious occasion” and to the impropriety or strangeness of “admonish circuit” or “auspicious party,” even though “to lecture” has a synonym “to admonish” and “an occasion” has a synonym “a party.” For non-native students of English, insensitivity to collocations can produce humorous or embarrassing speech, and for these learners there is now available an Oxford Collocations Dictionary (2002).

Meyer would have found much to admire in the work of Pernilla Danielsson (2003), a modern linguist specializing in the analysis of large corpora of speech and writing. The following statements from one of her recent papers echo themes that were central to Meyer’s approach to probability in studying music usage:

We should be primarily interested in the recurrent patterns, because these patterns give us valuable information on usage. What we must be careful of is not to misinterpret the data by simplifying the system. Harris . . . and Firth . . . [pioneers in studying language usage] among others, both described language as poly-systemic and one of the problems with raw frequency is that we may mix up data that is interrelated on different levels. (114)
The example “a second hand clock” will reveal all the difficulties involved in this [WSD, or automated Word Sense Disambiguation]. The word second, in reference to a clock, would be a 60th part of a minute, the word hand will be the part of a clock that shows time, yielding the interpretation that this is a clock with a hand showing seconds. The idea that you buy a used clock will not be interpreted at all. What these WDS algorithms have ignored completely is the question of whether or not it is feasible to expect all words to have distinct word senses. (113)

Danielsson’s view of language in 2003, with its emphasis on multiple systems, levels, and meanings, is fully consonant with Meyer’s statement of 1956 that “the probability relationships prevailing within the system are a function of context within a particular work as well as within the style system generally. The occurrence of any sound or group of sounds, simultaneously or in sequence, will be more or less probable depending upon the structure of the system and the context in which the sounds occur” (45).

“Probability relationships” may even play a role in how humans, starting from an imagined blank slate, learn to recognize closure in music, a term that was axiomatic in most of Meyer’s music analyses. The question might be posed, “How would an infant, listening to a very long series of musical events that matched a varied but typical sampling of event successions in actual works by Beethoven, ever learn the syntax of those events?” Adult listeners might say, “Event D ‘wants’ to go to event E,” or “Event J closes off a phrase.” But could this adult knowledge be deduced just from a series where every event but the very last is always followed by another
event? In real music there would be external clues added by performers, such as pauses or diminuendi. But would the series itself contain sufficient internal clues?

Evidence from the study of motion sequences in films, where viewers were asked to indicate event boundaries (Hard et al. 2006) shows that people are quite consistent in separating off certain event sequences as units. Computational studies show that information about the moment-to-moment probability of the next event occurring can be used to detect the closure of a preceding sequence (Reynolds et al. 2007). For purposes of illustration, imagine the series of twelve events shown in Figure 1. The line marked “Probabilities” indicates the likelihood (learned from prior experience) of each successive event following the previous one. For instance, one has few if any expectations for the first event, so it’s probability is shown as 0.0. Note then how, following Meyer, the probability of succeeding events rises until, at event no. 6, the probability suddenly decreases. The sudden decrease of probability, or of expectation, may help to define closure, as indicated by the vertical “double bar” in the line marked “Grouping.” Repeated experiences with similar short series of events may lead us to remember them as known patterns or categories.

Events: 1 2 3 4 5 6 7 8 9 10 11 12
Probabilities: 0.0 – 0.2 – 0.4 – 0.7 – 0.97 – 0.1 – 0.1 – 0.3 – 0.2 – 0.7 – 0.97 – 0.1 . . .
Grouping: - - - - - - - - - - - - || - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -}
Category: a a a a a b b b b b b b c . . .

Figure 1  How sudden decreases in transitional probabilities might indicate closure and thus the
boundaries of items perceived as a group or category.

Our innate sensitivity to the probabilities of events opens the door to statistical learning, a “bottom-up” process. Memories of similar series, over time, can lead to recognition, sharpened expectation, categorization, and association, which are “top-down” effects. Again, in Meyer’s words, “the probability relationships prevailing within the system are a function of context within a particular work as well as within the style system generally.”

The Eighteenth Century Considers Usage

In his Correctness in English Usage, 1700–1800, S. A. Leonard (1929; reprint 1962) describes two contrasting approaches to usage that were in conflict during the eighteenth century:

The one assumes the power of reason to remold language completely, and appeals to various principles of metaphysics or logic, or even makes pronouncements on mere individual preference posing as authority, in the endeavor to “correct, improve, and fix” usage. The other, while admitting the usefulness of purism in recommending what may be regarded as improvements, recognizes language—even cultivated language—as a vastly complicated and often haphazard growth of habits stubbornly rooted, the product of great variation in social soil and climate, not more readily changed by fiat into clipped and formal garden pattern than is any vast area of swamp and jungle and timber-line
Examples of the first approach can be found in high-school classrooms today, where young dwellers in the “swamp and jungle” of real language are told that they can relocate to a “formal garden” if only they would learn the rules. The best minds of the eighteenth century were in many ways wiser than the pedants who later came to rule Victorian England. Joseph Priestley (1733–1804), today most famous for having discovered oxygen, was an eighteenth-century man of many interests. He took the second approach to usage in his influential *Rudiments of English Grammar* (1761):

It must be allowed that the custom of speaking is the original, and only just standard of any language. We see, in all grammars, that this is sufficient to establish a rule, even contrary to the strongest analogies of the language with itself. Must not this custom, therefore, be allowed to have some weight, in favor of those forms of speech, to which our best writes and speakers seem evidently prone; forms which are contrary to no analogy of the language with itself, and which have been disapproved by grammarians, only from certain abstract and arbitrary considerations, and when their decisions were not prompted by the genius of the language; which discovers itself in nothing more than in the general propensity of those who use it to certain modes of constructions? (ix–x)
Victorian music treatises, especially those devoted to harmony and form, took Leonard’s first approach to usage. They attempted to “correct, improve, and fix” the students utterances through “certain abstract and arbitrary considerations,” an approach that remains dominant in twenty-first-century classrooms.

Eighteenth-century music treatises, written predominantly for genteel amateur readers, closely resembled contemporary books of etiquette. One can find a code of conduct for consonances and dissonances, a how-to summary of figured bass, and descriptions of good musical manners in the realms of ornamentation, ensemble playing, and text setting. In terms of music usage, these treatises can be quite informative, inasmuch as they combined technical descriptions with asides referring to various contextual contingencies. Yet it is always worth bearing in mind that professional musicians did not learn their craft from these treatises. Professionals became professionals through apprenticeship at an early age, and they learned their craft by emulating musical models taught to them by their master, just as would apprentices in any other craft. A seven-year-old apprentice, who worked full time for no wage beyond his food and clothing, would be no more likely to own the two sumptuous folios of Fux’s Gradus ad Parnassum than would a London street urchin be likely to own a leather-bound copy of Milton’s Paradise Lost.

Our present knowledge of past musical apprenticeships is limited by the oral tradition in which instruction took place. Few physical traces of this instruction have survived. The great exception occurred in Naples, where the Church had set up several orphanages (It., conservatorii) to conserve fatherless or abandoned boys (Fabris 2007). In the seventeenth
century, four of these institutions began to teach the craft of music as a suitable trade. As the institutions grew to include hundreds of music apprentices, more and more pedagogical material was produced and archived. In spite of the ravages of time, and the low status of this material, thousands of pages from lesson books have survived. We can thus say, with some confidence, how a musical apprentice learned cadences in the eighteenth century.

The core of the Neapolitan tradition of basic cadences can be found in the rule book or Regole (1775) of Fedele Fenaroli (1730–1818), a contemporary of Priestley. Fenaroli taught the boys in Naples three cadences, titled Simple (semplice), Compound (composta), Double (doppia), as shown in Figure 2. Neapolitan maestros only wrote out the basses for their students, so the upper parts shown here are reconstructions based on contemporary, fully notated works.

![Figure 2](image)

**Figure 2** The three basic cadences as presented by the Neapolitan maestro Fenaroli in 1775.

Fenaroli is important for codifying Neapolitan tradition in a way that could, in the nineteenth-century, be printed and disseminated outside the conservatories. The codification was at the same time a partial simplification, for if we look at the simplest cadences taught in the rule book (Pastore 2003) of Fenaroli’s teacher, Francesco Durante (1684–1755), we see no cadence as simple as Fenaroli’s *cadenza semplice*. Durante’s first cadence is Fenaroli’s second, as shown in
Figure 3. Fenaroli's second type of cadence was the first type of his maestro Durante, ca. 1740.

Similarly, Durante's second cadence is Fenaroli's third, though Durante's usage favors a 7th on the downbeat of the second measure and a more elaborate approach to the dominant chord.

Near the beginning of “Nature, Nurture, and Convention,” Meyer (1992, 233) presents a cadence by William Byrd (ca. 1540–1623; see Fellowes 1937–50) as a counter example intending to show how the lack of a coordinated attack of the 6/4 chord by the upper voices, and the 6/4 sounding on a weak beat, distinguish it from an example by Mozart. Reproduced here as Figure 5, the reader can verify that this cadence from Byrd’s Ego sum panis vivus (in print by
1607), is a very close match to a revoicing and transposition of Durante’s *cadenza doppia*.

![Figure 5](image)

Figure 5  A cadence from William Byrd’s *Ego sum panis vivus* (m. 34) and a revoicing of Durante’s *cadenza doppia* (cf. Fig. 4).

Thus Byrd’s cadence is not, as Meyer seemed to suggest, merely an elaboration of a 5/4-to-5/3 progression but rather a prototypical instance of the *cadenza doppia*. More than a century separates Byrd and Durante. During that interval, the art of music was supposed to have been transformed from a contrapuntal to a harmonic epoch. Yet Durante’s voices seem no more “subordinate to a succession of chords” than Byrd’s, and Byrd’s voices seem no more independent of chords than Durante’s.

In the generation before Durante, the Neapolitan maestro Gaetano Greco (ca. 1657–1728) taught a series of “Simple Cadences in Major Keys” (*Cadenze Semplicé delle Chiavi di Terza Maggiore*; Greco, n.d.), with the first key being G major (as shown in Figure 6).
Figure 6 A series of progressively more complex cadences as taught by the earlier Neapolitan maestro Gaetano Greco, ca. 1700.

Notice how Greco presents, one measure at a time, six variants on the approach to the 4-3 suspension. Each is a small usage that when learned, became embedded within the larger knowledge of cadences that the apprentice would develop through years of practice. The concept of the cadential 6/4 progression was unknown to these apprentices, for whom it would have represented just one of many variants of cadential behavior. For them, it was more a manner, a particular usage, than a foundational concept.

Meyer, in advocating an engagement with the dynamic ecology of musical patterns in their native habitats, provided a sophisticated framework for understanding music usage. My intention in pointing out limitations in his treatment of the 6/4 chord has only been to show how his own insightful precepts offer a better path toward a modern understanding of Satztechnik than one based on Harmony Simplified, to quote a title from Hugo Riemann (1893). The Festschrift bon-bon that he served up in “Nature, Nurture, and Convention,” like the collection of Rossini’s Péchés de vieillesse (Sins of Old Age), was less a finished work than a postcard sent to a younger generation who might, in time, recognize its message and travel a bit further along the journey. At the end of his last published essay (1998, reprint p. 303), Meyer summarized this charge to us:
Recognizing the existence of universals and theorizing about their nature is indispensable because we can construct a coherent aesthetic and a viable history of music only by scrupulous attention to nature as well as to nurture and by trying to understand and explain their intricate interactions. Music speculations and arguments do not pretend to be definitive; they should, rather, be thought of as hypotheses. All need to be tested against the facts of human behavior. The real work remains to be done.

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