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Edited by Walter Frisch: Brahms and His World

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Time and Memory: Concert Life, Science, and Music in Brahms's Vienna

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How can one grasp the nature and impact of Brahms's musical language and communication in his own time? In the first instance one has to guard against an uncritical sense of the stability of musical texts, their meaning, and how they can be read and heard. The acoustic, cultural, and temporal habits of life of the late nineteenth century in which Brahms's music functioned demand reconsideration if the listener in the early twenty-first century wishes to gain a historical perspective on Brahms's music and its significance. A biographical strategy and the history of critical reception themselves are insufficient.

Brahms's considerable success and notoriety, in Vienna and in German-speaking Europe as a whole, can be approached by a speculative effort to understand better the making of music, the thinking about music, and the listening to music during the latter half of the nineteenth century. In reconstructing the world in which Brahms worked and trying to reimagine the exchange between Brahms the composer and the various publics to which his music was directed—the meaning of musical discourse in Brahms's era—one aspect of nineteenth-century life and culture on the periphery of musical life can be useful: science and the philosophical and psychological speculation related to it.¹

Understanding Brahms, his ambitions as an artist, and his impact on his contemporaries requires a grasp of the centrality of science and technology in Brahms's world. His friend the Swiss writer J. V. Widmann described Brahms's own perspective: "Even the smallest discovery, every improvement in any sort of gadget for domestic use; in short, every sign of human reflection, if it was accompanied by practical success, delighted him thoroughly. Nothing escaped his notice . . . if it was something new, in which progress could be discerned." Except for the bicycle, Brahms "felt himself

lucky that he lived in the age of great discoveries, and could not praise enough the electric light, Edison's phonograph, and the like."² For example, Brahms welcomed innovations in the design and manufacture of pianos.³

This widespread late nineteenth-century fascination with scientific progress was sufficiently pervasive to influence the conception of music and the musical experience. The enormous body of writing about the physics of sound, the psychology of hearing, the design of sound-producing instruments, and the aesthetics of music from the latter half of the nineteenth century mirrors the intersection of the intense enthusiasms for both music and science. The application of varied scientific and philosophic methods to the nagging questions of beauty, memory, time perception, the nature and meaning of music, consonance, and the historical evolution of musical communication illuminates habits of musical expectation, listening, and judgment. Systematic thinking, talking, and writing about the lure and consequence of music in themselves were important aspects of the musical experience, particularly in Brahms's Vienna. The writings of such diverse individuals as Hermann Helmholtz, H. A. Koestlin, Heinrich Ehrlich (Brahms's colleague in the 1850s), Theodor Billroth, and other members of the university faculties of Vienna and Prague (e.g., L. A. Zellner, Richard Wallaschek, and the great Ernst Mach) provide evidence of conceptions of music that both mirrored and influenced the contemporary evaluation of the experience of music. In order to make this connection, however, dimensions of the musical world Brahms inhabited require clarification.

I. The Character of Viennese Musical Culture

The salient dimensions of Viennese musical life during Brahms's years were (1) the existence of an active amateur choral tradition; (2) the broadening, redefinition, and domination of music education (as well as the transformation of the ideal of musical sound) by the modern piano in the form it took after the late 1860s; (3) the evolution of musical connoisseurship through reading about music in newspapers, journals, and books; (4) the slow extension of concert life until the 1890s and the gradual formation of a canon in the repertoire; and (5) the professionalization of music history as an aspect of historicism in musical taste.⁴

When one thinks of Brahms's public, particularly in Vienna between 1862 and 1897, one can distinguish among three discrete generations. The first was composed of those who had come of age before 1848: a cohort that included individuals of the ages of Franz Grillparzer (1791–1872), Felix Mendelssohn (1809–47), and Robert Schumann (1810–56). The

second was made up of Brahms's exact contemporaries, those born between 1825 and 1848: individuals who had reached full maturity during Brahms's lifetime. The third and last group included those who were young in comparison to Brahms: the generation around Gustav Mahler, individuals born in the 1850s, '60s, and early '70s.

The first group witnessed the great expansion of musical culture. The piano, although the subject of steady technological change between 1820 and 1860, became the leading instrument of musical communication. The first great period of virtuosity and concert life occurred between the years 1815 and 1848. Central to this first generation, however, was the voice and singing. The piano still played a secondary role in music education, in the cultivation of a mode of musical expression that linked words and music. Furthermore, amateur proficiency on string instruments competed and held its own against keyboard amateurism. This was the generation for whom Beethoven remained the towering presence. The rediscovery of the musical past, beyond the occasional Handel oratorio, was begun by Mendelssohn and his contemporaries. This generation fought the first battle for the attention of a wider public on behalf of serious music, past and present, and for music as a Romantic art expressive of the poetic and the spiritual. The fight was against the philistine tendencies of theatricality evident in virtuosity and the puerile sentimentality of efforts to entertain a rapidly growing public for music.

It is instructive to speculate about the impression the Viennese from this first musically informed generation might have had when Brahms arrived in Vienna in 1862. Apart from the legendary article Robert Schumann wrote about Brahms in 1853, an article on Brahms published in 1856, in perhaps the leading encyclopedic musical lexicon of the era, revealed the extent to which Brahms was regarded as unformed and a radical new spirit, possibly and ironically at odds with a Classical aesthetic. The author, Julius Schladebach (1810–72), a trained physician who composed church music but worked primarily as a journalist, wrote that apart from the enthusiasts who agreed with Schumann's assessment, there were those

moderates who found certainly talent and much courage, but also much rawness, lack of skill, and complete immaturity. The courage was not attributed by them as deriving from Brahms's uncanny artistic powers but, to the contrary, from a lack of skill in formulation, and therefore courage appeared to them rather as presumption, one that overrides arrogantly the laws of beauty and perpetrates lawlessness, without having sufficiently understood and recognized rules and laws; in other words, without having climbed to that level of artistic

training from which one can distinguish freedom from licentiousness. Which of the two camps is right cannot yet be decided today.⁵

This judgment possesses a dimension of irony, considering Brahms's later reputation as a conservative and a Classical master, a reputation best demonstrated by the ceiling painting of the Zurich Tonhalle, which opened in 1895. Brahms was placed next to Beethoven and on a par with Gluck, Haydn, Bach, Handel, and Mozart. Wagner was also depicted, but in profile and slightly obscured.⁶

This early criticism is also significant in view of Brahms's severe self-criticism regarding his command of musical form and materials. Brahms's drive to conquer and extend Classical procedures in his work may have been spurred by the awareness of such criticism from an older established generation. Those contemporaries of Schumann who did not share Schumann's enthusiasm did so not because they followed the path set by Liszt but because they maintained a sensibility far more traditional than Schumann's. Historians have a tendency to overlook dominant tastes and aesthetics that seem not to play themselves out through some progressive and teleological historical narrative. Schumann, after all, generally was not viewed by his contemporaries as a conservative.

It was in the second generation, however—Brahms's exact contemporaries—that the piano advanced substantially over all other mediums of musical activity. Among amateurs, solo singing was overshadowed by the intense interest in choral singing. In this generation the professional musician came to dominate musical life. In Vienna, for example, only in the later 1850s did the *Gesellschaft der Musikfreunde* place all activities under the direction of professionals and systematically begin to eliminate all amateur instrumentalists from official concerts open to the public at large.

In the midcentury, between 1860 and 1880, music education experienced an explosive growth, fueled by the piano, a stable, cheaply produced item of modern engineering and industry. The piano's growing eminence began to direct the mode of musical education away from techniques of ear-training and pitch recognition to rote methods for training dexterity so that individuals could play finished works. But in this generation amateur musical literacy remained high by today's standards. Billroth, for example, possessed exemplary skills and was able to play several instruments and read scores.⁷ Brahms valued his judgment. Amateur composers existed. But during the midcentury musical education increasingly depended on reading about music and the teaching of repertoire and an historical canon, usually beginning with Bach and ending with contemporary composers.

Nevertheless, the overwhelming character of musical culture was one that underscored musical communication as a mode of contemporary expression. New works by living composers took central stage, making music publishing a thriving business, fueled by new works for home and concert hall. The skills of professional and amateur were directed at a vital art form. Perhaps the most important aspect of these years was the phenomenal growth in numbers of individuals engaged in music. This engagement, however, was still tied to the conceit of active playing and singing; and to the conception of hearing, as it related to one's capacity to anticipate, follow, recall, and reproduce what one heard. But it was also in this generation that a tension was felt between the widening of the audience and future standards of taste. Musicality and the appreciation of music were clearly understood to be matters of education and training and superior discernment; emphasis was placed on a high order of cultural development.

The last generation to encounter Brahms as a living composer experienced the gradual decline of the choral tradition, the almost total domination of musical culture by the piano, the erosion of amateur singing and instrumental playing as an alternative, and the centrality of music journalism. Coincidentally, the change in the mode of musical education away from the active command of musical skills toward the training of mechanical facility to reproduce existing works strengthened a perceptible shift in taste. The historical became defined through familiarity, through the repetition of selected repertoire.

Concert life achieved some greater frequency. In 1890 in Vienna, for example, there were roughly 240 concerts among the Bösendorfer, Ehrbar, and Musikverein halls. This number included amateur choral groups and group recitals of students. There were only seventeen professional concerts using large orchestral and choral forces.⁸ And tickets for these were spoken for by an elite. The access to live professional concerts was limited to a mere fraction of the public.

In the decade of the 1880s, a resident of Vienna lucky enough to possess a subscription to the Vienna Philharmonic (which began its tradition of a limited series of regular concerts only in the 1860s) had to wait for nearly a decade to hear all Beethoven symphonies performed by a professional orchestra. The Vienna Philharmonic gave only eight concerts a year, and the tradition of traveling orchestras began in earnest only in the 1890s.⁹ Brahms was in his twenties when he first heard Beethoven's Ninth Symphony in Cologne.¹⁰ It was performed in Vienna only thirteen times in the thirty-four years between 1863 and 1897. In the five seasons from 1890 to 1895, the great Classical composers, from Haydn to Schumann, occupied 35 percent of the repertoire; Brahms, Wagner, and Bruckner

accounted for 12 percent.¹¹ Musical literacy, therefore, depended on active skills, not merely the capacity for listening. When Brahms continually emphasized the need for “proper” learning, the value of hard work, and the essentials of the craft and technique of musical composition, in the sense of historical models as well as normative aesthetic imperatives; and when later in life he complained bitterly about the level of contemporary musical education and training, he was expressing more than his legendary habits of being critical and self-critical. He was articulating a form of generational and cultural criticism.

The transition from the first generation in the musical public to the third generation included a weakening of the skills of literacy, the kind that made Elisabeth von Herzogenberg so alluring. These included the capacity to read a score and hear music, to write down what one heard as well as to play and sing new and old printed music. The shift to piano-based music education and the increasing opportunity, however limited, to be a mere listener only served to weaken the level of active literacy, much less thorough training.

Brahms articulated a widespread concern for the decline in standards that accompanied the extension of the audience during his lifetime. The newer generation became the consumers of lexica, concert guides, and journalistic accounts—genres that experienced enormous success in the 1880s and 1890s. Hermann Kretzschmar’s famous concert guide, which first appeared in 1887—an excerpt appears elsewhere in this volume—gives a glimpse of the standard of education in the late nineteenth century. Kretzschmar assumed sufficient training to hear key changes, melodic lines, and orchestral timbres. The Vienna Philharmonic first felt the need in the 1890s to introduce written descriptive program notes. In both these notes and Kretzschmar’s guide, narrative description functioned as a translating mechanism, designed to enable the hearer to follow and remember by offering a descriptive narration akin to prose fiction, travel guides, or journalistic reportage.

Part of the impetus behind the criticism of Wagner and Bruckner that came from Brahms’s amateur partisans in Vienna (Theodor Billroth, for example) was the recognition that Wagner, through the use of leitmotifs and thematic repetition, and Bruckner, through his own reliance on repetitions and extended moments of exposition, pandered to the new habits of hearing. Their popularity, Billroth suspected, was the result of the public’s ignorance and insufficient musical education.¹² Brahms demanded the true connoisseur: the musical cognoscenti of his and Hanslick’s generation who understood the communicatory power and logic of music alone and could hear a dense, purely musical discourse. As a result of the

shift in music education, the superficial, foreground habit of hearing, recognizable in program notes and guides, became the norm. It was against this norm that both Heinrich Schenker and Arnold Schoenberg—following explicitly a concept of form and technique derived from their understanding of Brahms, and mirroring Brahms’s own critique of composition, his own and others’—would expend their unforgettable vitriol.

Despite Brahms’s suspicion that a decline in musical standards was occurring during his lifetime, the modern reader should not underestimate the extraordinary aura carried by live performances, the premium on memory, and the level of musical literacy the late nineteenth-century audience possessed. Arthur Schnitzler provides a reasonable example. The passion of his youth (his father Johann Schnitzler was a laryngologist who treated many singers) had been the theater. Although Schnitzler was trained as a physician, he played the piano well, using the instrument in quite typical middle-class fashion, playing four-hand repertoire—with his mother and later with the music critic and theorist Viktor Zuckerkandl—often reading through orchestral music.¹³ Schnitzler was literate enough to write a light waltz or two.

Likewise, the type of amateur choral singers with whom Brahms had worked in Hamburg and Vienna in the 1860s and ’70s still existed at the turn of the century. But that tradition was under siege within the amateur world with the dramatic success of the operetta and the resultant popular song. In short, a dimension of Brahms’s self-image as the last of a tradition, and the view of him as conservative and poised toward the past and not the future, was the consequence of his sense that a tradition within the musical public was dying: the mode of musical communication he sought depended on a literacy in increasingly short supply. As he often commented, his critique of Wagner was hardly musical in the narrow sense, but was directed against his influence. Those who attacked Wagner as a musician were quite ignorant. At stake was not style but the survival of a language of expression and communication among people that had flourished between 1750 and 1850.

Rudolf Louis, writing in 1912 about the music of his time, observed that the natural tendency of “the young to underestimate the value of artistic form” had become extreme. Although Brahms’s self-appointed successors were largely too academic, the composers who considered themselves followers of Wagner (and Brahms’s true opposite Liszt) easily overlooked Brahms to their peril. Brahms’s “masculine” character contained secrets, which could be unlocked. But the mechanism required a capacity to grasp his command of counterpoint and form—Brahms’s “hard earned” and staggering command of the language of music. Not only to write music

but to hear it, remember it, and respond to it required a discipline and training Louis regarded as all too rare. The enemies of music were “artistic dilettantes” and “professional experts” (by which Louis meant music journalists and historians) who did not possess the skills of music making but thought that writing about music was sufficient.¹⁴

Brahms, in all his work, wrote for an audience. The several genres he used all had a public. Often, as in the *Liebeslieder* and the later piano works, there was clearly a playing and listening audience. For both, comprehensibility was an overt goal. Brahms accepted that premise, but without concessions.

Brahms's often-quoted letter to Adolf Schubring regarding the imputed motivic unity of the *German Requiem* made clear that sophistication in compositional skill was not to be pursued at the expense of comprehensibility: “If I want to retain the same idea, then one should recognize it clearly in every transformation, augmentation, inversion. The opposite would be idle playing around and always a sign of impoverished inspiration.” In discussing a particular set of variations, Brahms claimed that the bass line was the stable basis for his creativity. The elaboration of the melodic over a constant foundation achieved both comprehensibility as well as a proper avenue for original expression.¹⁵

If music was to be its own communicative medium, then subtlety in elaboration—the development across a long form of ideas and a new landscape of musical imagination and expression—had to carry the player and/or listener along. Therefore, from the start, a dimension of comprehensibility was required, although not through the linear sequences of Wagner. The comprehensibility was contingent on a deeper level of musical education. This conceit was only strengthened by the polemical example and perspective articulated in Schumann's critical writings. Brahms's ideal audience, whether in the short piano works, the *German Requiem*, the symphonies, the songs, or the chamber music, were individuals who could either play or follow him and, in Louis's words, “uncover the hidden soul of Brahms's world of sound.”¹⁶

II. Music and Science

Without question, the most significant contribution to the relationship between science and music to occur in the second half of the nineteenth century was the publication of Hermann Helmholtz's *On the Sensations of Tone* in 1862. (A fourth edition appeared in 1877.) Helmholtz's subject included both the physics of sound and the physiology of perception. Helmholtz established the reigning definition of consonance (defined by equal temperament) and therefore dissonance. He dissected musical sound from the point of view of the source. He then analyzed the mechanism of perception and described what we hear and why. He spun a theory of the evolution of keys and tonality, and of the relationship between musical tones.

But Helmholtz drifted, despite his disclaimers, into the realm of aesthetics and the evolutionary history of musical systems. He took great pains to argue that the "modern" system of music was "not developed from a natural necessity, but from a freely chosen principle of style." Yet he regarded earlier historical periods as having less "perfect" systems, and concluded that "it has become possible to construct works of art, of much greater extent, and much richer in forms and parts, much more energetic in expression than any producible in past ages; and hence we are by no means inclined to quarrel with modern musicians for esteeming it the best of all."¹⁷

Helmholtz, in his conclusion to his work, avoided deriving aesthetics from empirical findings. But there was no doubt that the system of harmony of the nineteenth century had its justification in the physics of sound and the apparatus and process of perception. Helmholtz realized that art extended beyond nature. Two arenas were required to understand fully the links between art and nature: the psychology of perception and the philosophy of knowledge (epistemology), and philosophical psychology.

The power of Helmholtz's work was that it lent justification to those who saw in it a scientific vindication of a set of aesthetic, formal, and, in particular, harmonic procedures.¹⁸ But at the same time, Helmholtz's genius and subtle awareness of the limitation of his empirical analysis—the limitations of scientific argument in establishing cause and effect—as well as his acute awareness of the problem of understanding aural perception and the consciousness of hearing, inspired the development of theory and research that justified the fundamental relativity and culturally determined character of musical systems and aesthetic norms.

The tradition of speculation begun by Helmholtz generated quite opposing schools of inquiry. In the history of twentieth-century aesthetics, this resulted in the radically opposed theories of Schenker, who argued the natural scientific basis of tonality, and Schoenberg, for whom, in the theory of

the emancipation of the dissonance, perceptions of consonance and dissonance had purely historical and environmental determinant causes. An entirely new system of harmonic musical combinations could be developed. Schoenberg, however, continued to adhere to normative notions of the way music functioned in time and could be perceived to be derived from tonal practice. That permitted him to defend canons of form and structure and standards of judgment regarding musical craft, *per se*, above and beyond the logic of any specific harmonic system.

The impact of Helmholtz's book was extraordinary. It had a direct influence on the design of instruments, primarily the piano, especially through the relationship between Helmholtz and C. F. Theodore Steinway. Helmholtz seemed to have helped to solve the problem of how to build a stable instrument that could be tuned, remain reasonably in tune, and possess a rich, resonating sound. Steinway's famous duplex scale patent of the 1870s owed its origin to Helmholtz.

Helmholtz's work contributed significantly to the standardization of pitch and tuning in the late nineteenth century and to the establishment of an international standard tuning system (or the effort to do so). Brahms's colleague in Vienna, L. A. Zellner (for whom Brahms had little use), who was the longtime secretary of the *Gesellschaft der Musikfreunde*, lectured on aesthetics at the conservatory and organized an international symposium in Vienna in 1885 to establish standard pitch levels.¹⁹

Brahms, despite his dislike for theorizing, particularly about music, was no doubt aware of the intense interest in acoustics, hearing, and aesthetics surrounding him among his medical, scientific, and musical colleagues. Zellner's lectures and his fanatical efforts on the issue of pitch standardization reflect Helmholtz's influence and the conviction that there were links between aesthetic judgment, physiology (and therefore nature), and ultimately between the education and cultivation of the physiological capacity to hear. Aesthetic judgment in music became closely tied to the cultivation of natural properties, giving subjective perception, when fully developed, an objective basis, particularly in the matter of musical form, the use of time, and the harmonic structure of a work.²⁰

The sociological implication was equally clear. Those who could develop their natural potential for musical discrimination were a superior lot. Musical cultivation was learned, perhaps not at high levels for all. As such, that learned skill was the *sine qua non* for judgment. A physiological and scientific basis for the judgment of the well-trained few over the many was, in Zellner's judgment, self-evident.

But beyond the arena of manufacture and the regulation of pitch, Helmholtz's work spurred a whole field of acoustical research. This research,

throughout the nineteenth century, kept its links with the aesthetics and history of music. Furthermore, Helmholtz sparked a series of intense anatomical and physiological investigations into the design and function of the ear. How do we hear? Was there a physiological basis for not only how we hear, but how we discriminate and sort out sounds, particularly consonant from dissonant ones? In modern terms, as Noam Chomsky has argued concerning the innate capacity to fashion and grasp grammar and therefore language, the researchers of the nineteenth century sought to test the hypothesis that modern notions of harmony and beauty were not only the result of a progressive historical evolution but also the mirror of the natural physiological design and logic of the ear. Consequently, the field of psycho-acoustics was created.

In turn, the line of reasoning that asked questions about how we hear drifted into the more fundamental issue of what is being heard; about the relationship between object and subject, between perceiver and perceived. Particularly under the sharp scrutiny of Ernst Mach, who first wrote on Helmholtz in 1866 and who was an avid amateur musician (with a preference for the harmonium, one of the nineteenth century's most popular amateur domestic instruments), an entire epistemological theory evolved regarding perception and reality.²¹ The intense preoccupation with music and hearing might be said, not entirely facetiously, to have altered the direction of modern science and been an essential historical precondition for relativistic mechanics and modern physics. Albert Einstein's notorious love of music (despite his dubious skills as a violinist) culminated a decisive seventy-five years of symbiotic contact between science and music.

The impetus behind Helmholtz's book and its consequence for music in the nineteenth century, particularly the perception of music, its character and history, can be gleaned from two leading popular tracts of musical aesthetics: H. A. Koestlin's *Die Tonkunst: Einführung in die Aesthetik der Musik* of 1879; and a book of 1882 by Brahms's friend Heinrich Ehrlich, *Die Musik-Aesthetik in ihrer Entwicklung von Kant bis auf die Gegenwart: Ein Grundriss*.²²

Both Koestlin and Ehrlich began from the premise that their books, designed for the layperson, reflected the fact that, as Ehrlich wrote,

music is, of all the arts, the favorite, perhaps the especially selected favorite of modern society. It constitutes the dearest ornament of domestic life . . . it is the most widespread and most practiced art. The greater public finds from it the most facile accessible distraction which possesses an elegant form; for the educated society music is an effective means of connection; high society likes to acknowledge

music as the most important ethical means of education, because music is the politically least dangerous art; many noble individuals consider music as the purest art.²³

Ehrlich noted that the two schools of music in the nineteenth century—the absolutists and those who regarded music as connected to speech and the visual—placed extraordinary demands on the meaning of music. The formalists, the absolutists claimed for music a “meaning for the life of the soul” greater than in all other arts. Ehrlich wrote, “The phenomenon such as the following is not easy to explain: that today the majority of the public finds more pleasure in music than in all the other arts.”²⁴ Yet music seemed to make fewer demands on thinking, making any serious evaluation of why this passion for music existed difficult. Ehrlich concluded:

This phenomenon just referred to can be explained only in the context of the entire cultural life, out of the relationship of the work of art with ideas of the time, and the reciprocal impact between artist and public, that today still is supported by other means than the pursuit of art alone.²⁵

Ehrlich, among others, identified the recent research into the nervous system, starting with Helmholtz’s theory of hearing. Ehrlich argued that it helped to explain the impact of music on the mind and “the legitimation of the historical development of particular nations, from which important works of music have emerged.”²⁶ Ehrlich concluded that the scientific research of the recent past created an agenda for the aesthetics of music to use the knowledge of science to understand why people got excited about music. But to base aesthetics on a firm footing, enabling it to achieve sufficient clarity to forge a serious link between the development of aesthetic taste and the development of a moral sense, one had to create a science that could underpin aesthetic judgment. Having understood the science of subjective response, it was possible to build an independent but linked system of the rules of beauty, to define and link the beautiful with the good.²⁷

Like Ehrlich, Koestlin was in search of answers, about not only the nature of music but also its impact on its public. Like Ehrlich, Koestlin sought to reconcile the objective findings about hearing with the apparent subjectivity of aesthetic judgment. However, Koestlin sided more clearly with the idea that the Helmholtz studies and their impact through later work (that of von Oettingen and Riemann) could justify a formalist, Herbartian aesthetic. That aesthetic might justify the autonomy of music even though it

could also explain the success of the Wagnerian synthesis of music, words, and images. Koestlin wrote:

The effort will be justified to take into consideration the construction of musical aesthetics in the first instance, and the particular nature of the material out of which musical art makes its forms, instead of, as before, taking concepts and claims from some other arenas and imposing them on the face of music. So perhaps we are close to that time when a satisfactory aesthetics of music will be available to us; that is, a presentation of the unique character and unique laws of our art which derives from the nature of sound and the particular existential conditions of the musical work of art.²⁸

The direct impact of this mix of science and aesthetics was the triumph of the idea that music was autonomous among the other arts, perceived differently and bereft of content in the ordinary way. Within the well-known nineteenth-century debate between the Wagnerians and the followers of Liszt and the formalists, Hanslick, and others, in which Brahms somewhat reluctantly assumed the symbolic role of the “counter-pope,” scientific speculation seemed to vindicate the anti-Wagnerians on two accounts. First, the evolution of music, by analogy with evolutionary theory, rendered instrumental music and the modern system of harmony the highest forms of development within a historical logic that was progressive and selective. The independence from the voice and speech was historical and reflected the increasing complexity of self-sufficiency of modes of sound production and modes of perception. In this sense, Wagner could be justified, if at all, only in so-called purely musical terms.

Second, the specific character of tones and their logic, as well as the receptivity of the human ear, as a triumph of evolution led to the judgment that music was the purest art form since it was the most abstract, the most spiritual in the sense that it was the most rational—divorced from raw daily experience. The formal compositional procedures that organized sound into art (e.g., harmonic relationships and rules of counterpoint) were located in the objective nature of music itself as well as in the selective evolutionary process that established a valid tradition.

Richard Wallaschek (1860–1917), a Viennese aesthetician and music historian who, after working in England, returned in 1895 and subsequently taught at the university and at the conservatory in Vienna, provided perhaps the best summary of the impact of scientific inquiry into hearing and musical sound on the aesthetic prejudices of the late nineteenth century when he wrote in 1886:

A comparison with the remarks made here about the musical work of art with the general remarks about the beautiful will reveal, with spontaneous logic, that through music the highest beauty can be achieved, because the forms that music provides are tied to no comprehensible content, but at the same time permit access to all—because musical forms reproduce in tones the general form of all experience to which spiritual activity is connected. Music constitutes the spiritual progress of modernity in comparison to antiquity in terms of the forms of perception. Music is the algebra of the arts.²⁹

This credo corresponded closely with Brahms's convictions about the normative character of musical form and language. Brahms's much discussed concern with historical models was driven by an absolutist instinct: that music as an independent mode of human experience was at once tied to human experience *per se*—the emotions and thoughts that humans display and have expressed in all of history. That independent element of expression and perception experienced a gradual historical clarification. In this sense, progress in science was regarded on a par with progress in musical technique and aesthetics. The conceit of certainty was such, however, that the forms of musical art seemed clearly understood. The past had bequeathed objective standards on the way in which musical materials might be used, true rules of the grammar of musical language.

Originality and individuality expressed themselves within a normative framework in which a future was possible because the framework, based on objective physical and physiological phenomena, was well understood. As Brahms urged younger composers, serious training in the rules of that framework was indispensable if one wanted to write great music of the sort that Wagner and Schumann luckily managed to write without the proper fundamental training.³⁰ The historicism of Brahms's formal models and procedures—in sonata form and variation—was justified as an act of building on the truth, much as a scientist of Brahms's generation might build on proven hypotheses and then modify, elaborate, and revise that truth. In the modification—as in the case of Wagner and the occasional new discovery—the cumulative progress of knowledge and the expression of individuality could be reconciled.

When one *fin-de-siècle* critic compared a Brahms symphony to “a chemical and mechanical structure,” the metaphor was not off the mark.³¹ Brahms's aesthetic convictions and his self-image as a composer mirrored the culture of science in which he lived and in particular a contemporary conception of music, musical form, musical perception, and musical judgment widespread in German-speaking Europe. This conception was

profoundly influenced by scientific speculation about the phenomena of music and their aesthetic implications. Brahms satisfied the widely held opinions and expectations among the educated, cultivated audience of Vienna and other major cities about what music was, and could do; about what was required to appreciate it; and why it was so alluring. His music, more than Wagner's, was self-consciously non-populist and reinforced the identification of cultivation and learning with aesthetic taste. Brahms's work underscored views about the nature of music and the necessity, if not exclusivity, of an education that empowered the elite individual truly to comprehend the purest and most objective form of art.

III. Theories of Sensation, Time Consciousness, and Habits of Listening, 1885–1905

Helmholtz's work spurred a new set of questions about how and why we perceive sounds, and how we conceive of the logic of time, and therefore retain and remember sequences of sound that possess their logic in associations with words or pictures. If Brahms's music, as has been suggested, played into the conceits of the successful cultivation of the understanding of objective musical elements and their combinations, then it was nearly inevitable that the fundamentals of that conceit of understanding itself would undergo critical scrutiny. The centrality of musical communication in the world of educated citizens in which Brahms lived was such that this critical enterprise entered at the center of epistemological discourse.

The journey from physics to psychology and then to philosophy can be traced in the work of Ernst Mach and Edmund Husserl. Both were citizens of the Habsburg Empire, and both experienced the lure of music as a mode of communication, in their social milieu and their own private lives. Through a look at their ideas, one can generate a speculative model of how the audience for Brahms's music listened—the player and listener alike—before access to mechanically reproduced music (i.e., before 1910) became widespread. The assumptions about perception, recall, judgment, and expectation with which Brahms worked as a composer can be revealed, albeit indirectly. The logic of his formal procedures can then be illuminated, if only from the outside.

In Ernst Mach's notebooks from the early 1880s, one finds the following fragment:

The spatial is reversible. It must be contingent on time. Music as a special instance; Music. The spatially reversible. The temporally

irreversible; The same melody in different registers. The Third. Numerous ways. The form of sound. Conflict of sensations; The form of sound with the form of time. A tone is already a composite sensation. A mixed sensation.³²

Mach's ruminations about the character of the perception of space and time led him finally in 1886 to the radical conclusion that in its subsequent elaborations would provide an impetus for Einstein's theory of relativity.³³ Mach denied the absolute character of space and time:

The physiology of the senses, however, demonstrates that spaces and times may just as appropriately be called sensations as colors and sounds. . . . Nothing will be changed in the actual facts or in the functional relations, whether we regard all the data as contents of consciousness, or as partially so, or as completely physical.³⁴

Mach opened up the radical possibility that scientific fact, as such, derives from the frame of reference of the perceiver, from the act of sensation. He did so by also denying the existence of a metaphysical ego, the "I," and therefore ending up with a monistic standpoint.

The appeal to nature as an external physical phenomenon was undercut. The perception of form and time duration, therefore, required an analysis quite different from that of Helmholtz: an analysis of how we mentally construct a sense of time. The center of Mach's argument in 1886 dealt with "The Sensations of Tone." Mach had greatly enlarged the research on the physiology of the ear. But his conclusion was that the perception of music was exclusively "a collateral product of [his] education . . . what we call talent and achievement . . . constitute but a slight departure from normal endowments."³⁵

What Mach concentrated on was the notion that in music there was no absolute symmetry. Music possessed the spatial association of high and low but not right and left. Furthermore, a sense of order derived from the creation of a series of sensations and their remembrance. The logic of a series could not be derived from nature. Mach denied any scientific ability to prefer objectively one interval over another and broke any residual link between external physical reality and the aesthetic priority of consonance.

Furthermore, Mach speculated on the attention span and capacity to order a series of notes and intervals. He stressed the context of remembrance. For example, he cited the link between the interval of a fourth and the Overture to *Tannhäuser*. The hearing of the former could imply the latter, and vice versa. The aesthetic judgment of pleasure in sensation for

Mach was based on the fact that “the harmonic or the melodic addition of one to another affects agreeably only when the added tone reproduces a part of the sensation which the first one excited.”³⁶

In the discrimination of musical beauty, apart from references to the Helmholtzian overtone series in terms of how tones might be perceived by the ear, Mach distinguished between visual and aural perception, between the perception of space and time. Why can we consider a melody the same when it is transposed to a key where there are not even common overtone partials? Furthermore, one can distinguish common rhythm despite differential pitches that make two separate melodies. Rhythm is easier to distinguish than elapsed time or even tempo. The answer lay, for Mach, in the process of self-consciousness about orientation, about the mechanisms of selective self-representation in time and space. Mach’s work constituted an effort to rescue the efficacy of science as a universal construct by retreating, so to speak, to the exclusive legitimacy of the act of perception. He generated a kind of legitimate, functional scientific impressionism.³⁷

The dramatic shift of emphasis from the work of art to the hearer mirrored the historical reality. Any given work of Brahms was contingent not only on intent but on perceived meaning. Although Mach, in line with his social philosophy, sought to reduce the distance between the normal and the genius, Brahms sought to communicate with compositional procedures that could reach a highly developed discriminatory sensibility. The capacity to follow and recall long stretches of variation and thematic development required the capacity to orient oneself within the balances among formal integrity, the total duration of a work, and its larger harmonic structure. The relationship of detail to form, sequential logic to structure as recalled after an initial hearing—comprehending the irreversibility—became a challenge. So, too, was the capacity to perceive the distinctions between levels of form in a complex procedure which, as Schoenberg argued, eschewed evident aspects of musical symmetry (one thinks particularly of Brahms’s playful use of rhythmic asymmetry). All this made demands on the listener’s skill, given that mere “playing around” (*Spielerei*) was not at stake but deep inner communication through ordered musical sounds.

These Machian speculations show in the first instance the centrality of musical experience in the formation of scientific inquiry in the nineteenth century. But they indicate as well the self-consciousness in the nineteenth century of the extent to which a work of musical art was contingent on the hearer, on a symbiotic overlap between authorial intent and subjective perception. Brahms’s adherence to known forms—Classical models and procedure—may have reflected the recognition that innovation

within expectations framed by cultivated habits constituted a more valid and desirable means to assure correspondence between intent and result. The Wagnerian strategy not only simplified demands on the hearer but imposed a speech-based narrative structure and logic, eliminating a musical mode of expression. The purely musical communication was, for Mach, free of association but located—as Mach conceded that Schopenhauer correctly suspected—in a profound inner sensibility not necessarily accessible through ordinary experience or an imagination stimulated by words or pictures.³⁸

Edmund Husserl, at the turn of the century, in his critique of Mach's theory of knowledge, went even further.³⁹ Beginning with Augustine, Husserl focused on the process of internal time consciousness beyond the conscious act of perception. Mental reproduction and recapitulative memory; the difference between hearing a sound and rehearing in one's mind; and the difference between memory and expectation were, in part, Husserl's subjects. Furthermore, the mental rehearing of sounds, the mental reconstruction of the present, and the difference between objective elapsed time and experienced time became troubling issues.⁴⁰ In Husserl's critical extension of the Helmholtz-Mach analysis, the internal psychic construct predominated over an external stimulus or sensation. But at the same time, the power of the mental creation of time, the inner expanse of subjective experience, became not merely evident but primary.

The experience of music was then subject to redefinition. Its social dimension—the shared elapsed time experienced by following a musical narrative—was implicitly compared to the intimate definition of music as heard (i.e., playing at home or hearing at a concert): the manner in which music can trigger internal expansive rehearing, recollection, and transformation, even in strictly musical terms. The music of Brahms, in its comprehensibility and also its complexity, lent itself to an elastic internal interpretation that, since the formalists of the early nineteenth century, had been one of the heralded dimensions of instrumental and so-called absolute music.⁴¹

One might be willing to speculate that the power of Brahms's innovative adaptation of expectancies from within his audience can be understood by looking at his use of time. Brahms, by eschewing speech-based narrative, created at least three levels of perceived time. The first was the time of the unfolding of the work, which proceeded in small units (not, like Bruckner, in large sections). The transformation of material began immediately, merging recollectable symmetries with evident alterations.

Second, there was the use of time divorced from the actual objective surface. This involved the clear units used by the composer (e.g., thematic

material), the time of transformation (e.g., variation), the groupings of events (e.g., movements), which, extracted and reworked and compared by the listener, enabled radically different sensibilities of proportions and focal points—altered durations—within a work.⁴²

Third, there was the perceived time, the experience of time by the listener, in performance and memory.⁴³ This dimension, created during hearing and primarily after, constituted a mixed accumulation of the three other elements. All were contingent on the assumed contact between Brahms and his audience, on Brahms's tacit assumption that intended or novel inferences from the work of art as experienced would be generated that could, despite the necessary process of individual appropriation and variation, approximate the intended experience.

Furthermore, by employing an evidently historicist framework, Brahms sparked the process George Kubler describes for art and architecture. By invoking fragments of the past, the recognition of discarded and retained elements from the past creates a dialectic of time perception: between a consciousness of the present with one of an imagination of the past. In the nearly archaeological invocation of recognizable traditions, Brahms, in his music, far from creating a static temporal or emotional experience, assumed a musical memory for his real and ideal listeners, and created experiences of the historical in the present.

This in turn provided a transformed and flexible reconstitution of the past for the listener. In the context of nineteenth-century Vienna, the musical experience interacted with at least the visual experience of historicism in art and architecture. The self-assertion of novelty on the part of Wagner, together with the historicist language of Wagner's poetry and the aesthetics of the scene painting, may have minimized Wagner's stimulation of inner-time sensibilities within the audience despite the other forms of response he generated.

The subjective time experience in Brahms's music became a means to sense a collective experience of historical time, recast and renewed in the present moment. The use of the historical in Brahms therefore can be understood as a strategy not of "aesthetic fatigue" but of contextualizing to highlight innovation and change. In the microcosm of each work, the present is set apart by the transformation of the evidently traditional.⁴⁴ As Heinrich Koestlin wrote about Brahms's music shortly after the composer's death, "The Romantic wealth of ideas is bordered by the discipline of Classical training, and contained by a hardnosed formal structure. The latter is unique, new, and not a simple repetition or recreation, but rather an organic progressive evolution and an entirely modern new formation."⁴⁵ In terms of the issues of internal time consciousness and its constitution,

the Brahmsian exchange with a contemporary audience mirrored, in an authentic historical exchange, the direction and complexity of Husserl's contemporaneous framing of the issues of subjective time perception.

The density of temporal consciousness and the demands made on the powers of discrimination and remembrance by Brahms's music were severe, even by contemporary standards. In this sense, Brahms realized the ideology of absolute music by eschewing forms of musical realism and retaining the intimate communication associated with the prestige of chamber music. Likewise, Brahms sought to realize a strategy central to musical Romanticism, the cultivation of inner subjectivity. His success depended not only on the level of music education in his audience but on the acoustic and temporal environment in which he operated.

We forget too readily the vast stretches of ambient silence (punctuated not by regular background noise but by more random interruptions) in which the Viennese urban dweller lived and the concomitant space for musical contemplation. The urban environment operated with different expectations of volume and sound color. The absence of live performances and anything approximating today's means of reproduction placed a premium on powers of recollection and rehearing, as well as rereading musical texts in which imaginary sounds were present. This was true as well for the use of the piano for hearing orchestral works.

Apart from the silence and the aura of musical sound derived from its comparative rarity, the Brahmsian use of form and time, the micro-unit of change, and the larger coherences of which Schenker was fond of stressing, one must consider the reception of Brahms's music in terms of the clocks of everyday life. The pace of life and communication, the periodicity of the day (night and day), and the seasons, as well as the perceived value of time ratios—hour, minute, day, year, lifetime, and generational—were significantly different. Furthermore, the rarity of stable mechanical devices in the surroundings with constant power sources influenced time expectations (e.g., a motorcar as opposed to a horse-driven carriage, or a gaslight in relation to an electric current source).

A reasonable hypothesis is that the sense of intensity of time, as well as the tolerance for objective elapsed time (often referred to, in the Viennese context, as *Gemütlichkeit*), suggest that Brahms may have been aware that the writing of music, as it was likely to be experienced, permitted a contemplative intensity (beyond the references accessible by a musically educated audience), bounded by silence and a slower, more irregular daily clock of life than we are accustomed to today. The structure of society, as seen through the conception of time and its uses, was more discontinuous from our own than most musicological analysis has accounted for.⁴⁶

Therefore the mode of perception and recollection, the comprehension of a Brahms work—given the clear hints of historical analogies provided by the composer—cannot be inferred exclusively from the text of music bequeathed to us. Nor can one infer the imputed meaning to the act of hearing and playing. The significance of the musical experience in the nineteenth century heightened the desire to understand the human constitution of time. Husserl's inquiry was an extension of a line of inquiry that had part of its source in issues of art and its perception.

NOTES

1. For a parallel characterization of the milieu in which Brahms worked, see Michael Musgrave, "The Cultural World of Brahms," in *Brahms: Biographical, Documentary and Analytical Studies*, ed. Robert Pascall (Cambridge, 1983), 1–26; Reinhold Brinkmann, *Late Idyll: The Second Symphony of Johannes Brahms*, trans. Peter Palmer (Cambridge, Mass., 1995); and Siegfried Kross, *Johannes Brahms: Versuch einer kritischen Dokumentar-Biographie* (Bonn, 1997). For a comparable piece on painting and Brahms, see my essay, "Brahms and Nineteenth-Century Painting," in *19th-Century Music* 14 (1990). See also Reinhold Brinkmann's brilliant essay, "Zeitgenossen: Johannes Brahms und die Maler Feuerbach, Böcklin, Klinger und Menzel," in *Johannes Brahms: Quellen-Text-Rezeption-Interpretation. Internationaler Brahms-Kongress, Hamburg 1997*, ed. Friedhelm Krummacher, Michael Struck, Constantin Floros, and Peter Petersen (Munich, 1999). More recent scholarship includes Daniel Beller-McKenna's *Brahms and the German Spirit* (Cambridge, Mass., 2004) and Margaret Notley's *Lateness and Brahms: Music and Culture in the Twilight of Viennese Liberalism* (New York, 2007).

2. J. V. Widmann, *Johannes Brahms in Erinnerungen* (Berlin, 1898), 58–59.

3. George S. Bozarth and Stephen H. Brady, "The Pianos of Johannes Brahms," in this volume.

4. See Leon Botstein, "Brahms and His Audience: The Later Viennese Years, 1875–1897," in *The Cambridge Companion to Brahms*, ed. Michael Musgrave (New York, 1999), 51–78.

5. *Neues Universal Lexicon der Tonkunst*, ed. Julius Schladebach and Eduard Bernsdorf (Dresden, 1856), 1:447.

6. See Werner G. Zimmerman, *Brahms in der Schweiz: Eine Dokumentation* (Zurich, 1983), 102–12.

7. This is evident if one reads his correspondence in *Briefe von Theodor Billroth*, ed. Georg Fischer (Hannover, 1897).

8. Ludwig Eisenberg, *Künstler und Schriftsteller Lexikon: "Das geistige Wien"* (Vienna, 1891), 646–50.

9. From Richard von Perger, *Denkschrift zur Feier des Fünfzigjährigen ununterbrochenen Bestandes der Philharmonischen Konzerte in Wien 1869–1910* (Vienna, 1910).

10. Hans Gál, *Johannes Brahms: Leben und Werk* (Frankfurt, 1961), 93.

11. From the perspective of the modern reader and concertgoer, this is an indication of both the rarity of live performances of orchestral works and the gradual acceleration in concert life. Vienna's leading impresario, Albert Gutmann, sponsored 16 concerts in 1890;

39 in 1896; and 86 in 1900. In the three-year period between 1894 and 1897, the end of Brahms's life, 37 percent were vocal recitals, 32 percent were piano recitals, 12 percent violin recitals, 15 percent chamber music ensembles, and 5 percent visiting orchestras. Seventeen percent of the recitalists played their own music. See Leon Botstein, "Music and Its Public" (Ph.D. diss., Harvard University, 1985), app., tables 1–3, n.p.

12. See Theodor Billroth, *Wer ist musikalisch?* (Berlin, 1898).

13. See Arthur Schnitzler, *Tagebuch 1873–1892* (Vienna, 1987), 27 and 128; and *Tagebuch 1917–1919* (Vienna, 1985), 417.

14. Rudolf Louis, *Die deutsche Musik der Neuzeit* (Munich, 1912), 159–62, 328–29.

15. Brahms to Schubring, February 1869, in Johannes Brahms, *Briefwechsel*, rev. edns. (Berlin, 1912–22; repr. Tutzing, 1974), 8:216–17. See the use of the same letter in Walter Frisch, *Brahms and the Principle of Developing Variation* (Berkeley and Los Angeles, 1984), 32.

16. Louis, *Deutsche Musik*, 161.

17. Hermann Helmholtz, *On the Sensations of Tone*, trans. and ed. Alexander J. Ellis (New York, 1954; orig. 1885), 249.

18. *Ibid.*, 365–71.

19. See Max Kalbeck, *Johannes Brahms* (Berlin, 1904–14; rev. ed. Berlin, 1912–21; repr. Tutzing, 1976), 2:27–34; 388–89; also R. Hirschfeld and R. von Perger, *Geschichte der K.K. Gesellschaft der Musikfreunde in Wien* (Vienna, 1912), 191–94.

20. L. A. Zellner, *Vorträge über Akustik: Gehalten am Conservatorium der Gesellschaft der Musikfreunde in Wien* (Vienna, 1892), 2:113–14.

21. See Ernst Mach, *Einleitung in die Helmholtz'sche Musiktheorie. Populär für Musiker dargestellt* (Graz, 1866); and Leo Koeningsberger, *Hermann von Helmholtz* (Braunschweig, 1911), 182–87; and William M. Johnston, *The Austrian Mind: An Intellectual and Social History 1848–1938* (Berkeley and Los Angeles, 1972), 182.

22. On the relationship between Brahms and Ehrlich, see Kalbeck, *Johannes Brahms*, 1:73–75.

23. Heinrich Ehrlich, *Die Musik-Aesthetik* (Leipzig, 1882), 124.

24. *Ibid.*, 2.

25. *Ibid.*, 3.

26. *Ibid.*, 4.

27. *Ibid.*, 134–37 and 173–76.

28. H. A. Koestlin, *Die Tonkunst: Einführung in die Aesthetik der Musik* (Stuttgart, 1879), 260–61.

29. Richard Wallaschek, *Aesthetik der Tonkunst* (Stuttgart, 1886), 230.

30. See Gál, *Brahms*, 147–48; and Imogen Fellinger, "Brahms's 'Way': A Composer's Self View," in *Brahms 2*, ed. Michael Musgrave (Cambridge, 1986), 49–58.

31. Philip H. Goepf, *Symphonies and Their Meaning: Second Series* (Philadelphia, 1902), 361.

32. Ernst Mach, "Auszüge aus den Notizbüchern 1871–1910," in *Ernst Mach: Werk und Wirkung*, ed. Rudolf Haller and Friedrich Stadler (Vienna, 1988), 171–72, 182.

33. See Gerald Holton, *Thematic Origins of Scientific Thought: Kepler to Einstein* (Cambridge, Mass., 1973), 223–25.

34. Ernst Mach, *Die Analyse der Empfindungen*, 6th ed. (Jena, 1911), 6, 28–30.

35. *Ibid.*, 250–52.

36. *Ibid.*, 230–34; see also Ernst Mach, *Populär-Wissenschaftliche Vorlesungen*, 4th ed. (Leipzig, 1910), 43–47.

37. See the interesting discussion of Ernst Mach in Katherine Arens, *Functionalism and Fin de Siècle: Fritz Mauthner's Critique of Language* (New York, 1984), 183–222.

38. Mach, *Die Analyse*, 214.

39. On Mach and Husserl, see Manfred Summer, "Denkökonomie und Empfindungstheorie bei Mach und Husserl—Zum Verhältnis von Positivismus und Phänomenologie," in Haller and Stadler, *Ernst Mach*, 309–28.

40. Edmund Husserl, *The Phenomenology of Internal Time Consciousness*, ed. Martin Heidegger, trans. J. S. Churchill (Bloomington, 1964); the slightly different German text is *Texte zur Phänomenologie des inneren Zeitbewusstseins 1893–1917* (Hamburg, 1985).

41. See, for a comparison on this subject, Stephen Kern, *The Culture of Space and Time 1880–1918* (Cambridge, Mass., 1983).

42. See Jonathan D. Kramer, *The Time of Music* (New York, 1988), esp. chap. 11.

43. See a comparable discussion for fiction in Paul Ricoeur, *Time and Narrative* (Chicago, 1985) 2:77–81.

44. George Kubler, *The Shape of Time: Remarks on the History of Things* (New Haven, 1962), 77–82.

45. H. A. Köstlin, *Geschichte der Musik im Umriss*, ed. Willibald Nagel, 6th ed. (Leipzig, 1910), 538.

46. See Norbert Elias, *Über die Zeit* (Frankfurt, 1988), 42–43, 126–27, 144–47.