The Making of Modern Musical Expertise:
German Conservatories and Music Education, 1843-1933

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Abstract

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Music conservatories are central institutions to the field of classical music. In them, aspiring professional hone their craft, renowned musicians pass on their expertise to upcoming generations, and notions of exactly who and what is considered “musical” are forged and disseminated. However, the apparently self-evident place of conservatories in modern cultures of classical music obscures their historical novelty—it is only since the latter nineteenth century that these institutions have become a pervasive force in classical music pedagogy and culture.

This dissertation explores this revolution of institutionalized training in classical music by analyzing the history of German music conservatories over a roughly ninety-year period, from the founding of the Leipzig conservatory in 1843 to the Nazi takeover of power in 1933. Combining archival research, extant musicological scholarship, and theoretical and methodological approaches developed in a variety of social scientific and humanities disciplines, each chapter traces and historicizes a key development in
modern music-pedagogical thought and practice: 1) the crystallization of a set of pedagogies designed to produce competency in the performance of canonical musical works; 2) the development of music education as a discipline; 3) the emergence of ear training; 4) the rise of Émile Jaques-Dalcroze’s method of rhythmic gymnastics.

Throughout, I show that conservatories not only served to reproduce specific musical practices (such as the faithful performing of musical works, or *Werktreue*), but that they also functioned as incubators for new ways of thinking about human musicality and the pedagogies that would produce it. In particular, the latter chapters outline central features of what I call the “psychotechnical turn” in music education in the decades surrounding 1900, arguing that this resulted from growing connections between conservatory pedagogy and the psychological sciences.
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Introduction

It may well be a truism to state that music conservatories are central institutions to the field of classical music. They are where aspiring professionals hone their craft, where renowned musicians pass on their expertise to upcoming generations, and where notions of exactly who and what is considered “musical” are forged and disseminated. From a contemporary perspective, it is difficult to imagine what the profession would look like without them; perhaps there would be no viable profession at all.

But the self-evident position of conservatories in modern cultures of classical music belies their historical novelty. Only a handful of institutions before the middle of the nineteenth century offered specialized training for aspiring musicians, and, with the notable exception of the Paris Conservatoire, even those bore little resemblance to systems of training recognizable today. In early 1840s Germany, where the chronology of this dissertation begins, conservatories were not yet a simple fact of professional musical life; music education was a predominantly decentralized and diffuse endeavor, often taking the form of one-on-one apprenticeships between master and pupil.¹ Felix Mendelssohn, music-institutional reformer *par excellence*,² understood that the


² For an account of Mendelssohn’s career-long engagements with institutional reform, see Peter Mercer-Taylor, “Mendelssohn and the Institution(s) of German Art Music,” in *The Cambridge Companion to Mendelssohn* (Cambridge: Cambridge University Press, 2004),
conservatory system was *something to be made*. Mendelssohn spent much of the latter part of his life in zealous pursuit of establishing a conservatory. And while he failed in Berlin, he succeeded in founding the first major German conservatory in Leipzig in 1843, an institution of central importance to the history of modern musical training in Germany and beyond, and, therefore, to the story that this dissertation tells.

Within half a century, over six thousand students enrolled at the Leipzig Conservatory alone. Outside of its own walls, it catalyzed the burgeoning of this music-educational model across Germany, with many similar institutions appearing over the course of the proceeding decades. These included the *Königliches Conservatorium für Musik* (München, 1846), the *Conservatorium der Musik Köln* (1850), the *Städtisches Konservatorium für Musik in Berlin* (1850), the *Schmitt’sche Akademie für Tonkunst* (Darmstadt, 1851), the *Dresden Konservatorium* (1856), the *Stuttgarter Musikschule* (1857), the *Königlich Akademische Hochschule für ausübende Tonkunst* (1869, Berlin), the *Hamburg Konservatorium* (1873), and the *Hoch’sches...* 9-25.

Concerning Mendelssohn’s role in the early development of conservatories (and other musical institutions) in Germany, I adopt a similar perspective to that used by Pierre Bourdieu in his analysis of the positions held by Gustave Flaubert and Charles Baudelaire as they helped create the “literary field” in latter-nineteenth-century France: “We know how much Flaubert contributed, along with others, notably Baudelaire, to the constitution of the literary field… to reconstruct Flaubert’s point of view [...] is to have a real chance of placing ourselves at the origins of a world whose functioning has become so familiar to us that the regularities and the rules it obeys escape our grasp.” See Pierre Bourdieu, “The Conquest of Autonomy: The Critical Phase in the Emergence of the Field,” in Pierre Bourdieu, *The Rules of Art: Genesis and Structure of the Literary Field*, trans. Susan Emanuel (Stanford, CA: Stanford University Press, 1996), 48.

A complete list of students who attended the conservatory during these years can be found in Emil Kneschke, *Das Königliche Conservatorium der Musik zu Leipzig: 1843-1893* (Leipzig: Breitkopf & Härtel, 1893).
Konservatorium (Frankfurt am Main, 1878). By the first decades of the twentieth century, these institutions and dozens more had thoroughly transformed the practice of music pedagogy and, in so doing, the musical field of which they formed an essential part.

What, then, were the effects of this rapid expansion of music conservatories, both on music pedagogy itself and the broader musical arenas with which they were connected? To answer this question, this dissertation analyzes the history of German conservatories over a roughly ninety-year period, from the founding of the Leipzig Conservatory in 1843 to the Nazi takeover of power in 1933. Combining archival research, extant musicological scholarship, and theoretical and methodological approaches developed in a variety of social scientific and humanities disciplines, it traces and historicizes four key developments in modern music-pedagogical thought and practice: 1) the crystallization of a set of pedagogies designed to produce competency in the performance of canonical musical works; 2) the development of music education as a discipline; 3) the emergence of ear training; 4) the rise of Émile Jaques-Dalcroze’s method of rhythmic gymnastics. In the remainder of this introduction, I position this dissertation in relation to extant literature, discuss its general methodological, historiographical, and conceptual orientations, and summarize the contents of the following chapters.

State of the Literature

Despite the fact that the emergence of these forms of training signals a paradigm shift in how musicians and music scholars learn their craft—and thus how historically-specific
conceptions of musicality are produced and regulated through pedagogy—only a smattering of musicological literature exists on the subject. This is why, in their introduction to the 2005 collected edition *Musical Education in Europe (1770-1914): Compositional, Institutional, and Political Challenges*, Michael Fend and Michel Noiray were still able to write that “the history and sociology of tertiary music education on a European level has [sic.] virtually remained *terra incognita*.” While this two-volume collection went some way toward remedying this paucity of scholarship specific to European conservatories, the contributions tended to focus on questions of institutional history, eschewing the broader historical issue of what kinds of transformations conservatories effected in practice, music-educational or otherwise.

As Anthony Jay Cantor pointed out in his 2015 dissertation, many German conservatories have themselves been the subject of a monograph outlining the history of that particular institution. This kind of intra-institutional approach to historical analysis undoubtedly has its benefits, but it has also prevented musicologists from mapping

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broader developments, visible across large numbers of institutions, in histories of musical training. Indeed, unlike in France, where a highly centralized pedagogical structure was instituted at the Paris Conservatoire from the turn of the nineteenth century, Germany very rapidly came to have a multitude of institutions in constant exchange with one another. In other words, as I show in Chapter 2 of this dissertation, the rapid proliferation of German conservatories, in conjunction with the appearance of new music-educational journals and associations, crystallized a set of institutional structures more recognizable as a modern discipline. If exchange and collaboration across institutions formed an essential dynamic of German conservatories, it is crucial that this dynamic itself becomes an object of historical inquiry.

In terms of chronological and geographical scope, there is close overlap between this project and Cantor’s aforementioned dissertation. Cantor has offered a broader account of German conservatories by going beyond the histories of single institutions, but he does so more out of cultural-historical, rather than musicological imperatives. Whereas Cantor’s primary interest in the history of German conservatories is the role they played in struggles over various national, local, and cultural identities, this

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7 For a recent discussion of how the Paris conservatoire “aimed to localize professional music instruction within a powerful central institution,” and “how its organizational structure and pedagogical practices were modeled on the military,” see Kailan R. Rubinoff, “Toward a Revolutionary Pedagogy: The Paris Conservatoire, Hugo and Wunderlich’s Méthode de flûte, and the Disciplining of the Musician,” The Journal of Musicology 34 (2017), 473-514.

8 Cantor, “Our Conservatories? Music Education, Social Identities, and Cultural Politics in Germany and Austria, 1840-1933.”
dissertation is instead concerned with how conservatory training shaped both musical expertise and discourses of human musicality. Indeed, I show that conservatories housed historical actors who constantly moved between statements about human musicality on the one hand, and techniques designed to develop that musicality on the other. After all, what is pedagogy if not the practice of making technical specific conceptions of human beings?

The earliest model of the music conservatory—the Neapolitan conservatories—has been the subject of research by scholars such as Rosa Cafiero and Robert Gjerdingen. In her synthesis of prior research undertaken on these institutions, Cafiero has shown that, while some aspects of these institutions prefigure the setup of German conservatories (perhaps most importantly the establishment of permanent premises, the employment of highly renowned teachers, and the teaching of specialized subjects of instruction), they also functioned rather differently in others: first, these conservatories originated essentially as welfare institutions for orphans, and second, the kinds of musical specialization and accompanying pedagogical practices found in these Italian institutions are largely incommensurable with more modern forms of conservatory training.9 With regards to the latter, Gjerdingen has documented how the solfeggi and partimenti traditions of musical learning reveal a set of pedagogical structures notably distinct from those used within later institutions in Paris and Germany.10 In particular,


10 Robert Gjerdingen, Music in the Galant Style (New York: Oxford University Press,
Gjerdingen has explored how this kind of music education did not easily distinguish between performance, composition, and improvisation.\footnote{Robert Gjerdingen, “Partimenti Written to Impart Knowledge of Counterpoint and Composition”, in Partimento and Continuo Playing in Theory and in Practice, ed. Dirk Moelants and Kathleen Snyers (Leuven: Leuven University Press, 2010), 43–70.} As I explore in Chapter 1, German conservatory curricula strictly partitioned these subjects, and this pedagogical separation of these musical activities had significant consequences well beyond conservatory walls.

Relatedly, Fend and Noiray have called for greater exploration of “the increasing differentiation of musical skills” that have occurred in the histories of these institutions.\footnote{Fend and Noiray, “Introduction,” 8.} Indeed, new subjects of instruction continued to appear in German conservatories throughout the latter nineteenth and early twentieth centuries, and much of the latter part of this dissertation is dedicated to tracing the genealogies that led to ear training, rhythmic gymnastics, and even music education itself entering these institutions’ curricula.

As well as extending extant scholarship on the history of music education, this project intersects with several other topics of historical musicological inquiry. One such area of study is the shifting histories of music performance in the nineteenth century. Musicologists have long recognized how a distinctly modern culture of classical music performance, centered around the faithful interpretation of canonical works (in short: Werktreue), arose in the mid- and latter-nineteenth century.\footnote{For perhaps the most nuanced account of the emergence of this performing discourse, see}
as James Johnson, William Weber, and Lydia Goehr have shown how Werktreue gained its widespread power in tandem with other historical developments such as silent listening, the entrenchment of musical canons, and the work-concept.\textsuperscript{14} In the first chapter of this dissertation, I show that it is far from mere coincidence that this very same period witnessed the rapid ascension of a specific style of conservatory training, one quite explicitly designed to produce the musical skills and sensibilities for a Werktreue-like approach to classical music performance.

To understand how and why German music conservatories emerged when they did, it is useful to consider scholarship on cultural institution building in the German provinces, as well as on contemporaneous discourses surrounding the efficacy of music in cultivating public taste, morality, and education. Outside of musicology, historian of science Timothy Lenoir’s work on the institutionalization of scientific disciplines in nineteenth-century Germany offers a theoretically rich and historically pertinent model for investigating the overlapping cultural, economic, and disciplinary factors that help create cultural and educational institutions.\textsuperscript{15} More specific to music history, Cecilia Hopkins-Porter’s account of the Lower Rhine Musical Festivals, and the increasing


connections between professional musicians and dilettantish civic leaders in mid-nineteenth century Germany that enabled their formation, is especially apt. Her description of “the process by which an expanding, increasingly affluent, enlightened, and urban bourgeoisie acquired control over the musical establishment” could be equally applied to the appearance of German music conservatories. This is suggested as much by Peter Mercer-Taylor’s account of Mendelssohn’s passionate engagement with musical institutions, and his multifaceted attempts to transform them, especially in founding the Leipzig Conservatory. Musicians like Mendelssohn and prominent citizens were united by their belief in music’s potential as an instrument for public education, and attempted to disseminate what Celia Applegate has called “a taste for music as a measure of a fully cultivated life,”18 not least through building musical institutions.

Recent work by James Garratt and David Gramit has further examined the flurry of ideas that positioned music in direct relation to ideas of cultivation and Bildung in Germany at this time. By bringing to light various discourses, institutions, social movements, and composers that sought to make music an “engine for the transformation of society,” Garratt has complicated “the assumption that musicians and other artists – as a result of the idea of aesthetic autonomy – regarded the artistic sphere

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17 Mercer-Taylor, “Mendelssohn and the Institution(s) of German Art Music.”

as polarized from the social and political fields.”^19 And, questioning the highly idealistic veneer of these notions of music’s social efficacy, Gramit has pointed out that they also served the practical interests of musicians who espoused them; as art music emerged as a profession increasingly distinct from structures of court patronage, such ideas “served to secure the existence of music as a legitimate activity and to maintain the livelihood of its practitioners.”^20 To be sure, music conservatories offered one route for prominent musicians to attain a stable form of employment in a period of professional uncertainty.

It was in these discursive and professional contexts that conservatories were billed as benefiting not just musicians, but entire publics, as Mendelssohn’s letters make all too clear.^21 Indeed, this connection with liberal public reform encourages us to see the emergence of institutionalized training for musicians as part of wider histories in which sound, music, and pedagogies of the human subject emerged as objects of knowledge and sites of calculated intervention and transformation.^22 More immediately,

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of course, music-educational institutions were intended to cultivate the bodily and
cognitive expertise of aspiring musicians in very specific ways. As Grant Olwage and
Benjamin Steege have both shown in their different studies of John Curwen’s Tonic
Sol-fa Society,\(^{23}\) widespread forms of nineteenth-century music pedagogy were
explicitly envisioned as transforming the bodies and behaviors of their students; similar
attention has rarely been paid to these dimensions of music education in previous
discussions of conservatory training.

Looking toward a more recently-established area of musicological investigation,
the past several decades have seen an explosion of scholarly interest in historical
relations between the fields of music and science, not least within sound studies.\(^{24}\)
Earlier attempts to “contextualize” music in relation to contemporaneous scientific
discourses have largely given way to a more dynamic picture of exchanges between a
diverse array of musical and scientific practices, epistemologies, techniques,
instruments, institutions, and the like.

This dissertation, for its part, explores how music pedagogy proved to be an

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especially fertile area of overlap between the musical and scientific fields around the turn of the twentieth century. More specifically, the last three chapters all deal with how various concepts, techniques, and attitudes moved between the psychological sciences and elite music-pedagogical institutions in Germany in the decades around 1900. These actors’ interdisciplinary endeavors, I argue, led to a novel discourse of human musicality in classical music arenas, one that viewed both musical perception and action as essentially psychophysical in nature. At the same time, I show that music educators’ newfound interest in examining the psychological and physiological workings of human subjects made possible the novel music pedagogies of ear training, music dictation, and Émile Jaques-Dalcroze’s method of rhythmic gymnastics.

**Conceptual, Methodological, and Historiographical Approaches**

How, then, did these elite forms of music education come into existence? What actors, discourses, practices, and material resources made them possible? What kinds of expertise have they produced (and, it should be noted, excluded)? And how have these pedagogical arrangements effected broader changes in classical music as a field of professional practice and knowledge production? To answer these questions, this dissertation utilizes various interdisciplinary approaches to historical writing; I draw from perspectives developed in the history of science, science and technology studies, the sociology of culture, and the sociology of expertise.

Most immediately, my conception of pedagogy, and the roles it plays in producing musical expertise, owes much to recent work by historians of science,
especially that of Andrew Warwick.\textsuperscript{25} These scholars understand pedagogy as an ensemble of practices that circulate knowledge and structure people’s actions; pedagogical techniques comprise the processes through which collective, expert practices emerge. Highlighting the role of pedagogical practice in generating, sustaining, and transforming expert fields, this “pedagogical perspective” has been most fully elaborated in Andrew Warwick’s study of the development of mathematical physics at Cambridge University.\textsuperscript{26} For Warwick, educational processes bring individuals across the “great divide” separating the unknowing outsider from the knowing expert. Detailing how it imparts historically specific conceptual schemas, technical skills, and sensibilities toward a practice, Warwick views pedagogy as structuring what he calls an expert’s “way of knowing.” Following this line of thought, this dissertation assesses emergent pedagogical cultures to illuminate not only how musical expertise is acquired, but the very nature of that expertise itself.

From a more historiographical perspective, Warwick has also shown how changes in the pedagogical makeup of an expert field can, under the right circumstances, generate much broader shifts in that field as a whole.\textsuperscript{27} Pedagogy, in other words, can function as “a powerful means of historical change in its own right,”

\textsuperscript{25} For a broad overview of the kinds of historical phenomena studied and theoretical models developed by these scholars, see the following collected edition: David Kaiser, ed., \textit{Pedagogy and the Practice of Science: Historical and Contemporary Perspectives} (Cambridge, Mass.: MIT Press, 2005).

\textsuperscript{26} Andrew Warwick, \textit{Masters of Theory: Cambridge and the Rise of Mathematical Physics} (Chicago, IL: Chicago University Press, 2003).

\textsuperscript{27} Warwick, \textit{Masters of Theory}, especially Chapter 1: “Writing a Pedagogical History of Mathematical Physics.”
not least because of the “profound relationship between the history of training and the level and scale of agreement achievable in a technical discipline.”

Given the remarkable growth of music conservatories during the nineteenth century outside of earlier Italian models, the impact of these institutions on the wider development of musical expertise might well give music historians serious cause for reflection.

In reading the coalescing of these structures of musical education as a set of connected transformations in musical practice, I position my work in relation to theories and methodologies of the historical “event” developed by historical sociologist William Sewell and Michel Foucault. For Sewell, most happenings in social life “reproduce social and cultural structures without significant change,” whereas events comprise those “relatively rare subclass of happenings that significantly transform structures. An eventful conception of temporality, therefore, is one that takes into account the transformation of structures by events.”

To conceptualize more precisely the kinds of historical events that this dissertation investigates, I borrow from Foucault’s notion of a “regime of practices.” His elucidation of this concept, which, like Sewell, is approached historiographically as a type of event, has an appropriately pedagogical resonance: a regime of practices is comprised of “programmes of conduct which have both prescriptive effects regarding

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what is to be done” and “codifying effects regarding what is to be known.” Indeed, this dissertation traces the coming together of what Warwick calls “pedagogical regimes,” sets of practices which function to structure the conduct and knowledge of music students.

I have chosen to study the early history of specific styles of music pedagogy not because I assign more value a priori to historical origins, but because studying forms of expertise as they are gradually assembled can best illuminate the various actors that made them possible. As sociologist Gil Eyal has recently suggested, the “complex make-up of expertise is typically much more evident when it is still “in the making,”” as various persons, discourses, objects, and institutional arrangements coalesce into a more or less stable “background of practices.” This analytical approach, for example, allows us to see how ear training did not emerge through some leap of the intellect, but rather from interactions between various musical, pedagogical, and scientific actors.

To follow specific conceptions and forms of musical expertise “in the making,” is, in short, the overarching historiographical approach of this dissertation. In order to analyze how German conservatory pedagogy developed in the latter nineteenth and early twentieth centuries, I draw from a wide variety of archival and primary sources: these include student assessments, examination records, conservatory curricula, institutions’ yearly reports, journal articles, textbooks, monographs, and the correspondence and memoirs of students and teachers.

31 Foucault, “Questions of Method,” 75.

Combining these historiographical and conceptual approaches with little-studied empirical materials, this dissertation challenges prior assumptions concerning the functions of music conservatories. Consider, for example, Richard Taruskin’s seemingly commonsense statement that “conservatories are preservative institutions, both by etymology and by ideology.”\(^{33}\) The historical analysis of conservatories presented in this dissertation reveals this to be, at best, an incomplete picture. For one thing, it avoids taking conservatories as objects of historical inquiry in their own right. As William Weber has similarly pointed out regarding the very notion of “classical music,” “the concept of classical music should be seen as pioneering rather than conservative during the first half of the nineteenth century. Endowing older works with canonic authority took two generations to accomplish because it made a fundamental break with musical tradition.”\(^{34}\) Very much the same could be said of conservatories: it is all-too-easy to view such institutions anachronistically as essentially conservative. Instead, following Weber, it is important to note that, at the time of their emergence, they formed an important transformation in musical life (and my historical actors understood this fact all too well). To be sure, both the concept of “classical music” and the institution of the conservatory would, over time, come to be representative of conservative views. But to transpose later developments on to earlier histories is exactly the kind of teleological narrative this dissertation seeks to avoid.

This is not to say that conservatories have not had “conserving” or reproductive


effects within classical music cultures more broadly. Indeed, Chapter 1 poses the question of exactly how conservatory training has reproduced similar performance practices over multiple generations. But rather than portraying conservatories as monolithic sites that promote ideologies of artistic tradition, I show that it is precisely the heterogeneity of conservatory training that explains its reproductive power. For this reason, I look toward a variety of materials and practices to show how conservatories achieve this: architectural arrangements, discourses of assessment, classroom teaching, textbooks, performance examinations, and patterns of student interaction. If disciplines function not as monoliths, as Lenoir has suggested, but as ensembles of “packaged and coadapted practices assembled in diverse local settings,” we can turn to questions of training to understand how these practices come to be arranged in more or less coherent ways.  

As authors in science and technology studies have long argued, the extension or reproduction of states of affairs cannot be explained away through simple inertia or ideologies of tradition. Rather, it is a matter of tracing how phenomena are “taught, practiced, kept up, made to sink in”. Conservatories extend and reproduce existing states of affairs in part by bombarding students with “positive modalities.” This term, coined by Bruno Latour, denotes processes through which prior statements are “incorporated into tacit knowledge with no mark of its having been produced by

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anyone”.

That is, at the same time as transmitting specific kinds of musical skill and knowledge, conservatory education renders them axiomatic. This is largely achieved through the sheer scale of positive modalities and their intensified circulation through varied oral and textual media. Music libraries, for example, shelter and organize bodies of texts, making masses of accumulated knowledge readily available to students. From the students’ perspective, canons of musical works—as well the texts that expound on them—are already “there,” simply waiting to be reactivated. The institutionalized arrangements of these resources contribute greatly to the reproduction of specific musical practices.

But what if, instead of acting as institutions only of conservation and reproduction, they also functioned as incubators for new ways of thinking about human musicality and the pedagogies that would produce it? From Chapter 2 onwards, this dissertation shows that conservatories played both of these roles. That is, while conservatories acted as a key institutional node in reproducing normative cultures of classical music (especially in the realm of performance), they also gave rise to new, and ever more “psychological,” kinds of music-pedagogical knowledge and practice. To be sure, turn-of-the-twentieth-century Germany was marked by unusually common and extensive patterns of exchange between sites like psychological laboratories and music classrooms, fields such as music and science, and institutions like research universities

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and conservatories. And it is this marked, if somewhat surprising, interdisciplinary history that makes this moment in music education so compelling as an area for musicological investigation.

Chapter Summaries

Chapter 1 argues that the rise of Werktreue—the practice of faithfully performing notated musical works—was directly tied to the growth of a specifically nineteenth-century style of conservatory training. Through an analysis of the aims, methods, and effects of pedagogies employed at the Leipzig Conservatory during the latter nineteenth century, it assesses how this powerful educational institution positioned Werktreue as the central object of both learning and examination. This research provides the first detailed historical study of how, through instruction in Technik, Vortrag (interpretation), and music theory, the Leipzig curriculum was designed to cultivate the bodily and mental capacities deemed necessary for competent and “musical” performances of canonical works.

Spanning roughly half a century from the conservatory’s founding in 1843, the chapter draws from an array of archival and primary sources including examination records, student assessments, textbooks, and wider music-pedagogical discussions, not to mention first-hand accounts of conservatory culture left by both students and teachers (such as Felix Mendelssohn, Hugo Riemann, and Ethel Smyth). In dialogue with extant

38 For an exploration of this uniquely German state of affairs, see Steege, Helmholtz and the Modern Listener, Chapter 1: “Popular Sensations.”
musicological scholarship and critical approaches to the study of expert practices forged outside musicology, I foreground conservatory pedagogy’s transformative (and still understudied) effects on the historical trajectories of music performance during the nineteenth century.

Chapter 2 shifts the chronology of the dissertation forward from the mid-nineteenth century to the decades surrounding 1900, and expands its geographical purview well beyond Leipzig in order to assess developments at a variety of German conservatories. In this period, Germany witnessed a rapid and unparalleled explosion not only in music conservatories, but also in research universities and psychological laboratories. This chapter begins to show how these institutional spaces, and the interactions between them, led to musicality becoming a problem, or at least a very different kind of problem than it had been within cultures of classical music up to that point. As I show, a significant contingent of conservatory professors sharply criticized the kind of pedagogical culture outlined in Chapter 1, and they did so in new and prominent media of exchange—primarily the music journal Der Klavier-Lehrer (The Piano Teacher) and the yearly reports of conservatories themselves. These professors suggested, in short, that the blind focus on teaching students to perform extant pieces of music necessarily overlooked other kinds of musical skill and knowledge, especially those then being illuminated by emergent research undertaken in psychological laboratories.

While they critiqued the dominant focus on performance in conservatories, they also began to carve out space for music education itself as a subject of study within conservatory curricula, and they eventually succeeded in instituting state examinations
for music teachers in the 1920s; this formalization of teacher training was accompanied by ongoing debates concerning the goals and methods that music pedagogy should adopt. As I show, this led to emergent problematics concerning the individual differences between students, and the accompanying techniques for observing and classifying these differences in students’ musical abilities. Over time, these problematics and techniques came to rely increasingly on psychological conceptions of human perception and action, with the introduction of the “psychotechnical aptitude test” at the Berlin Hochschule für Musik exemplifying this shift.

Chapter 3 offers the first historical account of the growth of ear training as an accepted area of elite music pedagogy. To do so, it excavates the decidedly interdisciplinary exchanges between the psychological sciences and music-educational institutions that allowed the faculty of musical listening to emerge as a central object of musical training. This chapter demonstrates that the entrenchment of music pedagogies like ear training and music dictation was made possible as a result of decidedly psychological problematics being elaborated within extant musical and educational arenas. As I argue, the more or less simultaneous rise of ear training and music dictation points toward a new kind of pedagogical power in the field of classical music, one that is best described as “psychotechnical.” That is, these pedagogies were designed as a means to both cultivate and assess the ability of students to “experience” music “consciously.”

With reference to ear training and music dictation, this chapter also introduces the umbrella term I use to highlight their essential commonalities: “transductive pedagogies.” Both of these pedagogies encourage students to smoothly translate
between two or more musical media—from tones to written notation, and vice versa. And, as these music educators claimed, this process of transduction engendered a supposedly “conscious” and conceptual knowledge. Furthermore, music pedagogues like Fritz Reuter understood that these kinds of transductive pedagogies served not only to cultivate more “musical” kinds of listening; they also served to verify the content of that experience itself to others (in this case, conservatory teachers).

In Chapter 4, I explore the rise of rhythmic gymnastics, a music-pedagogical method developed by the Swiss conservatory professor, Émile Jaques-Dalcroze. Though the historiography of rhythmic gymnastics has tended to discuss Dalcroze’s relationship with music conservatories as entirely negative, I show that, on the contrary, the reception of rhythmic gymnastics by German pedagogues constituted one of the central events within conservatory education in the early twentieth century.

Extending the transductive logic of ear training to the entire human body, rhythmic gymnastics required students to represent heard music through bodily movement. Over time, Dalcroze broadened his music-pedagogical practices into an explicitly pyschotechnical project, one that deployed music to develop the psychological domains of perception, attention, and volition. By placing Dalcroze in relation to the growing disciplines of child psychology and experimental pedagogy (from which he frequently drew, not least through his collaboration with Genevan neurologist and child psychologist, Edouard Claparède), I suggest that his importance as a historical figure derives primarily from his successful linking of music pedagogy with these fields.
Chapter 1

Pedagogies of Performance:
The Leipzig Conservatory and the Production of Werktreue

Introduction

The rise of “Werktreue” as a discourse and practice of music performance remains hotly debated in the history and historiography of nineteenth-century music. Musicologists tend to agree that Werktreue—defined here as the faithful interpretation of notated musical works—developed its normative power alongside other well-studied practices such as silent listening and the development of musical canons. But it is now abundantly clear that this model of performance rose in a piecemeal rather than revolutionary fashion. Analyzing its beginnings around the turn of the nineteenth century, Mary Hunter has shown that aesthetic theorists, musicians, music critics, and music pedagogues subjected Werktreue to significant contestation. Further, both

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1 Borrowing from Lydia Goehr’s succinct phrasing, I define Werktreue in this chapter as the presupposition that “performances and performers [are] respectively subservient to works and their composers,” and that “to be true to a work is to be true to its score.” See Lydia Goehr, The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music (New York: Oxford University Press, 1992), 231.


Kenneth Hamilton and Jim Samson have documented the coexistence of varying principles and styles of performance among elite classical musicians well into the latter nineteenth century. These pluralities visible in the historical record point toward multiple, overlapping chronologies rather than a sudden transformation. And yet, even if music historians now view Werktreue as arising out of longstanding struggles within the field of classical music, the fact remains that Werktreue has functioned as a “dominant paradigm for performance” for well over a century. How can its continued resonance be accounted for?

This chapter addresses this question not by relying on notions of historical inertia presumed to accompany conservative ideologies of tradition, but by approaching it through a pedagogical perspective. Werktreue, I argue, owes its longstanding prominence to a historically specific educational regime in which performing musicians learned their expertise: an ensemble of musical skills, sensibilities, and knowledge. Attending to the transmission of Werktreue as a form of musical expertise also carries with it a certain historiographical stance, foregrounding the pedagogies responsible for producing this expertise as sites of historical inquiry.

Regarding shifting cultures of musical performance, some scholars have already perceived the more or less simultaneous ascension of Werktreue and music conservatories, especially in the latter nineteenth century, as far from mere historical

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coincidence. Hunter, for example, wrote pithily that “pedagogical structures” disseminated these “practices and attitudes” to musicians, generation after generation.\textsuperscript{6} Useful as this formulation is, it nevertheless stops short of illuminating both what these “pedagogical structures” were and the kinds of musical expertise they produced. To illustrate what was transmitted and how, this chapter forwards a detailed analysis of styles of training instituted at the Leipzig Conservatory during the nineteenth century after its founding in 1843. Focusing especially on performance and music theory—two dominant subjects of conservatory pedagogy, then as now—I draw from a variety of archival and primary sources to assess a set of musical pedagogies before they had gained such widespread, tacit acceptance.

**Leipzig and The Conservatory as Center of Practical Training**

From the perspective of a longer history of institutionalized training in classical music, the Leipzig Conservatory undoubtedly consolidated shifts away from the pedagogical models established in the Italian *conservatorio*, and towards the development and international ascendance of a different conservatory structure first crystallized at the Paris conservatoire in the 1790s.\textsuperscript{7} As Douglas Bomberger, Yvonne Wasserloos, and others have noted, Leipzig’s status as the first German conservatory, as well as its large


intake of international students, helped catalyze the rapid spread of similar conservatories and models of training in musical performance throughout much of Europe and the United States.⁸

For purposes of historical contrast, Robert Gjerdingen’s work on the galant style is especially suggestive here, not least because of his analogous explorations of the tight-knit relations between distinct styles of music pedagogy and particular kinds of musicking.⁹ As he shows in his discussion of the partimenti exercises set for students at the Neapolitan conservatorio in the seventeenth and eighteenth centuries, this kind of music education did not easily distinguish between performance, composition, and improvisation.¹⁰ Conversely, curricula from the Paris conservatoire onward strictly partitioned these subjects (or, in the case of improvisation, largely eschewed it). Indeed, the separation of performance and composition, as abstracted forms of musical production, is an essential precondition of Werktreue. We will return later to more specific differences between these models of music education, but for now it suffices to emphasize, along with Gjerdingen, that galant “musical behaviors” are barely

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⁹ For Gjerdingen, pedagogies practiced at the Neapolitan conservatories were integral to galant music as both a “code of conduct” and as a “carefully taught set of musical behaviors.” See Robert Gjerdingen, Music in the Galant Style (New York: Oxford University Press, 2007), 6.

comprehensible when assessed from the standpoint of later composer- and work-centered musical cultures—and vice versa.\textsuperscript{11} This historical incommensurability, as Gjerdingen’s focus on the Italian conservatorio implies, resulted in no small part from transformations in the pedagogies practiced at European conservatories.

Reading the history of mathematical physics from a similar point of view, historian of science Andrew Warwick has reformulated Thomas Kuhn’s now-classic notion of incommensurable forms of “normal-scientific activity” across different time periods by highlighting the crucial role of pedagogy in the production and dissemination of expert practice. Warwick’s comparative historical study of contemporaneous but distinct mathematical pedagogies led him to conclude that “the problem of incommensurability is therefore best construed by the historian not so much as one of time in the form of sequential theories as one of space in the form of pedagogical geography.”\textsuperscript{12} Following Warwick in this regard, I claim that what might be called normal-\textit{musical} activity—such as the faithful execution of musical works—is “the product not of a ubiquitous paradigm originating in a canonical text, but of specific and localized pedagogical regimes.”\textsuperscript{13}

During the latter nineteenth century, musicians and music critics often spoke of

\textsuperscript{11} Gjerdingen evokes Foucault’s archaeology of distinct epistemes in the human sciences to underline the profound historical distance between galant and modern cultures of classical music. See Gjerdingen, \textit{Music in the Galant Style}, especially 16–19.


\textsuperscript{13} Warwick, \textit{Masters of Theory}, 174.
the Leipzig Conservatory as synonymous with a “dry, pedantic, and conservative” approach to performance, manifesting a notably extreme application of Werktreue.\textsuperscript{14} Franz Liszt, in one of his own masterclasses, warned a student against performing his own Liebestraum no. 1 in a “Leipzigerisch” manner: “You must play that totally carried away as if you were not even seated at the piano, completely lost to the world, not 1, 2, 3, 4 as in the Leipzig Conservatory.”\textsuperscript{15} Hamilton attributes this reputation of Leipzig largely to the legacy of Felix Mendelssohn, an instrumental figure in the school’s founding, noting that he performed with “what was then regarded as a highly strict adherence to the letter of the score.”\textsuperscript{16} Mendelssohn, however, seemed to grasp his own influence as a teacher paled in comparison to the potential power of an enduring educational institution. He wrote to a senior Saxon civil servant in his call for establishing the conservatory in 1841, “as the extension of sound instruction is the best mode of promoting every species of moral improvement, so it is with music also.”\textsuperscript{17} Here, it is instructive to recall that before the conservatory’s founding, the broader institutional milieu out of which it grew—namely the Gewandhaus orchestra, with Mendelssohn as its conductor—helped pioneer modern programming practices and

\textsuperscript{14} Hamilton, \textit{After the Golden Age}, 190.


\textsuperscript{16} Hamilton, \textit{After the Golden Age}, 189.

discourses of “classical music.” The principal movers in founding the conservatory were Mendelssohn and members of the Gewandhaus governing body—itself made up exclusively of Leipzig’s bourgeois elite of bankers, lawyers, businessmen, and civil servants. As William Weber perceptively noted, creating the conservatory thus served as a strategic move, extending the Gewandhaus’ hegemony over the city’s elite musical scene.

If the Leipzig approach to performance formed only one among several practiced in the 1840s and 1850s, it wouldn’t be long before similar institutions were, in Hugo Riemann’s words, “shooting out of the earth like mushrooms.” What had before been exceptional—conservatories like Paris and Leipzig—rapidly became the norm, not least in Germany. By the turn of the twentieth century, musicologists such as Riemann

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18 For Peter Mercer-Taylor, it was under Mendelssohn’s guidance that the Gewandhaus became “one of the early nineteenth-century’s earliest models for the modern professional symphony orchestra.” See Peter Mercer-Taylor, “Mendelssohn and the Institution(s) of German Art Music”, in The Cambridge Companion to Mendelssohn, ed. Peter Mercer-Taylor (Cambridge: Cambridge University Press, 2011), 20.


22 Hermann Kretzschmar, for example, declared in 1903 that “a thick network of conservatories gradually spread itself over all of Germany” in the six decades following the founding of the Leipzig conservatory. See Hermann Kretzschmar, “Die Ausbildung der Fachmusiker,” in Musikalische Zeitfragen: Zehn Vorträge (Leipzig: C. F. Peters, 1903), 58: “und allmählich zieht sich ein dichtes Netz von Konservatorien über ganz Deutschland.”
and Hermann Kretzschmar (who had both studied at the Leipzig Conservatory and taught at other similar institutions) were producing substantive pieces of writing, in which they outlined and critiqued the enormous changes wrought by these institutions over the course of their lifetimes. They both argued that a narrow focus on performance had become conservatory training’s defining feature and, since this focus squeezed out other subjects of learning, its primary problem.\(^2^3\)

Comments made by Mendelssohn just a month after the conservatory’s opening suggest that early efforts were made to steer students towards focusing on music performance. Writing to Ignaz Moscheles—his former teacher and eventual longtime instructor in the conservatory’s piano department—he argued that the penchant for composing and theorizing among students had to be countered: “it is my belief that practical work, thorough, steady practicing, and strict time, a solid knowledge of all works, etc., etc., are the chief things which can and must be taught.”\(^2^4\) From a twenty-first century perspective, it is rather difficult to see anything but a decisive victory for Mendelssohn’s vision of what the purpose and content of conservatory pedagogy should be. In light of his struggle against students’ wishes to “compose and theorize,” this victory should be read less as the inevitable result of music education’s institutionalization in conservatories, and more as the assertion of one pedagogical style over several alternatives. The curriculum at Leipzig reflected a specific vision of the

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\(^2^3\) See Riemann, “Unsere Konservatorien”; Kretzschmar, “Die Ausbildung der Fachmusiker.”

field, and a very successful one at that.

**Technik, Vortrag, Fortschritte: The Assessment of Performance**

Central aspects of the institution’s makeup in its early decades can be found in many conservatories even now, not least the three-year curriculum, the required courses in both piano and music theory, and the promise of performing and composing opportunities. Two things, however, jump out as unusual, at least from a twenty-first-century standpoint. The first is simply the limited number of instruments taught: organ, piano, violin, voice, and occasionally the cello.\(^{25}\) It was only in 1883, four decades after its opening, that the conservatory began to offer instruction in most contemporaneous orchestral instruments.\(^{26}\) This is especially surprising, given the close-knit professional and administrative relationship with the *Gewandhaus* orchestra that the conservatory had enjoyed since its inception.\(^{27}\) Although Mendelssohn clearly saw the conservatory as having the training of orchestral musicians for his orchestra as its most immediate purpose,\(^{28}\) this was thwarted for the most part by a lack of funds and the small space offered by the conservatory’s first building, limited as it was to two rooms in the

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Gewandhaus’ courtyard. And though this would appear to contradict Weber’s suggestion that the conservatory helped further the Gewandhaus’ musical hegemony, these early limitations instead point toward the conservatory’s central role in extending discourses of Werktreue and canonizing practices beyond orchestral institutions, where they first became dominant, and into the realms of chamber, solo, and even amateur performance.

Still more curious, however, was the practice of assigning students two simultaneous teachers for their piano studies (along with classes in music theory, piano was the only subject required of all students, making this arrangement consistent and widespread throughout the institution’s early history). Though this two-teacher system often resulted in contradictory instructions given to students, there was a distinctive reasoning behind it. As William Rockstro (an English student of the 1840s) recalled, it enabled the pedagogical separation of “questions of simple technique” and the actual playing of pieces of music. For the former, students “were expected to study these

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29 For an exploration of the discursive and professional contexts in which “the symphony and its attendant musical values” were promoted in Germany at the expense of other performing traditions, see Dana Gooley, “The Battle Against Instrumental Virtuosity in the Early Nineteenth Century,” in Franz Liszt and his World, ed. Christopher H. Gibbs and Dana Gooley (Princeton, NJ: Princeton University Press, 2006), 75–112.

30 John Francis Barnett, an English student at the conservatory in the late 1850s, remembered this clearly: “[Louis] Plaidy initiated us into the mysteries of staccato from the loose wrist, whilst [Ignaz] Moscheles advocated octaves from the arm. The student, therefore, had to exercise his discretion as to which theory to accept in this, as in some other matters.” See John Francis Barnett, Musical Reminiscences and Impressions (London: Hodder and Stoughton, 1906), 41–2.

matters” with either Louis Plaidy or Ernst Wenzel, both of whom had “made the training of the fingers, and wrist, their specialty.”³² The value of this arrangement was that, in Rockstro’s words, “it left Mendelssohn free to direct the undivided attention of his pupils to the higher branches of Art,”³³ taken to be synonymous with interpreting prized musical works. To be sure, the line between teachers’ roles as instructors in either technique or the interpretation of works could be and often was blurred. But as a general way of dividing piano-teaching responsibilities, the practice persisted for at least thirty-five years.³⁴

The dual organization of piano-classes forms a somewhat extreme (and, as it turns out, relatively short-lived) example of a much broader and longer-lasting aspect of this pedagogical style: the division between Technik and Vortrag in the realm of music performance. For the purposes of this chapter as well as for its historical actors, Technik denoted the repertoire of bodily capacities required of musicians to perform any given piece of music. Vortrag, meanwhile, encompassed a student’s ability to successfully interpret musical works. Simply put, this conception of musical capacity in performance as essentially twofold—bodily on the one hand, and mental on the other—led to these two domains becoming distinct targets of conservatory pedagogy.³⁵ If, as

³² Rockstro, Mendelssohn, 108.

³³ Ibid., 108.


³⁵ As I discuss later in Chapter 4 of this dissertation, this mind/body binarism would be
Hunter described, the “rhetoric about the separation of technique from expression” had become “strikingly and newly emphatic at the turn of the [nineteenth] century,” it is clear that this marked the practical instantiation of a conceptual division that had been circulating for decades.

The distinction between *Technik* and *Vortrag* was further underlined by the primary medium of assessment undertaken at the institution: performance examinations, in which students played pieces of music to faculty once a semester. Therefore, as the primary musical act in training and assessment for performance, interpreting and faithfully executing musical works became isolated both as a discrete subject of learning and as the ultimate, and highly pressurized, goal of pupils’ studies. In the conservatory’s examination records, spanning thirty-seven years’ worth of exams starting from 1844, the terms *Technik* and *Vortrag* saturate discourses employed in assessing student performers at the institution (Figure 1.1). These documents show that examiners frequently judged student performances as technically competent but interpretively lacking. In one of hundreds of examples, an examiner responded to a student’s performance of Ferdinand Ries’ C minor piano concerto, writing only that she “shows good progress in technique, but less so in interpretation.” (See Figure 1.2).

Ida Leopoldine Eger, a native of Leipzig who had entered the conservatory in 1861, had thoroughly challenged by German music pedagogues around the turn of the twentieth century, not least through the reception of Émile Jaques-Dalcroze’s method of “rhythmic gymnastics.”


already received two years of instruction by the time of this exam. As such, the examiner felt able to assess her progress along the parallel lines of *Technik* and *Vortrag*.

Figure 1.1. Opening folio of the first private examinations held at the Conservatory (January 1844).³⁹

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This specific discourse of assessment—tying together comments on students’ progress, technique, and interpretive skills—was not limited to judging single performances, but functioned as a more general schema for classifying any given student’s instrumental or vocal abilities as a whole, as well as how those abilities could best be developed over time. In Ethel Smyth’s first teacher’s certificate (Lehrer Zeugnis) of 1878, for example, her piano teacher Louis Maas penned that she had a “decided talent” for piano playing, although she was “quite far back” and would have to work doubly hard, especially in her study of technique (Figure 1.3). Like Maas, other instructors invariably conflated terms like “musicality,” “musical feeling,” or “talent” with positive assessments of a student’s ability in Vortrag, even (and perhaps

Musik und Theater „Felix Mendelssohn Bartholdy“ Leipzig, Bibliothek/Archiv, A, II.1/1, 3r.


especially) when these students’ *Technik* was deemed contrastingly as underdeveloped. The conservatory’s faculty, by elevating expertise in interpreting musical works (*Vortrag*) as the most highly prized virtue in performance, instituted a clear hierarchy of appraisal: as a student performer, to be judged as “musical” or “talented” meant demonstrating an implicit understanding of how specific works were to be performed. However undetermined the term “musical” can be in conservatory contexts, as Henry Kingsbury documented in his seminal ethnography, at Leipzig there was no mistaking that “musicality” was conceived as an intellectual, spiritual, or even ethical quality, not a bodily one.\[42\] It is also clear that students learned to conceive of their (and others’) expertise in performance in this two-pronged fashion. (Smyth noted in a letter to her mother that, at the conservatory, *Technik* meant “execution” while *Vortrag* functioned as a “special reference to the interpretation you give of a piece.”)\[43\] As Pierre Bourdieu observed in his analyses of assessment practices in university contexts, similar structures of thought endure precisely because students accept, internalize, and eventually disseminate the classifications to which they themselves were subjected.\[44\]

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\[42\] For Kingsbury, the term “musical” derives much of its pervasive power in conservatory culture from the very fact that it is undetermined, with authority figures mysteriously bestowing it upon some students but not others. See Henry Kingsbury, *Music, Talent, Performance: A Conservatory Cultural System* (Philadelphia, PA: Temple University Press, 1988).


Figure 1.3.
First Lehrer-Zeugnis (Teacher’s Certificate) of Ethel Smyth. October 11, 1877.
Anthropologist Charles Goodwin has explored another dimension of how what he calls “professional vision” is transmitted to students, emphasizing that pedagogies employed within expert disciplines succeed not only by teaching definitions of or rhetoric about a practice, but also “a mode of practice” itself.\textsuperscript{45} Indeed, the Leipzig curriculum, in its practical organization, was designed to develop \textit{Technik} and \textit{Vortrag} along parallel lines. With \textit{Technik}, students were encouraged to dedicate themselves to transforming their own bodies, while also being taught to treat that process as just a means to an end—their bodies were, in essence, things to be overcome. Once they had acquired sufficient \textit{Technik}, their body could act as a kind of transparent medium, offering no resistance when it was called upon to realize their conception of a musical work in sound.\textsuperscript{46} This perspective further justified the ascendant value of \textit{Vortrag} over \textit{Technik}. Additionally, knowledge of music theory would ensure that a student’s interpretation of a work, rather than relying on pure instinct, was built upon “recognizing” (\textit{erkennen}) the musical laws (\textit{musikalische Gesetze}) employed by the work’s author. In his harmony textbook written for the conservatory, Ernst Friedrich Richter likened this kind of educated discernment to the anatomical practice of dissection.\textsuperscript{47} Together, these two forms of expertise—\textit{Technik}, and the ability to

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\textsuperscript{46} As Elizabeth Grosz and many other feminist writers have noted, this idea of the body “as a source of interference in, and danger to, the operations of reason” has a history of at least several millennia in Western thought. See Elizabeth Grosz, \textit{Volatile Bodies: Toward a Corporeal Feminism} (Bloomington, IN: Indiana University Press, 1994), 5.
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\textsuperscript{47} Ernst Friedrich Richter, \textit{Lehrbuch der Harmonie: praktische Anleitung zu den Studien in derselben, zunächst für das Conservatorium der Musik Leipzig} (Leipzig: Breitkopf & Härtel, 1853), vi.
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recognize compositional principles latent in a score—were thought to provide students with the foundational skills required to perform musical works in ways deemed competent, knowledgeable, and musical. During the last decades of the nineteenth century, as this style of training spread throughout German-speaking Europe, this dualistic conception of performing expertise was increasingly articulated in music-pedagogical discourse.48

**Teaching Technik**

At first blush, the fact that *Technik* occupied a lower rung on the ladder of values in performance pedagogy fits neatly with Leipzig’s reputation as a stronghold for proponents of anti-virtuosic sentiment, common among German music professionals of the mid-nineteenth century.49 This did not, however, signal a shunning of technical virtuosity *per se*. On the contrary, enormous amounts of labor, on the part of both students and teachers, were dedicated to raising the individual and collective standards of instrumental technique. In one of his many letters sent to his friend and director of the Munich conservatory, Franz Hauser, Moritz Hauptmann noted the remarkable rise

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49 Dana Gooley has aptly described these discourses as a “battle against virtuosity,” a term coined within his wider assessment of the discursive and professional contexts in which “the symphony and its attendant musical values” were promoted in Germany at the expense of other performing traditions. See Gooley, “The Battle Against Instrumental Virtuosity in the Early Nineteenth Century.”
of technical capacities among student violinists:

First-rate violinists are far more common now than formerly. In my young days, [Louis] Spohr was the only man who could play one of his own Concertos, but now the pupils of the Conservatoire play the most difficult. We used to think that the second, in D minor, was the highest flight, but it was never any pleasure to listen to it; sometimes a man would dash at the third in C major, but he never failed to come to grief. Now, we never have an Examination Concert [without hearing] one or other of Spohr’s hardest Concertos, played with faultless technique; yet every pupil is forced to [start] from the beginning, just as we had to, thirty or forty years ago. The standard must be higher now than it was then.\(^\text{50}\)

Written in 1861, these observations were made eighteen years into Hauptmann’s experience as a teacher in the conservatory’s theory and composition departments. As well as highlighting the mere fact of rising technical standards, Hauptmann’s comments, in positioning musical works as the yardstick of proficiency, also draw attention to the canon implications of increasing technical proficiencies. With what

Pierre Bourdieu called “the lucidity of beginnings,”—a historical perspective that enabled him to grasp conservatory practices as novel, not self-evident, and worthy of comment—Hauptmann witnessed firsthand the emergence of a spiraling pedagogical dynamic, which engendered increasingly large numbers of students to have more and more pieces of music within their technical grasp. As the first organizers of the Leipzig Conservatory evidently realized in their hiring of Plaidy and other renowned musical technicians, transmitting Technik was an essential first step in generating the kinds of musical expertise they most valued. Far from being ancillary or opposed to the spread of Werktreue as a dominant force in professional musical practice, the development of Technik throughout large communities of students actively contributed to it.

Hauptmann’s remarks on the increasing frequency with which students performed Spohr’s concertos raises the question of how a highly esoteric skill-set, limited previously to a handful of extraordinary instrumentalists, became common so rapidly. Almost as if he was attempting to understand students’ initial encounters with conservatory culture from a phenomenological perspective, Riemann hit on a few key factors that go some way toward answering this question:

The conservatory novices experience in the first weeks the happiness of budding artistry. They participate in animated music-making, hear daily, even hourly, an overwhelming quantity of good music, make friendships with male and female

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classmates, admire the more advanced, and feel the wholesome spur of competition. It is naturally the technical proficiency that impresses them first, and they devote themselves with all energy to practicing.\textsuperscript{52}

As Riemann himself realized, if somewhat obliquely, the introduction of institutionalized training in music—and specifically, classroom-based teaching—created a ubiquitous visibility \textit{between students}. This presents a stark contrast to the previously dominant pedagogical model in Germany: musical apprenticeship. (It should also be noted that, relative to apprenticeships, conservatories like Leipzig had the effect of actually \textit{reducing} the time that students spent with instructors one-on-one). Woven throughout the fabric of students’ everyday lives, collegial intimacy tended to generate intense competition—a state of affairs frequently referenced by nineteenth-century pedagogues as a positive, and supposedly inevitable, byproduct of conservatory training.\textsuperscript{53} In performance, this led to inordinate amounts of practicing, a tendency that


\textsuperscript{53} The opening remarks of the Dresden conservatory’s 1872 yearly report, for example, noted that “the student enters into contact with other similarly capable, sensitive, and eager young individuals; diligence and efficiency are enhanced through keenly felt zeal and ambition.” See Bericht des Dresdener Konservatoriums für Musik, 1872 (Dresden: C. Richard Gärtner, 1872), 4: “Zudem tritt [der Schüler] früh mit ähnlich begabten, fühlenden und strebenden jungen Leuten in Berührung; Fleiss und Leistungsfähigkeit werden durch cordialen Eifer und Ehrgeiz gehoben.” A copy of this report is held in the archives of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1a/19.
conservatory faculty were happy to reinforce by prescribing timetables of private study. When it came to students’ piano studies, even those whose desired focus lay in another subject were told to play for at least four hours a day, the majority of which should be spent doing technical exercises!\textsuperscript{54}

In addition to this pervasive competitive dynamic, the explosion of technical competencies was also made possible by the implantation of more specific pedagogical techniques. Instrumental textbooks formed a particularly important tool in this regard. At Leipzig, much like at the Paris Conservatoire, some of the most noted technicians of their day fashioned methods of technical training, which were then distributed widely throughout the conservatory’s classrooms. Textbooks produced by renowned pedagogues such as Ferdinand David and Louis Plaidy forwarded pedagogical taxonomies of their respective instruments, isolating the myriad bodily techniques students could expect to encounter in contemporaneous repertoire.\textsuperscript{55} While these

\textsuperscript{54} There are numerous examples of this and similar numbers found across a variety of sources. For example, in the weeks preceding her enrolment in 1877, Smyth took several private lessons with her future conservatory piano instructor, Louis Maas. Writing to her mother, she documented how “He makes me begin at the very beginning of “teknik” [sic.] (it looks so odd in German!) and for 4 hours a day I do finger exercises and nothing else!! But a little sonata of Hummels!” See Ethel Smyth, Brief von Ethel Smyth an Nina Smyth, Hochschule für Musik und Theater „Felix Mendelssohn Bartholdy“ Leipzig, Bibliothek/Archiv, A, VI.5/17, 5. Moreover, Louis Plaidy wrote in his Technische Studien that it should be possible for all musicians to devote at least 4–5 hours of piano practice daily. See Plaidy, Technische Studien für das Pianofortespiel: Eingeführt in den Conservatorien der Musik zu Leipzig und München (Leipzig: Breitkopf und Härtel, 1853), 3: “vier bis fünf Stunden täglich dem Pianofortespiel zu widmen, ist wohl jedem Musiker möglich”.

\textsuperscript{55} Although David insisted in the book’s preface that it was not written as an encyclopedia of violin playing, the contents pages of its two volumes together reveal a more or less exhaustive set of techniques for the time. See Ferdinand David, Violsnchule (Leipzig: Breitkopf & Härtel, 1863). For Louis Plaidy’s textbook, see Plaidy, Technische Studien für das Pianofortespiel.
textbooks record important aspects of teaching methods employed at the conservatory, they also functioned as a vital practical tool for extending those methods over time and space.

David, who was the leading violin professor at the conservatory since its inception as well as a longstanding concertmaster of the Gewandhaus, noted that his Violinschule was by no means a sufficient replacement for an effective teacher; his textbook was better understood as a technical aid to successful master-pupil relationships. And, because printed words and notated examples were understood as inadequate for teaching the subtleties of Vortrag, this understanding of technical textbooks as essentially supplementary devices to oral instruction was deemed doubly true. Describing David’s particular skills and pedagogical eye, Wilhelm von Wasielewski recalled gladly attending his lessons, because it always felt like his studies were being furthered: “He had sublimely mastered certain techniques in fingering and bowing, and in this regard gave good advice; he knew how to guide and occupy every student according to each of their abilities.” A good teacher of technique, in this way, possessed three things: technical mastery, a thorough knowledge of their pupils, and the pedagogical sense required to transmit that mastery in a way that was individualized to each student’s needs. The teaching legacy of a conservatory teacher like David

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56 David, Violinschule, “Vorwort”: “Der Lehrer wird also nachhelfen müssen, wo die Schule nicht ausreicht. Vorzüglich gilt dies vom Styl und vom Vortrage, welche man durch gedruckte Worte und Notenbeispielen nicht leicht Jemandem beibringen wird.”


58 For the seminal text on modern techniques used to individualize human beings as objects of knowledge and pedagogical intervention, see Michel Foucault, Discipline and Punish,
indicates that increasingly high standards of technical competence resulted from a variety of pedagogical developments, and not merely from a quantitative increase in the number of hours students spent practicing. Through a variety of educational media—especially classroom teaching and textbook use—esoteric technical knowledge was extended to new generations of musicians. These pedagogical practices, then, are better understood as the means of institutionalization, rather than its endpoint. The conservatory’s task of transmitting technical expertise has been, and will continue to be, an ongoing one.

Although the widespread obsession with practicing was not solely responsible for increasing the number of students capable of faithfully playing even the most technically challenging of works, it did have another important consequence: students were pushed, whether intentionally or not, toward specializing early on in their studies. At the very least, these aspects of conservatory training accelerated the increasing differentiation between composers and performers. In a telling example of the pressures that catalyzed such specialization, Smyth was once told to suspend her composing by Carl Reinecke—her composition teacher!—because she “should make the piano the first consideration (that is at least 4 hours of it per diem, more when I can)” until she had developed her Technik. Convinced by the logic that a composer should be able to play their own compositions, she resolved to “only compose when I can, that is when by a

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lucky conjunction of musical planets I can sit down with 3 or 4 hours before me and say “I’ve nothing particular to do”, a thing that I assure you has not once happened since the Conserv. opened!”⁶⁰ Within a year, however, Smyth’s dissatisfaction grew to the point where she decided to leave the conservatory, largely in order to concentrate on her composition studies with private teachers. And on the other side of this growing disciplinary divide between composers and performers, Wasielewski recounted that he chose not to attend Mendelssohn’s composition lessons with any regularity, in part because he felt no strong desire toward creative work, but also because he had to dedicate most of his time to his violin studies and the music theory exercises Hauptmann was setting.⁶¹

In an institution where the study of performance and composition were highly compartmentalized, students often felt pressure to concentrate the majority of their efforts on one or the other. But even if the training and assessment of performers and composers were becoming ever more distinct, there is an important caveat, one crucial to grasping the overall setup of a conservatory like Leipzig: both were required to take complete courses in music theory. As important and increasingly ossified as the distinction between “composer” and “performer” was becoming in the latter nineteenth century, these categories defined not a gulf between two unrelated kinds of musicking, but rather different positions in a common field of expertise. That field, crucially, was held together through the joint study of music theory and the networks of shared competencies that this

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⁶¹ Wasielewski, Aus Siebzig Jahren, 37.
At first glance, the teaching of music theory might appear tangential to the main concern of this chapter: conservatory training’s role in Werktreue’s ascendance as a dominant performing practice among professional musicians. Because music theory was taught separately from performance, it is fair to assume that its purpose was, as Alex Rehding has recently put it, to “prepare students both for more complex composition tasks and for analyzing pieces of music along the same lines.”  

In a conservatory like Leipzig, pupils were taught how to abstract harmonic, contrapuntal, and formal rules from common practice repertoire (most typically Bach’s four-part chorale harmonizations); this, in turn, allowed them to apply these rules across contexts to other pieces of music, whether it was in the act of analyzing or composing a musical work. So why, then, would a student like Wasielewski, who spent much of his post-conservatory career as a highly successful violinist, deem studying music theory to be on a par with the importance of his violin playing, but not composition? 

Taking into account the dominance of performance in the distribution of students’ specializations, theory pedagogy functioned de facto as a means to cultivate knowledge deployable in performing works. Requiring aspiring performers to study

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63 Rehding, “Three Music Theory Lessons.”

64 Yearly reports (*Jahresberichten*) of various nineteenth-century German conservatories show that performance (especially in keyboard, violin, and singing) was far and away the
music theory was no accident, even if most students completed their training with an understanding and conception of music theory that was relatively narrow and repertoire focused. Indeed, it is precisely this focus on extant repertoire that indicates music theory pedagogy’s contribution to the rise of Werktreue: not only did it naturalize musical qualities of the canonical repertoires it sought to explain, it also, more fundamentally, helped instill analysis and understanding of musical works as prerequisites for performing them successfully.

The broader function of this style of music theory pedagogy was to provide students with the cognitive resources necessary for understanding musical compositions that one performs. Plaidy himself specified the nature of this link in his book of piano studies, suggesting that a certain amount of harmonic knowledge was “beneficial, if not indispensable” to “grasping” (auffassen) any given composition. For Mendelssohn, making music theory a requirement for all students formed part of a strategy to combat “the technical-mechanical leanings” of his time, and, in so doing, establish a permanent basis for “the true feeling for art and its propagation.”

Mendelssohn’s worries most common specialization. At Leipzig, a surviving report from the 1910/1911 school year records that, out of a total of 810 students, less than a tenth (74) specialized in theory and composition; out of 425 female students, only two did so (less than 0.5%). See Jahresbericht des Königlichen Konservatoriums der Musik zu Leipzig: für den Zeitraum vom 1. April 1910 bis zum 31. März 1911 (Leipzig: Breitkopf und Härtel, 1911), 26. A copy of this report can be found in Stadtarchiv Leipzig, Kap. 32 Nr. 4 Bd. 3, 23r–43r.

65 Plaidy, Technische Studien für das Pianofortespiel, 58.

66 Mendelssohn Bartholdy, Entwurf eines Briefes an den sächsischen König Friedrich August II. zur Gründung des Leipziger Konservatoriums, 8: “… bei der vorherrschend positiven, technisch-mechanischen Richtung der jetzigen Zeit wird die Erhaltung des ächzen Kunstsinnes und seine Fortpflanzung zwar eine doppelt wichtige aber auch doppelt schwere Aufgabe.”
emerged out of a longer history of critiques, circulated by German professional musicians throughout the early nineteenth century, of those virtuoso performers “who were springing up everywhere but possessed few traditional credentials, particularly in the area of music theory.”\(^6\) Later, in the 1870s and 1880s, several conservatory pedagogues would articulate this link between Werktreue and the study of music theory more directly.\(^7\) In a telling example, the opening remarks of the first issue of Der Klavier-Lehrer (one of two significant German music education journals of the latter nineteenth century) told readers to expect continued discussions on music theory pedagogy, because “instruction in harmony and form” constituted “the foundation for the understanding and corresponding interpretation of artworks”.\(^8\) Learning music theory, then, would imbue students’ abilities in Vortrag with knowledge that would have otherwise been lacking—or perhaps even “uneducated,” as one examiner stated in describing a student performance in 1844.\(^9\) To render a work faithfully was also to

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69 “Prospekt”, Der Klavier-Lehrer 1 (1878), 1: “… der Unterricht in Harmonie- und Formenlehre – die Grundlage für das Verständniss und den sinngemässen Vortrag des Kunstwerks”.

demonstrate, however implicitly, knowledge of that work’s form, harmonic structure, thematic development, and the like.

As with *Technik*, music theory was taught through a combination of group-based classroom teaching and private study, both of which relied increasingly on the distribution and ubiquitous use of conservatory-sanctioned textbooks. Although Moritz Hauptmann did produce the textbook-like work *Die Lehre von Harmonik* (Instruction in Harmony) to go along with his more speculative and better known *Die Natur der Harmonik und Metrik* (The Nature of Harmony and Meter), the textbook with the most lasting impact on conservatory pedagogy was Ernst Friedrich Richter’s 1853 *Lehrbuch der Harmonie: praktische Anleitung zu den Studien in derselben, zunächst für das Conservatorium der Musik Leipzig* (Textbook of Harmony: Practical Introduction to its Study, first Published for the Leipzig Conservatory of Music), published after ten years of teaching in the conservatory’s classrooms. Together with his later publications of the *Lehrbuch des einfachen und doppelten Contrapunkts* (Textbook of Simple and Double Counterpoint) and the *Lehrbuch der Fuge* (Textbook of the Fugue), Richter’s textbooks serve as a map for the three-year course of study in music.

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theory in which male students were taught harmony, counterpoint, and fugue in annual succession.\textsuperscript{74} And in a predictably gendered division, female students were only required to take a two-year course in harmony, a practice that formed one of many structural disadvantages faced by women in nineteenth-century conservatories.\textsuperscript{75}

Even if it is hard to overestimate the import and utility of music theory textbooks in disseminating specific kinds of musical literacy,\textsuperscript{76} they nevertheless were used in and alongside classroom teaching—human instructors were not displaced by their own publishing endeavors. The general setup of music theory lessons seems to have followed the format Hauptmann pursued during the institution’s first few semesters, even though he himself admitted, just weeks before the conservatory’s opening, not a single instructor had any idea of how to go about teaching classes.\textsuperscript{77}

\textsuperscript{74} This tripartite division is made clear in the prospectuses of the conservatory, though it should also be noted that some students, after their music-theoretical knowledge had been assessed in the entrance examination, would be allowed to enter a higher theory class from the beginning of their studies. See Prospekte, Hochschule für Musik und Theater „Felix Mendelssohn Bartholdy“ Leipzig, Bibliothek/Archiv, A, II.3/1.


\textsuperscript{76} Richter, for example, can be thanked specifically for popularizing the use of roman numerals in notational analyses. For this insight and a broader consideration of Richter’s textbook and the Leipzig Conservatory in the history of music theory, see Robert W. Wason, “\textit{Musica Practica: Music Theory as Pedagogy},” in \textit{The Cambridge History of Western Music Theory}, ed. Thomas Christensen (Cambridge: Cambridge University Press, 2002), especially 64.

\textsuperscript{77} As Hauptmann wrote in a letter to Franz Hauser, “not one of [the professors] knows how to set about his work, for though we have all instructed individual pupils in our time, we
According to Wsielewski, Hauptmann would set a “harmonic exercise” for the 6-8
students to solve on the blackboard, during which he would simultaneously correct the
work students had completed outside of the class and lecture them on the mistakes they
were making on the board. Writing again to Hauser, Hauptmann noted that his
harmony and counterpoint students “learn their drill like a company of soldiers; only the
awkward squad gets noticed.”

To be a successful student in the realm of music theory at this conservatory,
students had to master how to “solve” harmonic exercises in writing, a task that went
hand in hand with avoiding the mistakes ascribed by rules of tonal grammar. Detailing
his time as a young adolescent at the Leipzig conservatory, Edvard Grieg recounted that
Richter cultivated this style of learning quite explicitly. Although he remembered
disliking—and often even ignoring—Richter’s guidelines during his studies, he stated
that, when looking back, he could appreciate the wisdom of Richter’s intent to drill
students in the fundamentals of common practice harmony and part-writing. Grieg tells
his readers of a specific instance in which he chose to write a fugue with a “mistake-
laden” (fehlerhaft) theme, simply because his desired focus lay on writing something
that would sound beautiful—arranging a fugal theme that would abide by the rules was
“not for him.” But Richter disagreed, opining instead that what mattered was “the

78 Wsielewski, Aus Siebzig Jahren, 38: “In seinen Stunden hatte Hauptmann 6–8 Zöglinge
zu beschäftigen. Sie müßten der Reihe nach die von ihm an die Tafel geschriebenen
Aufgaben lösen, während er die zu Hause angefertigten Arbeiten korrigierte, wobei ihm die
betreffenden Schüle zur Seite standen, um über die begangenen Fehler belehrt zu werden.”

correct solution of the problem” (*die richtige Lösung des Problems*). Summing up their student-teacher relationship, Grieg recalled that “for my tomfoolery he had only a patient smile, and with a “No! False!” he corrected it with thick strokes of his pencil.”

As with the teaching of performance, such methods and discourses of assessment are suggestive of important developments in the teaching of music theory. But in contrast to the assessment of performance discussed above, relatively little material survives in the conservatory’s examination records indicating exactly how students’ music-theoretical skills were examined or discussed by faculty. Dotted between records of performance exams are lists of the written work handed in by students each semester, which show that a fraction of students handed in compositions or analyses of canonic works, with most delivering exercise books in harmony and counterpoint (see, for example, Figure 1.4). More rare are records of on-the-spot examinations in harmony—a practice that appears to have existed only during the conservatory’s first few decades. In most of these records, students were simply listed under the title of “theoretical exercises solved on the spot” or something similar, with no further comment. Considering that this practice seemed to span two decades’ worth of examinations, it is significant that, even though comments and critiques of student

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performances were consistently recorded, exams in music theory rarely engendered any recorded statements of qualitative assessment. And even when comments were left, they were mostly limited to single adjectives like “good,” “excellent,” “passable,” or “weak”; the only marginally more substantive comment was “not without mistakes” (nicht fehlerlos), reinforcing Hauptmann’s insight that, within these educational conditions, it was struggling students and their mistakes which proved most visible.  

Figure 1.4.  
“Register of written work handed in during the Easter semester, 1867.”

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The relative absence of qualitative theory assessment in the conservatory’s archives echoes contemporaneous perceptions of music theory pedagogy at the conservatory as narrow, and perhaps even superficial. Smyth complained in a letter home to her mother about the lack of feedback she received in classroom scenarios:

Ever since I really began to get forward in my studies and consequently to demand more attention and help from my masters I have also begun to be conscious of the fact that in the Conservatorium I can’t get that help and attention... Imagine to yourself a class of 8 or 12 together with one master for an hour. There is of course no time to do the things properly. The exercises you have worked are just glanced through and there is hardly time to explain why this or that is wrong, still less to go through the various ways of correcting it and then choose the best. In my private lessons under Herzogenberg I am sometimes ½ an hour over one example, and work with him looking on and pulling me up with “that’s wrong! Find something else” whenever occasion requires. All this one cannot expect in a Conserv. 84

Here, Smyth indicates that students’ lack of one-on-one engagement with music theory teachers encouraged a kind of rote learning of concepts and their rules of application, with next to no guidance given as to the reasoning behind them, or even to how these rules might be more creatively and reflexively deployed. Her statements on this topic indicate that she experienced this style of theory instruction as something akin to the “banking” model of education critiqued by Paulo Freire, in which students are regarded

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as vessels to be filled with the master’s knowledge.\(^{85}\) And as her enthusiastic underlining suggests, she further understood that a certain regime of visibility in music theory classrooms, one where each student received very little direct attention from the instructor, lay at the root of the problem.

Given Richter’s emphatic explanation of why his *Lehrbuch der Harmonie* was conceived as a *practical* guide—that students, in the early stages of musical development, should be engaged not with questions of *why*, but of *how*—Smyth’s remarks appear to have been uttered in response to a longstanding culture of music theory teaching.\(^{86}\) Approaching these lessons from the viewpoint of an aspiring composer, Smyth clearly viewed this pedagogical model as inadequate for her needs, especially when compared to her private lessons with Heinrich von Herzogenberg, Johannes Brahms’ close friend and professional ally. And Riemann, in typically strident fashion, offered his thoughts on this state of affairs, this time from an instructor’s perspective:

Look at this bent old man, who for more than three decades now, day after day, four five, six hours long has sat at the same table, correcting the theory homework of his students—always the same kind of homework, always the same kind of mistakes. Do you wonder that years ago he stopped talking, that he silently and without batting an eye strikes out the parallel octaves and fifths and leaves it up to his pupils to look over his improvements at home?\(^{87}\)


\(^{86}\) Richter, *Lehrbuch der Harmonie*, v: “Hier gilt es also nicht zu fragen Warum, es gilt zunächst das Wie”.

\(^{87}\) Riemann, “Unsere Konservatorien,” 28: “Sieh dir diesen gebückten Greis an, der nun seit
Painting a picture of a discipline in a state of seeming unending circularity, Riemann’s remarks call attention to a teaching practice in which assessing students’ music-theoretical abilities was more or less limited to highlighting errors in students’ written work. As such, conservatory training instituted pens, pencils and notebooks (and sometimes chalk and blackboards) as the dominant media of assessment in music theory. In an ironic turn of events, a system so focused on the “practical” aspects of music education actually encouraged students to consider musical *writing* as the medium through which they would develop their music-theoretical knowledge and demonstrate it most directly to their teachers, not their musical instrument(s).

Contrastingly, the *partimenti* used at the Italian *conservatorio* in earlier centuries were designed to develop students’ contrapuntal expertise through highly regulated improvisational exercises at the keyboard, allowing those students to internalize and flexibly deploy various compositional schemata. At Leipzig, where these exercises were replaced by extended regimes of written work, music theory became a tool primarily of *analysis*, not composition or improvisation.

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Teaching *Vortrag*, Part 2: The Masterclass

Beyond music theory, how did students learn the art of analyzing and interpreting musical works? Outside of the conservatory, the aural milieu provided by Leipzig’s concert scene was certainly thought to benefit student performers; Plaidy suggested that students should never miss an opportunity to hear “good” concerts, because “assiduous observation of great masters,” as well as “well-performed orchestral and choral works,” would “profoundly encourage the player’s musical sense.” Indeed, in Mendelssohn’s initial calls for a conservatory of music to be located in Leipzig and not just any German city, he cited its rich performance culture as his primary justification, insisting that the high quality of both the performances and the works performed would serve as an “educational tool” (*Bildungsmittel*) for young musicians. Such an idea even shaped the conservatory’s timetable: in order to expose students to the center of this concert culture, no classes were scheduled on Wednesday mornings, allowing students to attend the *Gewandhaus* rehearsals free of charge.

It was in classroom settings, however, that students received their most direct

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training in performing pieces of music. Because, as David noted, teaching Vortrag superseded the capabilities of written discourse, and was therefore better left to the oral instruction of teachers, there is comparatively little surviving evidence as to how these performance classes were structured at Leipzig. One especially rich source is found in Rockstro’s account of his conservatory experiences, where he discusses Mendelssohn’s piano teaching in some detail. Rockstro recounted that Mendelssohn’s piano class took place once a week, in a class of eight pupils (this is confirmed by a timetable in the school’s archives). In it, each student would take their turn performing a piece that had been assigned to the entire group. Remembering how the class spent over two months working together on a single movement of Johann Hummel’s D minor Septet, it was clear to Rockstro that “he never left a piece until he was satisfied that the majority of the class understood it thoroughly.”

This practice, in which a class collectively studied a single piece of music, underlines how teaching Vortrag was a matter of transforming aspiring performers into analyzers and interpreters of musical works. On occasion, Mendelssohn could be obsessive in his attention to musical minutiae, resulting in one instance where every pupil, after sounding the opening chord of Hummel’s Septet, “was invited to resign his seat in favour of an equally unfortunate successor” due to the chord’s “want of sonority.” Borrowing Richter’s terminology, it might be said that Mendelssohn led his

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93 Rockstro, Mendelssohn, 106.
students through a “dissection” of the musical material, making thorough study of a work’s musical content foundational to the practice of performance. Moreover, Mendelssohn’s pedantry over a single chord suggests that Technik was by no means entirely separated out from questions of interpretation. Rather, Technik became an object of Mendelssohn’s teaching precisely when he addressed how specific passages of the work at hand might be rendered.

As Rockstro was evidently aware, there was much more to Mendelssohn’s pedagogic strategy than the sometimes “microscopic minuteness” of his critiques: “he wished his pupils to understand the principles by which he himself was guided in his interpretation of the works of the great masters, and at the same time to discourage servile imitation of his own rendering of any individual composition.”94 For one thing, he “never played through the piece which formed the subject of the lesson in a connected form.”95 And when students heard Mendelssohn play an entire piece during gatherings at his own home, he made sure never to play a piece that the class was studying. Indeed, the purpose of these classes was not to promulgate single, immovable interpretations of pieces of music, but rather to instill more general analytical—and one might even say ethical—dispositions in the performance of classical music.96

94 Ibid., 106–7.
95 Ibid., 107.
96 In using the term “ethical” in this context, I follow Lorraine Daston and Peter Galison’s discussion of what they call “epistemic virtues,” in which they posit that the mastery of expert practices “is inevitably linked to self-mastery, to the assiduous cultivation of a certain kind of self.” See Lorraine Daston and Peter Galison, Objectivity (Cambridge, MA: MIT Press, 2007), 40.
Through this proto master-class, Mendelssohn was able to engage personally with one pupil at a time, while the rest continued to learn through observation. Students could transpose Mendelssohn’s analysis of a work—and demonstrations of how that analysis could be transmuted into the practice of performance—onto their own approach toward the work at hand, as well as others they would encounter later. As one later author wrote, students could greatly enrich their knowledge of canonic literatures (Literaturkenntnis) by observing performances by other students and their teacher’s ensuing critique of those same performances.97 Crucially, such an arrangement afforded conservatory teachers the ability to train groups of students without sacrificing the individualized back-and-forth process of criticism, suggestion, and emulation so fundamental to transmitting highly subtle and technical styles of musicking. It also ensured that students were made aware—often painfully aware—of each other’s relative abilities and status in the eyes of their teacher. And first and foremost, students were incited to accept Werktreue as the tacit body of principles that gave their work meaning as nascent professionals within the field.

Due to an unfortunate lack of source materials, it is difficult to establish exactly to what extent the specifics of Mendelssohn’s teaching strategies were adopted by other instructors: the precedent of having an entire class play the same piece was certainly not

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always followed, and maybe some instructors did in fact give demonstrations of how they would perform an entire movement. Nevertheless, the central purpose of these classes—to guide students in the art of interpreting musical works—remained intact (even Liszt, apparently fully opposed to the Leipzig culture of performance, used his masterclasses to this end).\textsuperscript{98} In classes, just like in exams, teachers judged students as most competent when their playing demonstrated technical facility in combination with an implicit understanding of a piece’s musical content. Grieg, in a telling example, recalled Moscheles’ reaction to his performance of one of Moscheles’ own études in front of the class: “look here, boys, \emph{that} is what I call musical playing.”\textsuperscript{99} This weighty adjective, “musical,” connoted the ability to translate a knowledgeable conception of a work into one’s performance of it.

\textbf{Conclusions}

This chapter investigates \emph{Werktreue} through the historical and conceptual lens of expertise and its pedagogical production. My primary concern, therefore, has been to examine what Warwick has dubbed “the relationship between [a] complex pedagogical

\textsuperscript{98} Amy Fay recalled a fascinating incident, wherein a student from the Stuttgart conservatory played Beethoven’s Op. 57 Sonata (the \emph{Appassionata}) in one of Liszt’s masterclasses at Weimar, with Liszt’s reaction being less than complimentary. For Fay, the student “had a good deal of technique, and a moderately good conception of it, but still he was totally inadequate to the work.” Even in the case of Liszt’s less literalistic approach to interpreting works in performance, \emph{Werktreue} was still tacitly woven into the pedagogical foundations of his masterclasses. See Amy Fay, \textit{Music-Study in Germany, from the Home Correspondence of Amy Fay} (Chicago: A. C. McClurg & Company, 1886) (9\textsuperscript{th} ed.), 229.

economy and the specific range of skills, competencies and attitudes that it produced.”¹⁰⁰ Just like any other ideal that appears to govern a field, Werktreue’s “specificity – and its strangeness – is most clearly seen in the everyday work of its practitioners.”¹⁰¹ The kinds of everyday work analyzed in this chapter possess a special quality by virtue of having been pedagogical in nature, shaping practitioners’ most fundamental competencies and sensibilities. From this perspective, Werktreue’s ascension as a dominant practice among performing musicians was made possible by a whole host of pedagogical developments observable at, though not necessarily originating from, the Leipzig Conservatory during the nineteenth century. To recapitulate the most essential elements contributing to the production of Werktreue: a strategic focus on so-called “practical” work; the partial isolation of the “rendering” of musical works (Vortrag) as a discrete subject of training and examination, largely separate from the acquisition of technical proficiency (Technik); discourses of assessment in which Technik, Vortrag, and Fortschritte (progress) became the central concepts used to evaluate students’ abilities in performance; the elision of “musicality” and “musical talent” with the ability to successfully interpret musical works; competitive timetables of musical practice self-imposed by students, but also sanctioned by teachers; the institutionalization of technical knowledge and the means of its dissemination, seen most obviously in the media of classroom teaching and textbooks;

¹⁰⁰ Warwick, Masters of Theory, 172.

¹⁰¹ Daston and Galison have emphasized the role of scientists’ everyday practices—in their case, “the essential practice of scientific image-making”—in forming “objectivity” as a scientific ideal in the nineteenth century. See Daston and Galison, Objectivity, 17.
increasing specialization of pupils’ studies; and, finally, written forms of music theory instruction, designed to develop the music-analytical tools needed for “grasping” (auffassen) works interpreted in performance.

Emphasizing the heterogeneous nature of conservatory training, even at a single institution, might well provoke a parallel reconceptualization of the roles conservatories have played in the continuation of classical music practices, not least that of Werktreue, over the past 150 years or so. Although conservatories are often discussed as “conserving” institutions (often with reference to the etymology of the word conservatorio), this has merely been asserted as an outcome of collective conservatism, a kind of unquestioning adherence to the ideology of tradition.102 Understandable as this interpretation is in light of longstanding cultures of conservatory training, perspectives developed in science and technology studies make possible an alternative reading, whereby reproduction—not least in domains of expert practice—is “an ongoing achievement” of “sociomaterial assemblages”.103 To study conservatory pedagogy from this perspective requires assessing it not as a conservative monolith, but rather as an apparatus that has linked together various discursive, material, and institutional arrangements.104


104 This use of the word “apparatus” is, of course, indebted to Foucault. His most explicit formulation of the term as denoting a “heterogeneous ensemble” is found in Michel
To those who have witnessed elite performance pedagogies in classical music, many of the educational ideas and practices discussed in this chapter will ring true, perhaps uncomfortably so. To be sure, many important continuities can be drawn between the pedagogies of the Leipzig conservatory and those employed at similar institutions today, not least the overriding focus on performing canonical works. But significant differences are visible as well, several of which arose as responses to the perceived inadequacies of conservatory training itself. Ear training, as we will see in Chapter 3, became a common subject within German conservatory curricula in the decades surrounding 1900, precisely when music teachers began to discuss written methods of music theory instruction as inadequate for developing students’ aural capacities.105 And, in a similar way to the explorations of many contemporary music education scholars, music pedagogues at the turn of the twentieth century challenged the mind/body distinction presupposed by the Leipzig model of conservatory training, borrowing heavily from psycho-physiological discourses to posit decidedly different conceptions of human musicality.106 However tempting it might be to paint


105 Max Arend, for example, put it in rather extreme terms: “All theory for the eye is dead, is nothing, if it isn’t used as a vehicle for the ear.” See Max Arend, “Wie wird man musikalisch?”, Der Klavier-Lehrer 16/xi (June, 1893), 149–152, at 150: “Alle Theorie für’s Auge ist tot, ist ein Nichts, wenn sie nicht als Vehikel für’s Ohr benutzt wird.” See also Émile Jaques-Dalcroze, “The Place of Ear Training in Musical Education (1898),” in Rhythm, Music and Education, trans. Harold F. Rubinstein (New York, NY: G. P. Putnam’s Sons, 1921), 3–12.

106 The most visible proponent of these interventions was Émile Jaques-Dalcroze, though he was only one among many European conservatory professors engaged with these questions. For an emblematic example of how these educational ideas and methods attempted to bridge the divide between musical mind and musical body, see Émile Jacques-
conservatories as homogenous educational cultures immune to change, the historical
record instead makes clear that the pedagogies discussed in this chapter have been
added to and contested since their inception—less a sign of weakness than of their
enduring relevance for classical musicians.

Chapter 2

The Growth of Music Pedagogy in German Conservatory Curricula: Methodik, Psychology, and the Problem of Individual Differences

_On occasion, one less performance piece and, in its place, some real musical education!_—A. Benda, “Music Dictation and its Meaning for Music Instruction.”

Introduction

When Hermann Kretzschmar wrote of “a thick network of conservatories gradually coming to cover all of Germany” in 1903, he gestured towards the fact Germany had seen, over the course of the latter nineteenth century, an especially rapid transformation in the realm of elite music education. Like so many others in his professional circles, Kretzschmar was keenly aware of these sweeping changes in the educational and institutional makeup of the field. Kretzschmar, who had taught at the Leipzig Conservatory from the 1870s through the 1880s and would later oversee the introduction of Émile Jaques-Dalcroze’s pedagogical method “rhythmic gymnastics” (the subject of Chapter 4) into the Berlin Hochschule für Musik as its director in the 1910s, was careful to underscore his general support for the institutions to which he had

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dedicated so much of his career. But, while insisting that “the abolition of the conservatories… would be the ruin of German music and its international standing”, he still agreed with many of his colleagues that they were in desperate need of reform.³

Conservatories, as the most visible music-educational sites in the decades around 1900, tended to form the basis for problematizing music pedagogy as it was then constituted—its goals, methods, and broader epistemological foundations. The overarching message of most of these critiques was that conservatory graduates were flooding the profession with technically proficient performers, especially pianists, who could in no way be described as complete musicians. Worse still, these problems were seen as extending far beyond conservatory walls to the entire musical public, for the primary reason that many (if not most) of these graduates went on to become music teachers themselves. And they most often failed in this task, not only because they had received an incomplete musical training; they had also, by the end of their studies, gained little to no knowledge or experience in music pedagogy itself. For these reasons, conservatories were understood as having an enormous and thoroughly problematic influence over both the professional and amateur economies of musical expertise circulating throughout Germany. Gustav Stoewe, a prominent figure in the early growth of pedagogy courses in conservatories, put it as follows:

The notion that one who achieves competence in producing and reproducing [music] must therefore also be capable of teaching is based on the identification

of two distinct concepts, as well as a complete misunderstanding of these same concepts. It is more widespread among musicians than one would think; it is the reason why teacher training is barely considered as a specific subject of study, and continues all too often to be disregarded. This neglect is the primary cause of a range of calamities in the musical conditions of our time.4

Such calls to develop students’ own pedagogical expertise were part and parcel of larger concerns surrounding the dominant focus on performance, which came at the expense of other potential subjects of learning.5 Indeed, as we saw in Chapter 1, aside from

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4 Gustav Stoewe, *Die Ausbildung für das musikalische Lehrfach: ein Beitrag zur Reform der Konservatorien für Musik* (Leipzig: Matthes, 1870), 3: “Die Ansicht, daß derjenige, welcher Tüchtiges im Produiren oder im Reproduiren leistet, darum auch gut unterrichten könne, beruht auf Identificirung zweier verschiedener Begriffe, auf vollständiger Verkennung derselben. Sie ist verbreiteter unter den Musikern, als man glauben sollte; sie ist der Grund, daß die Ausbildung für das Lehrfach kaum als besonderes Studium betrachtet und bisher nur zu oft vernachlässigt wurde. Diese Vernachlässigung aber ist wieder die Hauptsache einer Reihe von Kalamitäten unserer Musikzustände.” Emil Breslauer, first editor of *Der Klavier-Lehrer*, echoed these sentiments almost verbatim thirteen years later in his journal: “Unfortunately there exists a widely held, erroneous opinion that the eminent virtuoso or composer must also be able to achieve eminence as a teacher. And so it happens that so many artists barely consider training in teaching music as a specific subject of study, out of which springs the much-maligned, minimal success of music instruction, which all too often is conferred and taken up with disinclination—a burden for teacher and student.” See Emil Breslauer, “Methodik des Klavier-Unterrichts,” *Der Klavier-Lehrer* 6 (1883), 59: “Es ist leider eine viel verbreitete irrige Ansicht, dass der hervorragender Künstler, der Virtuos und Komponist, auch als Lehrer Bedeutendes leisten müsse. Daher kommt es, dass so viele Künstler die Ausbildung für das musikalische Lehrfach kaum als ein besonderes Studium betrachten, daraus entspringt auch der so vielfach gerügte geringe Erfolg des Musikunterrichts, der allzuhäufig mit Unlust ertheilt, mit Unlust aufgenommen wird,—eine Last für Lehrer und Schüler.”

5 With regard to Hugo Riemann’s discussion of conservatories, for example, Michael Fend has noted that, from the 1880s, “he tirelessly criticised their exclusive training in performance and advocated the urgent need to give pupils a musically diversified and general education.” See Michael Fend, “Riemann’s challenge to the Conservatory and the modernists’ challenge to Riemann,” in *Musical Education in Europe (1770-1914): Compositional, Institutional, and Political Challenges Volume 2*, eds. Michael Fend and Michel Noiray (Berlin: Berliner Wissenschafts-Verlag, 2005), 419.
music theory, music performance was the only subject in which most conservatory students faced any sort of meaningful assessment up until about the 1880s. And even a quick glance at the distribution of both student specializations and teaching hours shows that this was not just a matter of minimal or non-existent assessment practices, but simply of what subjects held priority in conservatory curricula. For many of these writers, the irony was that, by dedicating the vast majority of their labor towards learning an instrument, students came to lack the broader kinds of musical skill and knowledge that would enable them to perform works at a high level. As Kretzschmar put it, “the lack of general education leads to vapidness of performance and interpretation.”

In this chapter, we will begin to trace several significant transformations in music-educational practice and discourse visible in German conservatory pedagogy.

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6 Consider, for example, some broadly representative numbers from the Hochule für Musik in Berlin and the Dresden conservatory from the late 1870s: At Dresden in the school year of 1878-79, performance classes in instruments like piano, violin, and the voice ranged from 2-4 pupils per class, with most being taught for two hours each week. Harmony classes were taught in groups of 7-9 pupils for two hours each week; counterpoint in classes of 4-5 students for two hours each week; there were only two composition students, who studied together in one class for two hours weekly under Franz Wüllner (whose Chorübungen der Münchener Musikschule I discuss in Chapter 3). And, with music history, one hourlong, weekly lecture was given to 138 pupils. In the same school year at Berlin’s Hochschule für Musik, the average weekly hours of teaching hours were as follows: instrumental classes, 222 hours; singing classes, 173 hours; music theory, 57 hours; music history, 6 hours. For the numbers at Dresden, see See Siebenter Bericht des Dresdener Konservatoriums für Musik (Dresden: Liepsch & Reichardt, 1878), 47-65. For the numbers in Berlin, see Jahres-Bericht über die mit der Königlichen Akademie der Künste zu Berlin verbundenen Lehr-Anstalten für Musik, betreffend den Zeitraum vom 1. October 1877 bis zum 1. October 1878 ([publisher unknown], 1878), 5-8. Copies of these reports can be found in, respectively, Universität der Künste Berlin, Universitätsarchiv, Bestand 1a/19; Universität der Künste Berlin, Universitätsarchiv, Bestand 1/D1.


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around 1900. As we will see throughout the remainder of this dissertation, one important dimension of these changes was a discernable shift concerning what constituted human musicality in conservatory contexts. As Leo Kestenberg—the central figure responsible for the music-educational reforms of the Weimar Republic—wrote in his 1934 article, “Musikerziehung in unserer Zeit” (Music Education in our Time), “the new methodologies of pedagogy (Methodik) has already taken up the question “what and who is musical?” from entirely different points of view than earlier periods.” If earlier discourses of evaluation in German conservatories conflated the term “musical” with the ability to demonstrate understanding of musical works, the figures discussed in this chapter relocated human musicality, and the potential of its educability, among a complex of mental and bodily functions. Moreover, as I explore in this chapter and Chapters 3 and 4, we will see how these shifts around the very notion of human musicality were deeply imbricated with widespread and multiple transformations in the music pedagogies practiced in German conservatories during the decades surrounding the turn of the twentieth century. Hence the choice of this chapter’s epilogue: many of the figures referenced in this chapter realized that, if their pedagogical designs to produce musical persons were to be implemented in these institutions, they would have to carve out space in conservatory curricula then dominated by training in music performance. If the seemingly unquestioned centrality of performance—and a very

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specific kind of performance at that—in German music education had created a kind of crisis of musical expertise, a little less of it would allow other (and, in their view, desperately needed) aspects of musical skill and knowledge to be cultivated.

**The Psychological Turn and the Student as Object of Knowledge**

In the latter nineteenth and early twentieth centuries, a variety of subjects began to be taught for the first time in German conservatories, including ear training (*Gehörbildung*), music dictation (*Musikdiktat*), rhythmic gymnastics (*rhythmische Gymnastik*) and, most significantly in the context of this chapter, music pedagogy itself. Before we look in more detail at these pedagogies in Chapters 3 and 4, it is useful to clarify some of the broader reorientations and institutional changes that accompanied them and made them possible. As Kestenberg wrote in the above-quoted article, an underlying thread connected a diverse array of new forms of training:

> All methods that seek to realize the ideas of the new music education place the creative capacity of the student at their center… Ear training and music dictation, vocal training and improvisational exercises—all are designed to extend the creative germs of musical experience and form, while taking instrument and voice as the external means through which a firm musical imagination appears… Most piano, violin, and singing methods now begin with the acquisition of musical understanding, and only then come to questions of technique. They lay particular weight on an independent conception of active hearing and position themselves in various ways against uncontrolled, frenzied, passive, and thoughtless modes of musical consumption.  

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9 Leo Kestenberg, “Musikerziehung in unserer Zeit (1934),” 42-3: “Aber alle Methoden, die die Ideen der neuen Musikerziehung verwirklichen wollen, stellen die eigene schöpferische Tätigkeit des Schülers in den Mittelpunkt… Gehörbildung und Musikdiktat, Stimmbildung
“The creative capacity of the student.” “Extend the creative germs of musical experience.” “The external means through which a firm musical imagination appears.” “An independent conception of active hearing.” “Against uncontrolled, frenzied, passive, and thoughtless modes of musical consumption.” Such turns of phrase make it all too clear what Kestenberg could see from his then retrospective (and recently exiled) position: the previous half century had witnessed the rise of music pedagogies that built explicitly upon contemporaneous psychological research into human perception, expertise, and training. As he wrote earlier in the same article, “the actual essence of the new music education” could only be illuminated by turning toward “the discoveries of general pedagogy and psychology (die Erkenntnisse der allgemeinen Pädagogik und Psychologie).”

So what, then, had these disciplines made possible for the so-called “new music education”? In the broadest sense, it was the turn toward students themselves as objects of both observation and intervention. Kestenberg put it as follows, this time in “Musikerziehung der Gegenwart” (Music Education of Today), an article from 1929: “it
was around the turn of the [twentieth] century that the active learner (der Lernender),
the object of education—in short, the student—was placed in the foreground. All
interest now grouped itself around him; the dispositions and abilities of the student were
now open to research and development.”¹¹ Neurologist and child psychologist Édouard
Claparède, who will reappear in Chapter 4 as the primary collaborator with Émile
Jaques-Dalcroze in the development of rhythmic gymnastics, described this
development as follows: “The educational problem comprises, then, two things: the
matter to be taught, and those to whom it has to be taught—the curriculum and the
pupil. We have hitherto given all our attention to curricula, and to manuals; it is time
that we concerned ourselves a little with those for whom these are supposed to be
made.”¹²

How did this turn toward “the dispositions and abilities of the student” intersect
with shifting notions of human musicality? Maria Leo, a now little-known figure in the
development of music education as a discipline in Germany around the turn of the

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¹¹ Leo Kestenberg, “Musikerziehung der Gegenwart (1929),” in Leo Kestenberg,
Gesammelte Schriften, Band 2.2, edited by Ulrich Mahlert (Freiburg: Rombach Verlag,
2012), 331: “War damals Lehrer und Lernen das Wichtigste, so rückte um die
Jahrhundertwende der Lernende, das Objekt der Erziehung, kurz der Schüler, in den
Vordergrund. Um ihn gruppierte sich nun das ganze Interesse; die Anlagen und Fähigkeiten
des Schülers galt es, zu erforschen und zu fördern”.

¹² Édouard Claparède, Experimental Pedagogy and the Psychology of the Child, trans. Mary
Louch and Henry Holman (New York: Longmans, Green and co, 1911), 2-3. Furthermore,
it is worth noting that Ernst Meumann—generally considered to be the founding figure in
experimental pedagogy—acknowledged in 1908 that there was a broader shift in
pedagogical research and orientation to techniques of learning, not only techniques of
teaching. See Ernst Meumann, The Psychology of Learning: An Experimental Investigation
of the Economy and Technique of Memory, translated by John Wallace Baird (New York:
Appleton, 1913), xiii.
twentieth century, wrote of how “pedagogical psychology” had enabled music
educators to disentangle the term “musicality” from underdetermined notions of
individual genius, and instead redefine it in relation to various psychologically-
observable processes. As she noted in “Pädagogik als Lehrgegenstand im Musiklehrer-
Seminar” (Pedagogy as a Subject in the Music Teacher Seminars), a 1904 lecture
delivered at the second National Music Pedagogy Conference in Berlin:

Just as other individual men and peoples in specific periods of time have sought
to realize their educational ideals in the following generations, psychology
clarifies for us the object of education... here, we are concerned only with
pedagogical psychology. It gives us knowledge of our student, of the range of his
mind, of his abilities, for it illuminates the phenomena of the human mind:
attention, memory, the sequence of chains of thought, the successes of
habituation and practice, the influence of the will on activity, interest, inclination,
reluctance, etc.13

Similarly, when discussing “the question of the fundamental change in the meaning of
the word “musical,’” Kestenberg wrote that “psychology has stripped the word entirely
of the dogmatic character it once had, and we nowadays recognize the premise that in
the fundamental sense every human being is musical.”14

13 Maria Leo, “Pädagogik als Lehrgegenstand im Musiklehrer-Seminar,” in Zweiter
Musikpädagogischer Kongress, 6-8 Oktober 1904 zu Berlin: Vorträge und Referate, edited
by the Vorstand des Musikpädagogischen Verbandes (Berlin: Verlag “Der Klavier-Lehrer”,
1904), 33-34: “Wir haben es eben nur mit der pädagogischen Psychologie zu tun. Sie gibt
uns Kenntnis von unserem Schüler, von seinem Gedankenkreis, seinen Fähigkeiten; denn
sie gibt uns Aufklärung über die Phänomene des menschlichen Geistes: Aufnehmen,
Einordnen und Wiedergeben von Vorstellungen, Aufmerksamkeit, Gedächtnis, Ablauf von
Gedankenreihen, Erfolge der Gewöhnung, der Uebung, Einfluss des Willens auf die
Betätigung, Interesse, Zuneigung, Abneigung u. s. f.”

In keeping with the experimental and applied psychologists from whom they drew many of their attitudes and techniques, Kestenberg, Leo, and their colleagues increasingly approached students not as artists, performers, composers, and the like, but rather as perceivers and producers of musical sound. Indeed, music pedagogues had been all too happy to, in this way, echo the broader psychological turn that educational research had taken during this period.\textsuperscript{15} As Hugo Münsterberg, a key figure in the development of applied psychology and experimental pedagogy, wrote in his 1909 \textit{Psychology and the Teacher}, “if we were to seek an expression for the most important truth which modern psychology can furnish the teacher, it would be simply this: the pupil is a reaction apparatus.”\textsuperscript{16} It was from this perspective that music dictation, a practice designed to hone students’ aural perception by requiring them to transduce that perception into another medium (in this case, musical writing), could be touted as a form of “real musical education” in contradistinction to performing a musical work.

\textbf{Problematizing Music Pedagogy: \textit{Methodik}}

Alongside the rapid expansion of music conservatories (in both size and number),


various media of music-pedagogical exchange emerge from the late 1870s onwards: music education journals (most notably Der Klavier-Lehrer and Gesangpädagogische Blatter, combined in 1911 into the Musikpädagogische Blatter), national and local conferences for music educators, and professional associations such as the Musikpädagogischer Verband (Music Pedagogy Association). Together with the yearly reports of many conservatories, which frequently included stand-alone articles on music-pedagogical issues penned by faculty, it is around this time that regular fora for published music-pedagogical discourse came into being. Whether or not one chooses to characterize these developments as indicative of music education’s emergence as a discipline, it is certainly clear that they made possible a veritable explosion of music-pedagogical discourse.

Figure 2.1.
A request from the director of the Halle conservatory, Bruno Heydrich, that other conservatories send him their yearly reports.\textsuperscript{17}

\textsuperscript{17} The text translates as follows: “Allow me to send my latest yearly report, and to request
The emergence of conservatories seems to have stood in an almost paradoxical relationship with this burgeoning of music-pedagogical knowledge and its circulation. On the one hand, the growth of conservatories contributed in no small part to the rapidly growing domains of discursive production around music education. And, on the other, it was precisely in these new media of exchange that many music pedagogues began to critique the practices, aims, and methods of conservatory training. Put differently, conservatories had opened up a set of institutional spaces in which music pedagogy had become a widespread and everyday problem, and it was increasingly through the lens of non-musical disciplines—in particular those of psychology and general pedagogy—that music educators approached what they deemed to be the most pressing issues facing their profession.\(^\text{18}\)

For many of the figures discussed in this chapter, enmeshed as they were in the day-to-day grind of instruction, the goals and techniques of conservatory education were at best underdetermined and, at worst, entirely misplaced. And perhaps in no other area was this more the case than in the subject of music education itself: as they pointed out with some regularity, most conservatories had eschewed including music pedagogy

\(^\text{18}\) For a discussion of the unique set of circumstances that made possible extensive intermingling between the arenas of experimental psychology, music theory, and music criticism in latter nineteenth-century Germany, see Benjamin Steege, *Helmholtz and the Modern Listener* (Cambridge: Cambridge University Press, 2012), Chapter 1: “Popular Sensations.”
as a bona fide subject of instruction. Most pressingly, conservatories were flooding the profession with graduates who had received neither practical training in nor theoretical knowledge of music pedagogy. But over the course of the 1870s through to the 1920s, a number of interrelated terms began to enter German conservatory curricula: Seminar, Methodik, Pädagogik. While these terms held sometimes quite distinct valences, their more or less simultaneous rise signals an overarching transformation: music pedagogy itself became a significant and widespread subject of training within conservatories of the period.19

Writing in “Methodik, ein nothwendiges Lehrfach an Musikanstalten” (Methodik: a Necessary Subject of Study for Music-Educational Institutions), an article published in the 1888 yearly report of the Musik-Akademie für Damen in Dresden, Louis Grosse discussed this development:

19 Some of these courses were introduced in the latter nineteenth century at the following conservatories: Dresden conservatory, latest 1878 (Seminar für Klavierlehrer, taught by Eugen Krantz); Hoch’s conservatory in Frankfurt am Main, 1884 (Vorlesungen über Methodik des Klavierspiels and Seminar für Klavierlehrer, taught by Iwan Knorr); Cologne conservatory, latest 1885 (Seminar für Musiklehrer, taught by “Dr. Klauwell”); Hamburg conservatory, latest 1887 (Seminar/Elementarklassen, supervised by Karl F. Armbrust and Hugo Riemann); Karlsruhe conservatory, latest 1887 (Methodik des Klavierunterrichts, taught by Heinrich Ordenstein); Stern conservatory in Berlin, latest 1890 (Methodik, taught by Gustav Adolf Papendick). See, respectively: Siebenter Bericht des Dresdener Konservatoriums für Musik (Dresden: Liepsch & Reichardt, 1878); Sechster Jahresbericht des Dr. Hoch’schen Conservatoriums zu Frankfurt am Main (Frankfurt a. M.: C. Adelmann, 1884); Konservatorium der Musik in Köln: 1885 ([publisher unknown], 1885); Das Konservatorium der Musik zu Hamburg: seine Entstehung, Entwicklung und Organisation (Hamburg: J. F. Richter, 1887); Dritter Jahresbericht des Konservatoriums für Musik in Karlsruhe (Karlsruhe: Braun’schen Hofbuchdruckerei, 1887); Stern’sches Conservatorium der Musik zu Berlin: Bericht über das Schuljahr 1889/90 (Berlin: Volks-Zeitung, 1890). Aside from the report from the Stern’sches Conservatorium, all of these reports can be found in the archive of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1a. For the report from the Stern’sches Conservatorium, see Universität der Künste Berlin, Universitätsarchiv, Bestand 4/1.
It was not long ago that music students were given practically no opportunities to acquire the necessary knowledge in the subject of teaching alongside their music studies. Indeed, \textit{Methodik} was first introduced around two decades ago in the larger music institutions of Germany as a subject of instruction… the introduction of \textit{Methodik} in the music-educational institutions is to be viewed as great progress, and it is already noticeable that music instruction is taken more seriously in general, and that superficial cultivation of music is being struggled against more and more.\textsuperscript{20}

As Grosse went on to explain, the development of \textit{Methodik} (perhaps best translated as “methodology of pedagogy”) did not entail disseminating a singular method of music pedagogy, or adherence to a particular individual’s suggestions. Rather, invoking the benefits of modes of knowledge production more akin to scientific disciplines, developing methods of music instruction was discussed as both a communal and ongoing endeavor: \textit{"Methodik is not the work of an individual, it is rather the total result of the thought and experiences of many of the best pedagogues; and nor is it to be viewed as a concluded science. Rather, it will continue to be worked on… the result and the successes of this communal striving will be presented to the student in the lectures on \textit{Methodik}."}\textsuperscript{21} In other words, the growth of \textit{Methodik} coincided with a broadly

\textsuperscript{20} Louis Grosse, “Methodik, ein nothwendiges Lehrfach an Musikanstalten,” in \textit{Zwölfter Jahres-Bericht ueber die Musik-Acadamie für Damen} (Dresden: Julius Reichel, 1888), 3-4: “Allerdings war bis vor nicht langer Zeit dem Musikschüler fast gar keine Gelegenheit geboten, sich neben seinen Musikstudien gleichzeitig auch die nöthigen Vorkenntnisse für das Lehrfach aneignen zu können; denn die Methodik ist erst seit ungefähr zwei Jahrzehnten an den grösseren Musikanstalten Deutschlands als Lehrfach eingeführt worden… Es ist deshalb die Einführung der Methodik in den Musikanstalten als ein grosser Fortschritt anzusehen, und schon jetzt ist es bemerkbar, dass man es im Allgemeinen mit dem Musikunterricht ernster nimmt, dass man mehr und mehr dem oberflächlichen Musiktreiben entgegenarbeitet.”

\textsuperscript{21} Grosse, “Methodik, ein nothwendiges Lehrfach an Musikanstalten,” 4: “Die Methodik ist
distributed group of music educators—many of whom taught in conservatories—
attempting to systematize the nature and extent of music-pedagogical practice. But such
disciplinary imperatives also required that educational methodologies be continually
problematic and expanded, and it was this institutionalized openness that would, in
the following decades, make it possible for music educators to import psychological
discourse and techniques so extensively.

The earliest articulations of Methodik appear to have done little more than
codify the pedagogical ideas and techniques encountered in Chapter 1 of this
dissertation: Technik, Vortrag, and music theory. (If there is one significant change, it is
that the physical and acoustical properties of the respective instruments—especially
piano—seem to have been discussed at some length). As articulated by figures such as
Iwan Knorr (Frankfurt am Main Conservatory) and Gustav Stoewe (Potsdam
Musikschule) in the 1870s and 1880s, Methodik did not constitute a wholesale
rethinking of the aims of conservatory pedagogy, but instead attempted to clarify the
most effective means of achieving these aims.23

22 See, for example, Gustav Stoewe, “Die Methodik des Klavierunterrichts an der

23 Consider the curriculum of one of the earliest of sets of lectures on piano pedagogy,
taught by Eugen Krantz at the Dresden Conservatory from 1877:

“1. The mechanics of piano playing.

The instrument (its historical development, its current structure, the mechanism of playing).
The player (his natural condition, the capabilities of his limbs and joints). Relationship of
the player to the instrument (sitting at the piano, posture of the body, arms, hands, and fingers; the process of playing). Touch (its essence, its four main types: finger-, knuckle-, hand-, and elbow-joint). Intonation (strength and length of sound, relationship between intonation and the types of touch). The results of touch and intonation (accent and nuance; linking and separating sequences of notes; relationship of types of touch to sequences of notes). Latitude (the relations of the keyboard). The nature of positions (normal position, narrowed and widened position; means of changing the position; combined positions). Locomotion (types thereof).

2. Material of Instruction.

Critical-historical overview of piano (especially instructional) literature. Theoretical material, technical exercises (their arrangement into groups), etudes and pieces of music. Distribution of the material according to the student’s differing levels of development.

3. The Lesson.

Teachers (how they are and how they should be; the necessary qualities of character and spirit for the position of teaching; general, general-musical, and specialized education). The student (handling of different individuals and levels of talent). The means of instruction (instructional method with respect to theoretical tasks, individual groups of technical exercises, etudes, pieces of music, sight reading, four-hand and ensemble playing, memorization, playing to students and teacher). The lesson (distribution of the subjects taught, general pace of instruction). Practice (direction of the student in this regard).”

This report is taken from the 1878 yearly report of the Dresden conservatory. A copy of this report is held in the archives of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1a/19. See Siebenter Bericht des Dresdener Konservatoriums für Musik (Dresden: Liepsch & Reichardt, 1878), 64-5:

“1. Mechanik des Clavierspiels.


2. Unterrichtsmaterial.

If earlier instantiations of Methodik were yet to import the terminology of psychology into the teaching of music pedagogy to any significant extent, later curricula—especially those after 1900—would make increasingly explicit and common references to psychological modes of thinking (for example, rather than simply listing “practice” as a subject, it would come to be “the psychology of practice” (Psychologie des Übens)).

Leo, in her above-quoted lecture at the 1904 National Music Pedagogy Conference, noted that earlier courses on Methodik did not sufficiently address broader educational problematics circulating outside of more immediately musical contexts. As such, she suggested that teacher training in music must embrace wider developments in pedagogical discourse and practice, specifically that of “pedagogical psychology.” As she put it:

Verteilung des Materials auf die verschiedenen Entwicklungsstufen des Schülers.

3. Der Unterricht.


In one example, the 1927 yearly report for the Hochshule für Musik in Berlin reported that, in the violin section of the department for music education (Seminar für Musikerziehung), students were taught about the “psychology of instrumental practice and its consequences” (Psychologie der Instrumentalen Übung und Folgerungen für die Praxis des Uebens).” Staatlich Akad. Hochschule für Musik Berlin zu Charlottenburg: Jahresbericht vom 1. Oktober 1925 bis 30. September 1927 (Berlin: [publisher unknown], 1927). A copy of this report is held in the archives of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1, D7.
Every form of instruction, whatever kind it may be, rests on two pillars that the teacher must bring: first, theoretical and practical mastery of the subject [i.e. music], and second, theoretical and practical mastery of didactics… and so it follows that the foundations of educative instruction—those offered by pedagogical science—must absolutely be an essential element of music teacher training.25

On top of the growing number of lecture courses on music-pedagogical subjects for aspiring teachers (especially in piano), students were also given the opportunity to gain practical experience in teaching. Quite consistently, the various “Seminars” (seminars for teacher training) which began to appear in German conservatory curricula had both “theoretical” and “practical” components. In the former, students attended lectures on the methodology of teaching (Methodik or Pädagogik) which dealt primarily with specialized aspects of instruction in a particular instrument (again, mostly the piano); in the latter, students actually engaged in teaching young children. In 1887, the following was noted in the Frankfurt Conservatory’s yearly report concerning the Seminar run by Iwan Knorr:

The Seminar, established three years ago, has proven itself to be a very fruitful addition to our institution. It assists students of the conservatory—those advanced in knowledge and ability, who are inclined towards and able to

25 Leo, “Pädagogik als Lehrgegenstand im Musiklehrer-Seminar,” 30-31: “Jeder Unterricht, welcher Art er auch sei, beruht auf zwei Stützen, die der Lehrer mitbringen muss. Dass ist einerseits die theoretische und praktische Beherrschung des Faches, welches gelehrt werden soll, und andererseits die theoretische und praktische Beherrschung der Lehrkunst… Es ergibt sich also aus alledem, dass die Grundlagen des erziehenden Unterrichts, wie sie die pädagogische Wissenschaft bietet, unbedingt ein Hauptbestandteil der Musiklehrerausbildung sein müssen.”
undertake the profession of teaching, and have already successfully completed a course in the Methodik of piano instruction—by giving them the opportunity to train in practice, under the guidance of one of our institution’s teachers. For this purpose the aspiring teachers are generally entrusted with two students, who are to be taught according to a course of instruction decided upon by the directors of the conservatory. In a weekly conference, the prospective teachers discuss their experiences with the director of the Seminar [Iwan Knorr]; in particular, advice concerning the individual handling of students is shared.26

As in several other institutions, the Seminar at Frankfurt am Main required that a conservatory professor be present while aspiring teachers gave lessons to their students, and it also provided a weekly forum in which the problems of individual cases could be discussed in tandem with one another. Even if conservatory professors like Krantz and Knorr had yet to employ psychological terminology with any regularity, they were less hesitant to adopt rhetorics of collective experimentation and practical efficacy so

fundamental to experimental psychologists’ presentation of their own discipline. Describing Krantz’s pedagogical activities, Ernst Paul, a professor at the Dresden Conservatory, wrote that it was “with great success he was active as a trainer of teachers: in his Seminar he found ample opportunity to put his pedagogical principles to the test, which yielded fruit by the hundredfold.”\textsuperscript{27} Indeed, a constant refrain in the descriptions of the Seminars was that their setup—especially the “conferences” in which Seminar students could discuss their progress and/or problems with pupils—helped to make possible music-educational principles and techniques honed through practical experience. One significant consequence, then, of introducing the “Seminars” into conservatory curricula was that the practice of music pedagogy itself became an object of observation for conservatory professors (one might go so far as to call these situations “meta-pedagogical”). Furthermore, it is clear that such observations took place primarily in the realm of elementary instruction—that is, in teaching children. Though it may be easy to brush off the growth of these elementary music classes (generally entitled either Elementarschule or Elementarklasse) in conservatories as cynical ploys to fill the institutions’ coffers, it is nevertheless clear that, from the 1880s onward, the problem of elementary education in music became a frequent topic of discussion in journalistic discourse.\textsuperscript{28}

\textsuperscript{27} Paul’s article on Krantz as a teacher was published in the 1905 yearly report of the Dresden conservatory, a copy of which is held in the archives of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1a/19. Ernst Paul, “Eugen Krantz als Klavierpädagog.” In Bericht des Königl. Conservatoriums für Musik und Theater in Dresden über das 49. Studienjahr 1904/1905 (Dresden: [publisher unknown], 1905), 7.

\textsuperscript{28} See, for example, the following articles in Der Klavier-Lehrer: Louis Köhler, “Praktischer Klavierunterricht für Anfänger,” Der Klavierlehrer 1 (1878), 2-4, 17-19, 29-
**Observing the Student and the Problem of Individual Differences**

In their discussions concerning the practical problems faced in music-pedagogical contexts, music pedagogues began to consider the individualities of students as an unavoidable problem posed by both public and private training practices. This idea, of course, extended far beyond music to a variety of pedagogical domains. As historians of psychology have shown, it was precisely the exigencies of compulsory education and the problem of “retarded” students, first in France and then elsewhere, that enabled “psychology to become a privileged partner to pedagogy,” over and above that of psychiatrists. Arguing that “abnormal” children were not necessarily sick, but rather slow (that is, developmentally behind their peers), Alfred Binet, a leading French psychologist of the latter nineteenth century, proposed that, with the help of his intelligence tests, such students could be identified and put in special education.

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30 For a discussion of the problem of individual differences and its relation to applied psychology and psychotechnics around 1900, see Chapter 3 of this dissertation.

classes. Though most of the figures discussed in this dissertation approached the binary of normal/abnormal with some suspicion, Stoewe was less hesitant to embrace such a divide:

Instruction in *Methodik* in most related fields is two-fold. Like in medical science in which a double study is required—the knowledge and handling of the healthy and sick body—so it is with *Methodik*. The healthy body in our case is: a normal arm and musical talent of the student; the sick body: inadequately formed limbs, joints, and muscles, as well as defective hearing and feeling for rhythm, minimal desire for learning, and other things. This second part is by far and away the most difficult; but it is the most needed, for those unfavorable conditions are to be found far more often than favorable ones. They make *deviation from the normal course of instruction and from the normal methods of instruction* necessary.

Aside from the frankly ironic insistence that the “sick” were to be found “far more often” than the “normal” when it came to musical capacity, Stoewe can nevertheless

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34 In a not entirely dissimilar manner, Steege has noted how, as early as Helmholtz’s earliest researches into the psychophysics of listening during the 1850s, what were previously thought of as “pathological” states of aural perception were recast as the norm. See Steege,
be placed within a broader lineage of music educators who sought to shift the presumed basis of music-pedagogical discourse away from, as H. Schumann put it, “ideal students and practices”. Though Stoewe appears to have been content with adopting the dualism of “normal” and “sick” students, such clear-cut distinctions did not persist as the basis for the pedagogical classification of musical differences. As early advocate of “differential psychology” and applied psychology William Stern wrote in his *Die psychologischen Methoden der Intelligenzprüfung und deren Anwendung an Schulkindern* (The Psychological Methods of Testing Intelligence and their Application to Schoolchildren), it was, from the perspective of “practical pedagogical interests”, crucial to also differentiate “within the range of normality.” Teachers should therefore get to know students in all their variabilities, not only as a push towards ethically sounder modes of student-teacher interaction, but also because it was precisely such knowledge of students that would form the basis of new, more effective modes of instruction. In Schumann’s words, “my most zealous endeavor is thus to get to know

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*Helmholtz and the Modern Listener*, 75-76.


36 The whole quote reads as follows: “It is not to be supposed, however, that intelligence testing of normal children has merely the secondary importance of supplying standards of comparison for investigations of the feeble-minded. On the contrary, the gradation of intelligence within the range of normality is an entirely independent problem that is closely connected with practical pedagogical interests.” See William Stern, *The Psychological Methods of Testing Intelligence*, trans. Guy Montrose Whipple (Baltimore: Warwick & York, 1914), 8.
my student from the first lesson, in order to gain influence over him.”37

In some earlier instances, this newfound attention to differences among students amounted to little more than passing mentions of the physical composition of their bodies—that is, the potential difficulties teachers could face when it came to the development of Technik. For Selmar Bagge, director of the Basel Musikschule and a prominent piano teacher and music critic, the differing anatomical makeup of students’ hands were of particular importance: “What difficulties arise for the teacher out of the different construction of the hands! One student has fleshy hands with nimble joints, but also perhaps weak muscles and minimal energy of character; the other has bony—and therefore more sinewy than fleshy—hands, which, generally speaking, are connected to a certain squareness and hardness in nature.”38 And Krantz (director of the Seminar for Music Pedagogy at Dresden) expressed similar thoughts in an 1892 lecture, “Einiges über Musik und Musikunterricht” (Some Thoughts on Music and Music Instruction): “I ask that you consider in what state the novice student is in, who must tread on the enormous ladder of development up to the heights of today’s technique? Of course, each one brings along ten fingers, but in what condition?”39


Especially from the 1890s onwards, however, music pedagogues increasingly came to individualize students less through the lens of anatomical science, and much more through that of psychology. To be sure, this must be seen as part of a broader movement in music pedagogy, one that placed students’ listening capacities front and center (this turn towards “the ear” is discussed in some detail in both Chapters 3 and 4).

As Ernst Paul wrote in his “Empfindung, Vorstellung und Gedächtnis. Abhandlung aus dem Gebiete der pädagogischen Tonpsychologie” (Sensation, Conception, and Memory: an Essay from the Field of Pedagogical Sound-Psychology), it was especially important to consider the highly individual “sensory life” of the student in this regard: “The differentiation of individuals according to age, sex, temperament etc. testifies to the most diverse differences with respect to sensory feeling; the music teacher must

_Konservatoriums für Musik und Theater zu Dresden über das 37. Studienjahr 1892/1893_ (Dresden: Warnatz & Lehmann, 1893), 12: “Ich bitte, sich zu überlegen in welchem Zustande der Neuschüler ist, welcher an die riesenhafte Entwicklungsleiter zur Höhe der heutigen Technik tritt. 10 Finger bringt ja Jeder mit, aber in welchem Zustande?”

My intention here is not to suggest that the turn toward psychology was responsible for the emergence of individual differences as a problematic within music education, but rather that psychological conceptions of human subjects offered a particular framework for rethinking what kind of differences were salient to music-pedagogical practice. Furthermore, as Nikolas Rose has pointed out, it was precisely psychologists’ engagement with institutional spaces specific to the latter nineteenth century that enabled the development of what he calls an “individualizing technology”: “A psychological knowledge of individual differences did not emerge from a mysterious leap of the intellect or from laborious theoretical and scientific inquiry… rather, it needs to be understood in relation to the mundane organizational practices of those social apparatuses constructed in so many European states in the late nineteenth century… schools, hospitals, prisons, reformatories, and factories acted as apparatuses for the isolation, intensification, and inscription of human difference.” See Nikolas Rose, _Inventing Our Selves: Psychology, Power, and Personhood_ (Cambridge: Cambridge University Press, 1996), 89.
study the peculiarity of his student, whose sensory life must be carefully surveilled.”

Concerned as they were with students’ sensory dispositions, some music educators began to frame the problem of individual capacity less along the axis of normal/abnormal, and more in terms of “types,” a mode of psychological thinking that had gained increasing currency since Alfred Binet and Jean-Martin Charcot’s explorations of learning or memorial types (auditory, visual, and motor). In a 1928 article in the *Neue Zeitschrift für Musik*, “Zur Methodik der Gehörübungen und des Musikdiktats” (Towards a Methodik of Ear Training and Music Dictation), Fritz Reuter—who had taught “music dictation and training of sound-consciousness” at the Leipzig Conservatory—note that Methodik must, at least in part, engage this problem of “recurring types.”

For Reuter, Methodik in any subject, musical or otherwise, was

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42 In a notable series of “psychometric experiments” with two “arithmetic prodigies” designed to “give an objective shape to the difference which separates the visual type from the auditory type” Binet and Charcot’s purported to have shown “the existence of not one type of memory but several partial, special, and local memories, each devoted to a particular domain.” For a commentary on and English translation of the original experiments, see Serge Nicholas, Yannick Gounden and Zachary Levine, “The Memory of Two Great Mental Calculators: Charcot and Binet’s Neglected 1893 Experiments,” *The American Journal of Psychology* 124 (2011): 235-242.

43 Reuter is mentioned as one of eight instructors in “Musikdiktat und Ausbildung des Klangbewußtseins” in the 1924 prospectus of the Leipzig Conservatory. A copy of this report is held in the archive of the *Hochschule für Musik und Theater Felix Mendelssohn Bartholdy* in Leipzig. See Prospekte, Hochschule für Musik und Theater „Felix Mendelssohn Bartholdy“ Leipzig, Bibliothek/Archiv, A, II.3/1.

44 Fritz Reuter, “Zur Methodik der Gehörübungen und des Musikdiktats,” *Neue Zeitschrift*
to be divided into two overarching areas: “the *Methodik* of objects” and “the *Methodik* of subjects.” When it came to ear training and music dictation, Reuter wrote of how the latter, a *Methodik* of subjects, “must describe the aural disposition (*Gehörveranlagung*) of humans and attempt to detect continually recurring types.”45 According to Reuter, it was precisely this aspect of music education—the *Methodik* of subjects—that was least developed, especially in the realm of ear training: “The sciences of the physiology and psychology of sound are not adequately placed in the hand of musicians, and so the findings of these disciplines have, up until now, come to barely any good in the domain of practical art.”46

**Practical Techniques for Classifying Music Students**

Though Reuter was suggesting that music pedagogues had not adequately mined the psychological and physiological sciences in order to develop such a “*Methodik* of subjects,” several music educators had in fact been developing practical techniques for classifying students along such lines for some years prior to the publication of his article. In the remaining section of this chapter, let us briefly consider some of the techniques that were proposed for the purpose of observing and comparing music


46 Ibid., 18: “Die wissenschaftliche Tonphysiologie und Tonpsychologie befindet sich nicht genügend in Händen von Musikern, so daß die Resultate dieser Disziplinen der praktischen Kunst bisher sehr wenig zugute gekommen sind.”
students: the “task book,” Dalcroze’s proposal for the streaming of certain musical types in public schools, Margit Varro’s “musicality examination,” and the “psychotechnical aptitude test” implemented in the orchestral division of Berlin’s Hochschule für Musik in the 1920s.

Emil Breslauer, founding editor of Der Klavier-Lehrer and early pioneer in Methodik at Theodor Kullak’s conservatory in Berlin during the 1870s, discussed the potential utility of the task book (Aufgaben-Buch), a kind of journal that would function to record the various abilities and progress of pupils:

With the attentive usage of the task book it soon becomes clear where the particular weakness of the student are to be located, and through what means the teacher endeavors to overcome these weaknesses, which are sometimes rooted in purely bodily dispositions (weak individual fingers, weak wrists) or in mental aspects (deficiency in rhythmic feeling, in hearing, in musical sensibility, etc.). The task book gives a clear view of the progress of the student; it shows how much time was required for the different exercises and pieces.47

Breslauer, then, sought out practical techniques that would enable music pedagogues to better understand the competencies of their pupils, both synchronically and over time. Interestingly, he also noted that such task books provided a degree of transparency with

regards to the teacher’s own practices, a state of affairs that would especially benefit “musically sensitive” parents of pupils. In other words, the task book also allowed for a kind of observation of a teacher’s pedagogical practice, but at a distance. For Leo, such forms of record keeping could also help aspiring teachers in developing their own self-reflexive practice: “In order to mold seminar pupils [i.e. teachers in training] successfully, it is necessary for them to engage in constant self-monitoring. They must provide regular, precise reports concerning the abilities, progress, and idiosyncrasies of their students, and come up with their own measures.”

While the task book functioned as a decidedly small-scale technique of observing and comparing students, some music educators proposed much more sweeping forms of classification as a means to effectively organize music pedagogy. Dalcroze himself articulated this close-knit connection between classifying and intervening, noting that successful classifications would make possible a more

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48 “If this book gives a beneficial and guiding support to the teacher, it is also not to be underestimated how it also provides a certain benefit to musically sensitive parents. It grants them the surest means of watching over their child’s course of training, and provides them with clear insight into the teaching methods of the chosen teacher.” See Breslauer, “Das Aufgaben-Buch,” 199: “Wenn so der Lehrer durch dies Buch eine fördernde, fruchttragende Unterstützung gewinnt, so ist es auch der Vortheil, der musikverständigen Eltern daraus erwächst, nicht zu unterschätzen. Es gewährt ihnen das sicherste Mittel, über den Ausbildungsgang ihres Kindes zu wachen, es schafft einen klaren Einblick in der Lehrweise und Methode des gewählten Lehrers.”

49 Leo, “Pädagogik als Lehrgegenstand im Musiklehrer-Seminar,” 36-37.

50 I would add here that classifying is itself a form of intervening in the world, though here I am staying true to the divisions presented by my historical actors. To be sure, the line between classification and intervention is productively blurry at the best of times, a dynamic that Ian Hacking has articulated with his concept of “looping”: that is, how classifications affect the persons who are classified, which then transforms future classifications of those persons, which then changes those persons, and so on. See Ian Hacking, *Rewriting the Soul: Multiple Personality and the Sciences of Memory* (Princeton,
effective pedagogy: “the classification of capacities and incapacities once established... the teaching of music could obviously be practiced on a more effectual basis.”\textsuperscript{51} In a striking 1905 essay, “An Essay in the Reform of Music Teaching in Schools,” Dalcroze called for the entire apparatus of music instruction to be reorganized according to his own classifications of musical (or non-musical) types. Tackling these issues with a rigor far outpacing his musical colleagues, he forwarded the possibility of schools adopting a tripartite system of musical classification, comprised of “sense of rhythm, vocal accuracy, and hearing capacity.”\textsuperscript{52} For Dalcroze, distinguishing between these faculties would enable music teachers to group children with similar musical makeups together, thus streamlining each group’s progress. At the end of the first year of training, those with “complete musical incapacity”—supposedly a relatively rare condition that effected “at most five percent” of pupils—could be identified through examination and put in special classes. On top of noting that “by reason of their rarity, they are as easy to recognise and classify as cases of idiocy in general school world, or of criminality in everyday life,”\textsuperscript{53} Dalcroze also snidely remarked that, if such students wanted to continue studying music, they could choose to do so at a conservatory! And after two years of musical training and the teacher’s assessments, another examination would


\textsuperscript{53} Ibid., 38.
enable the following classification:

A) Pupils recognized from the first as possessing all three qualities together with those who at the first examination, showed signs only of two qualities, but have acquired the third in the course of their second year’s training.
(B) Pupils with bad voices, but possessing the other two qualities.
(C) Pupils with undeveloped hearing faculties, but possessing a sense of rhythm and a capacity, thanks to the flexibility of their vocal apparatus, of singing accurately in association with a choir.
(D) Pupils with good ears and voices, but lacking a sense of rhythm.54

Of course, such proposals to place students in streams are hardly unique to music education. Nevertheless, several noticeably more fine-grained approaches to musical classification were forged in the 1920s. In one example, Hungarian piano pedagogue Margit Varró—whose work was well-received in German music-educational circles, not least by Kestenberg—made extensive use of “mental types” (Vorstellungstypen) in her pedagogical practice.55 In her Das lebendige Klavierunterricht: Seiner Methodik und Psychologie (Dynamic Piano Teaching: Its Methodology and Psychology), she dedicated a lengthy section to questions of what she called “the psychological observation of the student” (die psychologischen Beobachtung des Schülers).56 For

54 Ibid., 39.
55 Kestenberg wrote the following of Varró’s book in 1939: “New trails were blazed by Margit Varró, in her Der lebendige Klavierunterricht, in tying up the requirements of instrumental technique with the psychological and pedagogical elements of general music education.” See Kestenberg, “Music Education Goes Its Own Way,” 174.
56 Margit Varró, Der lebendige Klavierunterricht: seine Methodik und Psychologie (Berlin: N. Simrock, 1929), 199-234.
Varró, “accurate knowledge of the mental types of students” would enable teachers to “at once possess the key to their attention, their technique of learning, and their memory.”

Following the pedagogical and psychological literature on this subject that had exploded since Charcot and Binet’s investigations in the 1890s, Varró insisted that, not only did individuals rarely align neatly with one mental type, but that research had still failed to clarify whether such perceptual dispositions were “inborn” or “determined by the effects of early childhood.” Instead, Varró opined, what was needed was a comprehensive account of the relative strengths and weaknesses displayed by students in each category.

In addition to trying to establish the mental types of her students, Varró encouraged music teachers to institute a “musicality examination” (Musikalitätsprüfung) during the first few lessons (she advised that undertaking all of her proposed assessments at one time would be too much for pupils). Such an exam would form the initial basis for what she called “student portraits.”

57 Varró, Der lebendige Klavierunterricht, 216: “Es sei ausdrücklich hervorgehoben: Haben wir einmal genaue Kenntnis von Dom Vorstellungstypus unserer Schüler, so besitzen wir damit gleichzeitig den Schlüssel zu ihrer Aufmerksamkeit, ihrer Lerntechnik und ihrem Gedächtnis.”

58 “Here, there are obviously no pure, unmixed types; the mental type of an individual is always multiple or compound… we do not know if the mental type is inborn or determined by the effects of early childhood.” See Varró, Der lebendige Klavierunterricht, 215: “Reine, ungemischte Typen gibt es natürlich auch hier nicht, der Vorstellungstypus eines Menschen ist stets mehrfach zusammengesetzt… Ob der Vorstellungstypus angeboren oder durch die Einwirkungen der frühesten Kindheit determiniert ist, wissen wir nicht.”

59 In a subsection of Der lebendige Klavierunterricht entitled “three student portraits,” Varró describes in some detail three young students she had in the early 1920s—students that she claimed demonstrated unusually great, and therefore highly illustrative, levels of differentiation in both “ability” and “type”. See Varró, Der lebendige Klavierunterricht, 203-4: “Wir gehen nun an die Illustrieren der vier zu beobachtenden Hauptpunkte:
more general comments concerning a student’s “bodily constitution,” their prior exposure to music and music lessons, their levels and modes of attention, and their levels of ambition, the musicality examination instructed teachers to find answers to the following questions:

1. Is the child able to sing or play something from memory? If yes, what, and how?

2. Are they able to correctly sing back notes within their vocal register played on the piano? If yes, are they also able to sing back tones that lay outside of their vocal register [presumably with octave transposition]?

3. Are they able to sing back small melodic motives correctly?

4. Are they able to repeat small rhythmic motives correctly through tapping or clapping?

5. Is the child able to pick out the sung-back melody on the piano? Does the child notice the mistakes that they make with this?

6. Are they capable of discerning with the ear if two, three, or more notes have been played? If yes, does the child know which notes are higher and which notes are lower?

7. Are they capable of distinguishing between major and minor triads? The tones of the chords should a) be played in sequence, and b) played together.

8. Does the child know the names of notes, the position of the keys, and can


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While Varró’s monograph certainly offers one of the most extensive discussions of how to go about observing music students from psychological perspectives, it is hard to know to what extent her proposals were actually taken up by German music educators. By contrast, it is certain that a so-called “psychotechnical aptitude test” was used in the entrance exams of potential orchestral students at the Berlin *Hochschule für Musik* in the latter half of the 1920s, and that conservatories in both Mainz and Cologne followed suit. Before its implementation, its primary instigator, Arthur Jahn (a

60 See Varró, *Der lebendige Klavierunterricht*, 213-14:

“1. Kann das Kind schon von selbst etwas singen oder spielen; wenn ja, was, und wie?

2. Singt es in seinem Stimmregister angeschlagene Töne richtig nach; wenn ja, auch die außerhalb seines Stimmumfanges liegenden?

3. Singt es kleine melodische Motive richtig nach? …

4. Klopft oder klatscht es kleine rhythmische Motive richtig nach? …

5. Kann das Kind die richtig nachgesungenen oder nachgeklopfte Melodie am Klavier herausuchen; bemerkt es die Fehler, die es dabei macht?

6. Vermag es auditive zu unterscheiden, ob es zwei, drei oder mehr Töne auf animal hört; wenn ja, weiß es, welches die höheren, welches die tieferen Töne sind?

7. Vermag es den Dur- und Molldreiklang in der Grundlage mittels Vergleichens zu unterscheiden? Vorgehen: die Akkordtöne warden a) einzeln, nacheinander, b) zusammen angeschlagen…

8. Kennt das Kind die Tonnamen, die Lage der Tasten, kann es Noten lesen?”

61 Georg Schünemann, then director of the *Hochschule für Musik* in Berlin, noted that “the exam, which has been extended and reconstructed according to our experience, has been taken on in the orchestral schools in Mainz and Cologne.” See Georg Schünemann, “Aus der Hochschularbeit, II: Musikalische Eignungsprüfung,” *Die Musik* 20 (1928), 357: “Die Prüfung, die auf Grund unserer Erfahrung ständig erweitert und ausgebaut wird, haben die
professor of violin and violin pedagogy at the *Hochschule*), had suggested some routes that might be taken in developing this kind of aptitude test for musicians:

The first problem that imposes itself is to ask which characteristics would make up the selection of students. Incomplete as the methods of the aptitude test have been up until now, they cannot remain so. In order to make an impeccable set of characteristics known, musician, doctor, and experimental psychologist must extend themselves. Preliminary work is abundantly available, especially when one takes the examination methods for the ability of student pilots developed during the war, not as an imitation - obviously! - but instead as an example of thoroughness for the prototype.62

Jahn’s proposal for developing such an aptitude test began as just one among many suggestions found in his petition for the establishment of an *Institut für musikpädagogische Forschung* (Institute for Music-Pedagogical Research) at the conservatory. And though the reference to military training may now seem bizarre, not to mention disconcerting, it was precisely through the techniques of military personnel

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62 “Als erstes Problem drängt sich die Frage auf, nach welchen Merkmalen die Auswahl der Schüler zu erfolgen hätte. So unvollkommen, wie die Methode der Tauglichkeitsprüfung bisher ausgebildet war, kann, se nicht bleiben. Musiker, Arzt und Experimentalpsychologe müssen sich hier die Hand reichen, um zu einwandfreien Merkmalen zu gelangen. Vorarbeiten sind reichlich vorhanden, besonders wenn man die im Kriege ausgebildeten Prüfungsmethoden für die Tauglichkeit der Flugschüler nicht zur Nachahmung - selbstverständlich! - sondern als Muster an Gründlichkeit zum Vorbild nimmt.” A draft of this document, “Petition regarding the establishment of an institute for music-pedagogical research” (*Denkschrift betreffend Errichtung eines Institutes für musikpädagogische Forschung*), can be found at the beginning of the archival collections concerning the Musikpädagogische Abteilung/Seminar für Musikerziehung of the *Hochschule für Musik*. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2981. The quote itself is taken from page 4 of this seemingly unpublished petition.
selection developed during the First World War that German psychologists won their first significant victory in having the practical application of their methods approved by the state.\textsuperscript{63}

Georg Schünemann, who oversaw the introduction of this aptitude test as the Hochschule’s director, noted that part of its utility lay in the fact that it was designed to assess students’ \textit{generalizable} musical abilities—that is, separately from their skills on specific instruments (hence its being used in the orchestral department of the conservatory).\textsuperscript{64} As such, it consisted of examining students across six overarching categories: sections 1) general intelligence; 2) general comprehension (acoustic, optical, and motor); 3) comprehension of tones; 4) harmonic comprehension; 5) rhythmic comprehension; 6) melodic comprehension.\textsuperscript{65}

Interestingly, the exam was sometimes used as the basis for reassigning students to a different instrument, if faculty felt that the exam demonstrated that a student was better suited to an instrument other than that with which they had originally applied. So, the exam decided not only whether or not a student would be accepted into the


\textsuperscript{64} Schünemann asked rhetorically: “How, then, should the students—who come along with their violin, or alternatively their harmonica or clarinet—be examined?” See Georg Schünemann, “Aus der Hochschularbeit, II: Musikalische Eignungsprüfung,” \textit{Die Musik} 20 (1928), 356: “Wie sollten nun die Jungens, die mit ihrer Geige, auch wohl mit Mundharmonika oder Klarinette angezogen kamen, geprüft warden?”

\textsuperscript{65} The general categories are listed as follows in Schünemann’s article: 1) \textit{Intelligenz}, 2) \textit{Auffassung}, 3) \textit{Auffassen von Tönen}, 4) \textit{Harmonieauffassung}, 5) \textit{Rhythmische Auffassung}, and 6) \textit{Melodie}. See ibid., 356-67.
conservatory for study, but also the instrument that the student would play, at least during the course of their conservatory career.\textsuperscript{66} Schünemann was also keen to tell his readers that the exam was not intended to function as a means of finding prodigies, but rather to filter out those unsuited to becoming professional musicians.\textsuperscript{67} Furthermore, he noted that the exam’s utility was corroborated by the fact that the students who had performed best in their exam had gone on to achieve the best results further along in their training.\textsuperscript{68}

**Conclusions**

In May 1926, the Hochschule für Musik in Berlin inaugurated its Seminar für Musikerziehung (Seminar for Music Education), forming a separate department within the conservatory’s administration. Only advanced students of the conservatory were allowed to embark on its course of study, for the reasons that an extensive basis of musical skill and knowledge were required, and so that students could dedicate themselves to a decidedly extensive set of classes (for the initial draft of the Seminar’s

\textsuperscript{66} Schünemann, “Aus der Hochschularbeit, II: Musikalische Eignungsprüfung,” 357: “Auch die Fachvertreter aller Instrumente prüfen und raten, ja sie sehen oft mit einem Blick, ob aus diesem einmal ein guter Hornist, aus jenem ein Oboer wird. Auf Grund der Prüfungen erfolgt die Bestimmung der Instrumente und die Aufnahme.”

\textsuperscript{67} Ibid.,” 357: “Unsere Prüfungen wollen aber nicht Wunderkinder suchen, sondern Unberufene der Musik fernhalten.”

\textsuperscript{68} Schünemann wrote that “a number of registers, semesterly exams and inspections prove that the students with the best results in the aptitude test have also attained the best standards in music.” See ibid., “Aus der Hochschularbeit, II: Musikalische Eignungsprüfung,” Die Musik 20 (1928), 356-7: “Eine Reihe von Listen, Semesterprüfungen und Kontrollen beweisen, daß die Schüler mit den besten Ergebnissen in der Eignungsprüfung auch die besten Leistungen in der Musik erreicht haben.”
“instructional plan,” see Figure 2.2). Students were required to take classes in, among others, the following subjects: the history of music education, rhythmic education, Methodik of ear training, Methodik in their chosen instrument, introduction to the practice of music education, psychology, general pedagogy, and experimental pedagogy and psychology.69

While Schünemann and his conservatory colleagues had been occupied with setting up the Seminar for Music Education, Kestenberg, in his capacity as musical advisor to the Prussian ministry for Art, Science, and Education, had succeeded in instituting state exams for music teachers of various ilks. (It was these exams which students of the Seminar für Musikerziehung would prepare for). Music pedagogues in Germany had long desired state-approved exams and certifications, not least because they sought to standardize the kinds of expertise that could allow employment as a music teacher; a series of ten contributions on “Zur Frage der staatlichen Prüfung der Musik-Lehrer und Lehrerinnen” (The Question of State Exams for Music Teachers) were published in Der Klavier-Lehrer in 1901.70

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69 For a straightforward listing of the classes that the Seminar for Music Education offered, see Staatliche Akademische Hochschule für Musik in Berlin zu Charlottenburg: Jahresbericht vom 1. Oktober 1925 bis 30. September 1927 ([publisher unknown], 1927], 36. A copy of this report is held in the archives of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1, D/7.

70 See Der Klavier-Lehrer 24 (1901).
There had long been a push to establish inter-institutional standards concerning the requirements of music teacher examinations, and some conservatories began to examine candidates with common criteria laid out by the *Musikpädagogischer Verband*.

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71 This document can be found in the archival collections concerning the Musikpädagogische Abteilung/Seminar für Musikerziehung of the *Hochschule für Musik*. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2981.
(Music Pedagogy Association) by 1908. In the 1920s, these criteria went far beyond a basic knowledge of music theory and expertise on the student’s chosen instrument; exams included exercises in music dictation, ear training, questions of a historical nature, a trial lesson with a student, questions on pedagogical methods, and more (for a record of exams held for teachers hoping to teach in German high schools, see Figure 2.3).

Figure 2.3.
“Results of the examination in individual subjects”
Excerpt from the candidate list for the examination of music teacher for “higher teaching institutions,” i.e. high schools.

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72 At a minimum, the Stern’sches conservatory in Berlin, the Karlsruhe conservatory, and the Heidelberg conservatory had adopted common standards of examination for music teachers by 1910. Furthermore, a notice in the 1921 yearly report of the Kiel conservatory claimed that the majority of German conservatories abided by the same standards of examination. For the Karlsruhe, Heidelberg, and Kiel references, see Universität der Künste Berlin, Universitätsarchiv, Bestand 1a. For the Stern’sches conservatory reference, see Universität der Künste Berlin, Universitätsarchiv, Bestand 4/17.

73 This document can be found in the archival collections concerning school music
Together, the introduction of the Seminar für Musikerziehung and state exams for music teachers mark the institutional crystallization of a decades-long process in which music education emerged as a specific subject of study within conservatory curricula, and, more broadly as a discipline supported by a broad network of institutions, journals, and associations. As we have seen in this chapter, this growth was accompanied by the continual problematization of the assumptions and methods of music pedagogy, not least the predominance of styles of training centered around performance and music theory described in Chapter 1. Furthermore, we have analyzed how music educators dealt with the problem of individual differences among students, and some of the techniques they developed for observing and classifying these differences.

Looking forward to the final two chapters of this dissertation, perhaps the most crucial development traced in this chapter is music educators’ growing tendency to lean on psychology within their own discourse. Here, the application of psychological techniques and modes of thinking has primarily been limited to what Stern called the “diagnostic” aspect of applied psychology. That is, music educators increasingly drew from psychological categories in their practices of observing and comparing students. In the following two chapters, I analyze the other side of the psychological coin, what I

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74 As discussed in more detail in Chapter 3, Stern divided applied psychology into two overarching areas: “As “Psychognostics” [applied psychology] must provide a scientific basis for practical knowledge of, and judgements upon, human mental acts and qualities; and as “Psychotechnology” it must give assistance in the practical manipulation of human minds.” See William Stern, “Abstracts of Lectures on the Psychology of Testimony and on the Study of Individuality,” *The American Journal of Psychology* 21 (1910): 270.
call the “psychotechnical turn” in music education. That is, rather than assessing how pedagogues sought to examine students’ musicality, we will consider the various ways in which they actively sought to produce that musicality through pedagogical practice. In particular, these chapters will trace how the listening faculties, in addition to the broader psychological categories of perception, attention, and volition, became explicit objects of music-pedagogical transformation in the pedagogies of ear training, music dictation, and rhythmic gymnastics.
Chapter 3
Transductive Pedagogies, Part I:
Ear Training, Music Dictation, and the Psychotechnics of Musical Listening

Why not try to cultivate their aural perception?
—Émile Jaques-Dalcroze, “The Place of Ear Training in Music Education.”

Introduction

In the foreword to his 1899 book, Das Tonbewusstsein: Die Lehre vom musikalischen Hören (Pitch Consciousness: A Textbook of Musical Hearing), Salomon Jadassohn wrote of how his students tended to lack a well-developed musical ear. According to Jadassohn, private students often possessed both “a certain level of technical proficiency” and the ability to “play in time and with reasonable expression,” but they were rarely capable of recognizing intervals through listening alone. By the time this book was first published, Jadassohn had worked as a professor at the Leipzig Conservatory for almost three decades, having studied piano, composition, and music theory there with Ignaz Moscheles, Moritz Hauptmann, and Ernst Friedrich Richter earlier in the 1840s and 1850s. For Jadassohn, many years of experience at the institution had shown him that conservatory students, when it came to their listening

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2 Salomon Jadassohn, Das Tonbewusstsein: Die Lehre vom musikalischen Hören (Leipzig: Breitkopf & Härtel, 1899), iii.
faculties, often fared no better than his private students: “With my students at the conservatory, I also made the frequent observation that their musical hearing was too little developed, or simply not developed at all, and that its necessary improvement had not been attained through the theoretical and practical studies.”

Jadassohn designed his book as a remedy to what he perceived as a widespread lack of listening abilities, although he had undertaken the exercises it contained with his own students for several decades. A prized student of Jadassohn’s and translator of this textbook into English, Le Roy Campbell, stated his hope that the book might help raise awareness for the necessity of training the ear: “I trust that this work will receive the attention, in the musical world, that it merits, for no side of our musical education is slighted as much as is Ear Training.”

Jadassohn’s book was published in the midst of much broader shifts in the pedagogical orientation of German conservatories, shifts in which “the ear” emerged as a central object of musical training. At first, in the late 1870s and early 1880s, music pedagogues discussed musical listening in a few polemical publications, accompanied without fail by calls for pedagogical intervention. These included several articles in Der Klavier-Lehrer—Flodard Geyer’s posthumous “Das musikalische Ohr” (The Musical Ear), Hugo Riemann’s 1882 “Die systematische Ausbildung des musikalischen Gehörs” (The Systematic Education of Musical Listening), and W. Schell’s 1883 “Ueber das

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3 Jadassohn, Das Tonbewusstsein, iii-iv.

musikalische Gehör und seine Ausbildung beim Unterrichte” (On Musical Listening and its Education), in addition to Franz Wüllner’s textbook *Chorübungen der Münchener Musikschule* (Choir Exercises for the Munich Conservatory) which I discuss later in this chapter.5 A few conservatories, such as those at Munich and Frankfurt am Main, began to incorporate ear training and music dictation methods from as early as the 1870s. By the time of the First World War, ear training and music dictation had become staples of German conservatory curricula (the Leipzig Conservatory, notably, lagged behind many other institutions in this regard, only recognizing ear training as an official subject of instruction in the 1910s).6 Fritz Reuter, who became a prominent professor of music theory and ear training at the Leipzig Conservatory in the 1920s, wrote positively of these long-term developments in a 1928 article concerning the Methodik of ear training and music dictation: “That the ear is educable in the vast majority of individuals has been demonstrated by the successes of the past decades. These were and are so great as to enable music pedagogy to depart from sheer intellectualism and to place listening at the foreground of training.”7 Whether it was

5 Flodard Geyer, “Das musikalische Ohr”, *Der Klavier-Lehrer* 2 (1879): 147-48; Dr. Hugo Riemann, “Die systematische Ausbildung des musikalischen Gehörs”, *Der Klavier-Lehrer* 5 (1882): 209-12; Prof. Dr. W. Schell, “Über das musikalische Gehör und seine Ausbildung beim Unterrichte”, *Der Klavier-Lehrer* 6 (1883), 1-3, 13-16, 25-28, 43-44, 56-59; Franz Wüllner, *Chorübungen der Münchener Musikschule* (München: T. Ackermann, 1876). As well as being a music critic, Flodard Geyer was a professor of music theory and composition at the Stern conservatory in Berlin in the 1850s and 1860s; Schell was a professor of music history at the Karlsruhe conservatory in the 1880s and 1890s.

6 The first surviving prospectus of the Leipzig conservatory in which either music dictation (*Musikdiktat*) or ear training (*Gehörbildung*) is mentioned is in 1919. See Prospekte, Hochschule für Musik und Theater „Felix Mendelssohn Bartholdy“ Leipzig, Bibliothek/Archiv, A, II.3/1.

from the retrospective position of Reuter, or the more immediate perspective of Jadassohn, teachers invested in developing and disseminating ear training more or less agreed that the inability to hear musically was not due to a student’s innate talents (or lack thereof). Rather, they claimed that what had been responsible for this state of affairs was a system of educational practices that ignored cultivating the musical ear in the first place.  

In this chapter, I trace the rise of music pedagogies designed to train musical listening in conservatory education. Focusing on the development of ear training and music dictation, I argue that, when taken together, their more or less simultaneous rise in the decades around 1900 indicates the emergence of a new kind of pedagogical power in the field of classical music, one that is best described as “psychotechnical.”

Zeitschrift für Musik 95 (1928), 18: “Daß das Ohr aber überhaupt bei der Mehrzahl der Menschen erziehbar ist, das beweisen die großen Erfolge der letzten Jahrzehnte. Diese waren und sind so enorm, daß die gesamte Musikpädagogik vom Intellektualismus abrücken konnte und das Hören in den Vordergrund der Ausbildung stellt.”

8 In 1939, Leo Kestenberg noted that the growing prestige of ear training pointed toward a broad cultural project of training entire publics to be “active and synthetic,” rather than merely “passively entertained,” listeners: “the realization that music education can change the whole nature of the hearing process is beginning to spread… with the help of exact psychological methods, which may be developed out of observation and experiment among the abnormal as well as the normal, we should be in a position, within a reasonable length of time, to develop the teaching of ear-training to the point where concert-halls will be peopled with active and synthetic rather than merely passively entertained listeners.” See “Music Education Goes Its Own Way,” in Gesammelte Schriften, vol. 2.2: Aufsätze und vermischte Schriften-Texte aus der Prager und Tel Aviver Zeit (1933-1962), ed. Ulrich Mahlert (Freiburg: Rombach Verlag, 2014), 171.

9 Yearly reports from a variety of institutions make it abundantly clear that, even if the chronologies from institution to institution were uneven, a gradual transformation can be located in the decades around the turn of the twentieth century. To give the reader a sense, with ear training and music dictation, the following conservatories began including one or both in their curricula at the very latest in the following years: München, 1876; Hamburg, 1877; Frankfurt am Main, 1884; Cologne, 1885; Karlsruhe, 1887; Mannheim, 1900; Berlin (Stern’sches), 1907; Heidelberg, 1908; Berlin (Hochschule für Musik), 1913; Stuttgart,
For clarity’s sake, the argument of this chapter is not that conservatory pedagogy as a whole took a psychotechnical turn. Historiographically speaking, it is clear that in conservatories, as well as in more private forms of music education, the implementation of these novel pedagogies did not form a pure historical break, with one regime of training simply succeeding another. Indeed, despite the contrarian rhetoric that often accompanied the growth of these music-educational subjects, they never truly threatened the centrality of performing canonical works to classical music training. New practices arose, but they did not replace those that their instigators had reacted against.

Take the example of ear training: however comfortably it seems to sit alongside written forms of music theory instruction in elite music education today, it became a common subject within German conservatory curricula only when certain music teachers began to discuss predominantly written methods of music theory instruction—such as those discussed in Chapter 1—as inadequate for developing students’ aural capacities. It is

1915; Hannover, 1915; Leipzig, 1919. Aside from the Leipzig report, which can be found in the archive of the Hochschule für Musik und Theater “Felix Mendelssohn Bartholdy” Leipzig, all reports can be found in the archive of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/D4, Bestand 1a, and Bestand 4/17.

this dynamic of a *proliferation*, rather than a *succession*, of practices that best describes how distinct (and perhaps even conflicting) forms of musical training came to be taught alongside one another, such as those documented in the photographs of Figure 3.1 (written instruction in music theory) and Figure 3.2 (an exercise from Émile Jaques-Dalcroze’s method of rhythmic gymnastics).

![Figure 3.1. Music Theory Class of Professor Wilhelm Klatte.](image)

*Stern’sches Konservatorium der Musik, late 1920s.*

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12 This photograph is taken from the yearly report of the Stern’sches Konservatorium der Musik. See Stern’sches Konservatorium der Musik: Jahresbericht über das 79. Schuljahr 1928-1929. A copy of this report is held in the archives of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 4/34.
Though we will discuss some specific pedagogical methods in the areas of ear training and music dictation, the purpose of this chapter is not to offer a comprehensive overview of all such methods. Instead, I am more interested in outlining the broader music-pedagogical reorientations discernible in these novel practices of training and examination, and the broader history that made their emergence possible. To ask how training the ear became a major task of conservatory pedagogy in the latter nineteenth and early twentieth centuries, it will first be necessary to look beyond the institution of the conservatory and toward the then ascendant fields of experimental psychology, psychotechnics, and experimental pedagogy. What exactly did this interdisciplinary

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Figure 3.2.
“The whole-note in 4/4.”
Exercise from Émile Jaques-Dalcroze’s rhythmics gymnastics. Early 1910s.

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13 This photograph is contained in a report from the Bildungsanstalt Jaques-Dalcroze, Zweiganstalt Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2633, 105r.
history do to conservatory pedagogy? My argument, in short, is that a group of prominent music pedagogues increasingly took the object of experimental research in psychology—what Kurt Danziger has called “the private individual consciousness”—as their own. More specifically, it was a psychophysical conception of this consciousness, central to the project of experimental psychology in its first decades as an autonomous discipline, that offered music educators a new framework for conceiving of and intervening in musical expertise.

From about the 1870s onwards, and especially (though not exclusively) in their discussions of musical listening, music educators described their efforts as training individuals to “experience” music “consciously.” In the officially sanctioned textbook for ear training of the German Music Pedagogy Association, Die Ausbildung des musikalischen Gehörs: Ein Lehrbuch in drei Teilen für Konservatorien, Musik-Seminare sowie für den Einzelunterricht (The Training of Musical Listening: A Textbook for Music Conservatories, Music Seminars, and Individual Study), Carl Mengewein put it as follows: “To some it might appear strange to have a special

14 Danziger notes that Wilhelm Wundt, the individual frequently credited as the founder of experimental psychology, made several key moves in attempting to establish psychology as a relatively autonomous and scientized discipline. First, he set aside a space at the Leipzig University that enabled ongoing laboratory-based research. Second, by decoupling private individual consciousness (as object of research) from the “investigative practice of introspection” established by philosophers before the latter nineteenth century, Wundt paved the way for the idea that “the “inner” world of private experience could be methodically explored.” To do so, he adopted experimental methods and ways of asking research questions that he had recently learned from physiology. Put differently, Wundt distanced himself from the introspective method of philosophy and earlier forms of psychology, but retained their object of investigation. See Kurt Danziger, Constructing the Subject: Historical Origins of Psychological Research (Cambridge: Cambridge University Press, 1990), especially Chapter 2: “Historical Roots of the Psychological Laboratory.”
textbook for the training of musical listening. Does not every musical impression, without our assistance, take its path through the ear to our sensation? Certainly, but there is a conscious and an unconscious listening.” For Mengewein and a growing number of conservatory professors, every mode of listening was inescapably reliant on the aural apparatus, but to experience music “consciously” required a specific and highly skilled deployment of this apparatus. Speaking at the second National Conference of Music Pedagogy in Berlin in 1904, Mengewein stated that ear training would help elevate individuals from “the vulgar hearing that nature bestows upon every individual who is not deaf” to “listening in the sense of musical art” by enabling them to discern and fully experience rhythms, melodies, harmonies, timbres, dynamic nuances, and the like. Put differently, even those individuals understood to be within the normal range of hearing—that is, not afflicted by deafness—could have vastly different aural experiences of music, and these differences were increasingly chalked up to questions of practice and cultivation rather than innate talent. The disjunction between the “vulgar” hearing of untrained listeners and the “conscious” and “musical” hearing of

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highly practiced listeners was therefore both a problem and an opportunity: if these pedagogies implied a certain recognition of this disjunction, they also functioned as the means, if not to fully eliminate it, at least to narrow it.

But it was not only a particular object—those aspects of consciousness involved in musical listening—that ear training and music dictation had in common; they also shared a specific method of musical training, which invariably required students to translate musical perception from one medium into corresponding action in another (with music dictation, for example, requiring students to write what they hear). For this reason, I call these new styles of training transductive pedagogies. This transductive logic also permeated widespread modes of psychological investigation. For Édouard Claparède (a Swiss neurologist, psychologist, and collaborator of Émile Jaques-Dalcroze), it was necessary when investigating the psychology of children to “arrange things in such a manner that the state of mind experienced may be translated into some external, tangible manifestation which can be objectively recorded.”17 In other words, acts of musical transduction had a dual function: on the one hand, to develop musical listening, and, on the other, to make it possible to observe that listening.

Clearly, then, it was not only an abstract conception of human subjects that music pedagogues took from psychology and its attendant disciplines. Applied psychology and psychotechnics appeared to offer specific techniques for transforming and observing the individual consciousness (we will see below some quite specific instances in which music pedagogues repurposed techniques devised in the fields of

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applied psychology, psychotechnics, and experimental pedagogy for specifically musical ends). Though the historiography of applied psychology has thus far had little to say about music (and vice versa), not least because of its overwhelming focus on the entrenchment of psychological expertise in military contexts and standardized testing, this chapter shows how music education in fact functioned as one of the first domains in which a decidedly psychotechnical apparatus was first elaborated. Reaching its zenith with the rhythmic gymnastics of Émile Jaques-Dalcroze—the subject of the next and final chapter—we can see how attempts to develop students’ musicality intersected with broader efforts to shape the psychophysical consciousness.

**Experimental Psychology and Musical Listening**

In recent years, several scholars have begun to illuminate how musical listening emerged as a significant area of inquiry for experimental psychologists, not least Hermann von Helmholtz, in the latter nineteenth century. Broadly speaking, this can be seen as part of a shift in scientific studies of sound, what Burdette Green and David

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18 In his recent dissertation, Jeremy Blatter observed that “WWI and intelligence tests dominate the historiography of applied psychology.” He goes on to note that this has led to a paucity of scholarly analyses concerning psychotechnics, thus obscuring the “incredibly rich technological discourse that was indigenous to the historical actors under discussion. Evidence of such neglect is the almost complete omission of psychotechnics (or psychotechnology as it was sometimes called) from Anglo-American historiography.” Jeremy Blatter, “The Psychotechnics of Everyday Life: Hugo Münsterberg and the Politics of Applied Psychology,” PhD diss., Harvard University, 2014, 15-16.

Butler have described as a move from the study of acoustics to that of Tonpsychologie—from analyzing the outer world of sonic events to how such events are perceived by human minds. In other words, it was in the latter nineteenth century that the ear, as Benjamin Steege has written, was admitted “as both an instrument and field of observation”—that musical hearing qua function (or set of interrelated functions) emerged as the primary object of scientific research on sound and music. Furthermore, what Helmholtz’s experimental investigations helped produce was a specific discourse of listening, one that positioned it as an unavoidably psychophysical process—that is, a process in which the sensing body necessarily intervenes in the mind’s perception of external events. For Jonathan Crary, the decisive intervention of psychophysics from the mid nineteenth century onwards was precisely that: its foregrounding of “the notion that our perceptual and sensory experience depends less on the nature of an external stimulus than on the composition and functioning of our sensory apparatus.” From the perspective of those interested in the phenomenon of musical listening, this meant that “the ear” came to function as a shorthand for an array of intertwining psychological and physiological processes.

To be sure, this foregrounding of the sensory apparatus in psychological, pedagogical, and musical discourse owes much to the historical origins of experimental

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21 Steege, Helmholtz and the Modern Listener, 44.

psychology as a discipline. As Danziger has written, perhaps no other factor allowed psychology to excise itself from philosophy in the German university system as much as its adoption of experimental methods from physiology.\textsuperscript{23} Indeed, in the last decades of the nineteenth century, the terms “psychophysiology” or “physiological psychology” functioned more or less synonymously with experimental psychology itself. One important consequence of this is that the first psychological laboratories, not least the very first established by Wilhelm Wundt in Leipzig in the late 1870s, focused on research questions concerned with elaborating human sensory functions (a fact that helps explain the otherwise curious fact that Wundt dedicated two thirds of his first textbook on psychology to questions of “the physiology of the nervous system and of research in sensory physiology”).\textsuperscript{24} This broad research program laid the groundwork for aural perception (of which musical listening was considered a privileged type) to become a major object of psychological inquiry, and for experimental investigation to recast musical listening as taking place not at some idealized and immaterial point of cognition, but rather across multiple intertwining functions scattered across the space and time of the body.\textsuperscript{25}

Crucially for our purposes, these modes of thought were not restricted to scientific fields \textit{per se}, but began to permeate the field of classical music quite rapidly.

\textsuperscript{23} See Danziger, \textit{Constructing the Subject}, especially Chapter 2: “Historical Roots of the Psychological Laboratory.”

\textsuperscript{24} Ibid., 27.

\textsuperscript{25} For an in-depth discussion of this in relation to Helmholtz’s research, see Steege, \textit{Helmholtz and the Modern Listener}, especially Chapter 3: “The Problem of Attention.”
In the realm of music theory, for example, Youn Kim has described at length what she called “a transference of music-theoretical focus of the late nineteenth century toward musical hearing” by looking toward the writings of Helmholtz, Carl Stumpf, Hugo Riemann, and Ernst Kurth.\(^{26}\) (Though her choice to call Helmholtz and Stumpf “music theorists” is a curious one, given their professional allegiances lay fully within the experimental sciences, this does not detract from her broader observation concerning the ascent of musical hearing as an object of elite musical discourse.) Furthermore, Steege has shown that Helmholtz himself dedicated significant effort to popularizing his music-focused research endeavors in order to further his liberal, and conspicuously nationalist, agenda of progressive social reform.\(^{27}\) The direction of knowledge exchange did not flow only from psychological to musical domains, however: Alexandra Hui has argued that scientific practitioners’ own engagements with musical culture heavily informed their research agendas on sound, music, and the psychophysics of listening.\(^{28}\)

But perhaps in no other arena of musical life did this shift toward musical listening take on more urgency than in music education. In the broadest terms, conservatory professors increasingly positioned the listening faculties as the most essential foundation for musical study, arguing that the focus on instrumental instruction


\(^{28}\) For Hui, “psychophysical studies of sound sensation were bound up with practitioners’ relationships with music and music culture, both material and immaterial.” See Alexandra Hui, “Changeable Ears: Ernst Mach and Max Planck’s Studies of Accommodation in Hearing,” *Osiris* 28 (2013): 121.
in prevailing forms of conservatory education did little to develop the ear. As a longstanding teacher at the Geneva Conservatory, Dalcroze came to be convinced that conservatory pedagogy overlooked the musical capacities that should in fact be cultivated before learning to perform on an instrument: “once a child can sing correctly, assimilate melodies, analyze chords and melodic successions, distinguish rhythms, phrase infallibly, appreciate forms, produce vocal shadings and accentuations with taste—well, then you may justifiably sit him down before a piano.” The problem was that, as his experience in conservatory classrooms had all too clearly shown, this was rarely the case; even advanced conservatory students often struggled with these apparently simple tasks, despite their virtuosic performances of musical works. Without preparatory training of the “ear, sensibility, and, taste,” students would “derive no real benefit from music lessons—they will become mere parrots or apes instead of musicians and men.” But if students were to undergo a preliminary regime of training targeting a range of more elementary musical capacities, “musicalising” them, a more complete instrumentalist could emerge: “from the first lesson, the fingers will be subservient to musical taste, whereas, under the present system, finger exercises form

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Though he was hardly alone, Dalcroze consistently argued that “the auditive faculties” constituted the foundation of human musicality, and that this had obvious consequences for what music education should emphasize above all else: “The most desirable method of teaching music [is], in our judgment, one which, while enabling the pupil as speedily as possible to appreciate melodies, rhythms, and harmonies, is most efficacious in the development of the auditive faculties on which musical taste and judgement ultimately depend.” Before Dalcroze, music pedagogues began to carve out much clearer distinctions between the ear’s perceptual activities, most often into the following four modalities: 1) perception of tone(s) in terms of high/low, including their harmonic (simultaneous), melodic (consecutive), and contrapuntal combinations; 2) perception of dynamics; 3) perception of timbre; 4) perception of rhythm. As such, a


35 Max Arend wrote of how his “ideal education” would lead to a “complete mastery of pitch, rhythm, dynamics, and timbre.” Max Arend, “Wie wird man musikalisch?”, Der Klavier-Lehrer 16 (1893), 149: “Unter dieser idealen Ausbildung verstehe ich vollkommenes Beherrschen der Tonhöhe, der Tondauer, der Tonstärke, der Tonfarbe.” And Schell put it as follows in Der Klavier-Lehrer: “Das Ohr fasst zunächst auf: den Ton nach Höhe und Tiefe, die Tonfolge nach Intervallenschritten und die melodische Wendung der Tonverbindung rücksichtlich der steigenden und fallenden Bewegung und des Uebergangs von Tonart zu Tonart mit den charakteristischen Tonschlüssen, die kontrapunktische Verbindung zweier oder mehrerer Tonreihen, welche gleichzeitig nebeneinander herlaufen, den Aufbau von Tönen zu Harmonien, ihre Verkettung und ihre Verwandtschaften. Es nimmt ferner wahr die relative Dauer und Accentuation der Töne, die Ordnung in der regelmässigen Folge der Accents oder dem Takt, die feineren Unterschiede in der Betonung, welche sich als pathetische und oratorische Accents aussprechen, die Intensität der continuitischen Tongebung, welche sich durch die an der einzelnen Stelle herrschende Tonstärke und den besonderen musikalischen Ausdruck kund gibt, kurz alles was der Rhythmik und Dynamik im weitesten Sinne angehört. Endlich fallen ins Ohr die
whole host of previously peripheral phenomena, such as the perception and production of rhythmic and dynamic events, came to be discussed as distinct musical capacities, that, in turn, required new and appropriate methods of training.

**Psychotechnics**

From the perspective of a pedagogical music history, perhaps the most decisive intervention made by Helmholtz involved his investigations concerning the roles of practice, cultivation, and training in shaping the experience of listening. Indeed, as Steege has argued, this attention to the *malleability* of the ear constituted a crucial aspect of Helmholtz’s discourse on hearing, one all too often overlooked by subsequent scholars seeking to paint Helmholtz’s understanding of musical listening as essentially mechanistic. Far from conceiving of musical listening as a purely mechanical function, Helmholtz positioned changeable factors such as attention and enculturation as central to both what and how individuals heard. Furthermore, Hui has discussed how Ernst Mach, a key disseminator of Helmholtz’s ideas to the German musical public in the latter nineteenth century, took on similar problematics in his work on the phenomenon of “accommodation” in hearing. According to Hui, Mach’s investigations

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36 Dalcroze would ultimately turn out to be the most visible figure in isolating rhythm as a special area of training, but he was far from the first.

37 For Steege, Helmholtz “would renew empiricism’s emphasis on the silent operation of habit in perception, reflecting a particular sensitivity to the overlooked significance of the “everyday”.” See Steege, *Helmholtz and the Modern Listener*, 74.
into hearing led him “to believe that the sensation of sound was not just psycho-
physical, and certainly not just a physiological mechanism, but also cultivated and
cultured. Hearing itself was historical.”

Perhaps unsurprisingly, then, it was precisely the possibility that musical hearing was subject to change that seemed to open up new vistas of pedagogical possibility. As one author wrote in an 1898 Der Klavier-Lehrer article, “Das Musik-Diktat und seine Bedeutung für den Musik-Unterricht” (Music Dictation and its Significance for Music Instruction): “as with all human sense organs, the organ of hearing can be developed and sharpened through practice.”

This possibility of training “the organ of hearing” raised a much broader, and certainly not only musical, question: how could psychological knowledge be rendered technical, that is, useful to interventions in the world outside of the laboratory? In the first decades of the twentieth century, psychotechnics emerged as the discipline that sought to answer this question, most prominently in Germany and the United States. While some of the earliest figures in the development of psychotechnics defined the term somewhat differently, I use psychotechnics here in Hugo Münsterberg’s rather broad sense: “the science of the practical application of psychology in the service of cultural tasks.”

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40 Hugo Münsterberg, Grundzüge der Psychotechnik (Leipzig: Barth, 1914), 1: “Die Psychotechnik ist die Wissenschaft von der praktischen Anwendung der Psychologie im Dienste der Kulturaufgaben.”
from psychological know-how in the development of their own practices, it is useful, for clarity’s sake, to first consider the background and orientations of psychotechnics more broadly.

For Münsterberg, psychotechnics formed the future-oriented, interventionist side of applied psychology, with the other side—“cultural psychology”—functioning so as to explain given cultural phenomena of the present or past. Münsterberg clarified further his vision for the role of psychotechnics:

In short, it is clear that in manifold areas certain endgoals can, either entirely or partially, be reached through psychical processes, and it is the task of psychotechnics to elucidate which mental processes come into question and which influences are necessary in order to reach the desired end result. A science that imparts such knowledge relates to psychology exactly as engineering relates to physics, or as agricultural science relates to botany.

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43 Ibid., 6-7: “Kurz, in den mannigfaltigsten Gebieten zeigt sich, daß gewisse Endziele ganz oder teilweise durch psychische Vorgänge erreicht werden können, und es ist die Aufgabe der Psychotechnik, darzulegen, welche geistigen Prozesse dabei in Frage kommen und welche Einflüsse notwendig sind, im das gewünschte Endergebnis zu erreichen. Eine Wissenschaft, welche solche Kenntnis vermittelt, verhält sich zur Psychologie genau, wie sich die Ingenieurwissenschaft zur Physik, oder die Agrikulturwissenschaft zur Botanik verhält.”
Clearly, this was about as purely an instrumental view of psychology as there could be. As James Lamiell has argued in his study of William Stern, who actually first coined the term *Psychotechnik*, Münsterberg’s discussions broadened the scope of psychotechnics well beyond Stern’s initial formulation.\(^{44}\) Like Münsterberg, Stern suggested that psychotechnics formed one of two areas of applied psychology: “As “Psychognostics” [applied psychology] must provide a scientific basis for practical knowledge of, and judgements upon, human mental acts and qualities; and as “Psychotechnology” it must give assistance in the practical manipulation of human minds.”\(^{45}\) Put differently, applied psychology should, on the one hand, be able to analyze and describe the differences that existed synchronically *between* individuals (its *diagnostic* aspect). And, on the other, it should be able to produce differences *within* a single individual over time (its *technical* aspect).

In short, then, psychotechnics was all about human difference. (In this light, it is surely far from mere coincidence that Stern, long considered the founder of “differential psychology,” first coined the term.) As Stern, Münsterberg, and others noted, the major barrier to the emergence of psychotechnics, and applied psychology as a whole, had been “the long disregarded for individual differences in experimental psychology.”


frequent refrain in Münsterberg’s published writings on the topics of psychotechnics and applied psychology was his sweeping historical account of why the first decades of psychological research had invariably ignored questions around individual differences:

When psychology emancipated itself from philosophy, the fundamental aim was to study the mental facts in the same way in which the naturalist studies the physical facts. The general emphasis, therefore, was laid on the search for general laws. The mental curiosities and surprising happenings in individual cases had too long held the interest of the psychologists of previous times. The new psychology was to get rid of this anecdotal kind of unscientific observation. The result was an instinctive suppression of all the facts which characterize the individual differences of man and an overemphasis on the common laws of mind.46

Münsterberg, for his part, acknowledged that this concentration on uncovering generalizable laws of the mind was a necessary phase in the growth of psychology as an empirically-oriented discipline, one independent from philosophy (within which it had long been subsumed in German university structures). But, as Münsterberg wrote, “mental life without individual difference was an abstraction”, and this tendency toward abstraction was deemed to have stalled the development of psychology’s practical efficacy outside of the laboratory.47 Indeed, with reference to a variety of prominent professions, Münsterberg argued that it was precisely within a field of differentiated


47 Münsterberg, Grundzüge der Psychotechnik, 25: “Das Seelenleben ohne individuelle Verschiedenheit war eine Abstraktion, die sich gar zu weit von der Wirklichkeit entfernte. Für die Entwicklung der theoretischen Psychologie war diese Fiktion notwendig, aber sie ist gänzlich ungeeignet für die praktische Arbeit.”
individuals that psychology could locate its social import and power: “the physician, the lawyer, the educator, the minster or the businessman who neglects the individual differences of patients, witnesses, pupils, parishioners, or customers, loses his chief opportunity to touch the levers of the mind.”

Psychotechnics, then, was not really thinkable until the question of individual differences emerged as a central problematic within psychological research.

Because he understood mental processes as necessarily taking part in every cultural endeavor, Münsterberg opined that psychotechnics could usefully intervene in an almost endless list of human activities: education, law, commerce, industry, advertising, medicine, music, you name it. But despite this hugely expansive vision of the purview of pyschotechnics, Münsterberg cautioned that the route from theory to practical application would not be so straightforward: psychological research itself must be adjusted to particular practical problems faced by practitioners in their respective professions. More specifically, psychology would be most fruitfully applied not by separating psychological categories themselves, but rather their domains of application (law, medicine, education, etc.). In other words, there should not be separate areas of inquiry dealing with a psychotechnics of perception, a psychotechnics of memory, a psychotechnics of attention, a psychotechnics of volition, etc., but rather a psychotechnics of each practical area of application. Of course, this meant that most, if not all, psychological categories were potentially applicable to all areas of society.

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49 Ibid., 366: “We shall not separate memory, attention and so on, but law, medicine, education, commerce industry, art, science, social reform, and to each of these parts the
For our purposes, it is crucial to recognize that it was in the fields of education and child psychology that the kind of practically-oriented research programs advocated by Münsterberg first took hold. Münsterberg was well aware of this fact, going so far as to claim that “pedagogical psychology has really been developed in the last decade into a well-consolidated psychotechnical science with an abundance of suggestive material and significant advice.”\(^{50}\) Indeed, three lengthy published works from the years around 1910 that attempted to synthesize extant experimental educational work—Münsterberg’s own *Psychology and the Teacher* (1911), Claparède’s *Experimental Pedagogy and the Psychology of the Child* (published originally in French in 1909 as *Psychologie de l’enfant et pédagogie expérimentale*), and Ernst Meumann’s *The Psychology of Learning: An Experimental Investigation of the Economy and Technique of Memory* (published originally in German in 1908 as *Ökonomie und Technik des Gedächtnisses: Experimentelle Untersuchungen über das Merken und Behalten*)—demonstrate just how extensive research in the areas of educational and child psychology had become in the preceding decades.\(^{51}\) As Eckhardt Fuchs has written, it was precisely in the decades around 1900 that educational research took on decidedly psychological and experimental characteristics, and that “experimental pedagogy and greatest variety of mental functions will be made contributory.”

\(^{50}\) Ibid., 367.

pedagogical psychology became the main fields of child research.”52 The distinguishing feature of these research fields was their heavily empirical leanings, with Fuchs going so far as to describe the movement as a form of “scientific study that saw the child as pure object of investigation.”53 For his part, Münsterberg noted that there existed clear reasons as to why educational and child psychology had dominated the earliest iterations of psychotechnical research and practice:

For a long while this chapter monopolized the name of applied psychology, and certainly in recent years the greatest amount of specialistic work has been done in this field. It is not surprising that this is the case. The boys and girls of the classroom offer material for study which is always at the disposal of the observer. Whoever wants to make experiments on witnesses or workingmen or artists or patients has to fight with numberless practical difficulties, but the school-children are always ready and glad when the instruction is interrupted by experiments in the service of science. Above all, the school teachers themselves stand so much nearer to psychology than the judges or physicians or manufacturers. They have been in touch with psychology throughout their vocational life, and they fell the need of an understanding of mental conditions more immediately.54

52 Eckhardt Fuchs, “Nature and Bildung in Nineteenth-Century Germany,” in The Moral Authority of Nature, eds. Lorraine Daston and Fernando Vidal (Chicago, IL: Chicago University Press, 2004), 164. Though Fuchs’ locates the beginnings of “the scientization of pedagogy” in the mid nineteenth century, when medical scientists became involved in debates around overfatigue and school hygiene, it was really from the 1880s that the methods and objects of experimental psychology were taken up within educational research. For further reading on this subject, see Walter Herzog, “Psychologische Wissenschaft und pädagogische Reform: Die experimentelle Psychologie als Basis einer neuen Pädagogik?” in Jürgen Oelkers and Fritz Osterwalder, eds., Die neue Erziehung. Beiträge zur Internationalität der Rejormpädagogik (Frankfurt am Main: Peter Lang, 1999), 265–303.


Two things are of special note here: first, Münsterberg’s assertion that, practically speaking, children in the classroom offered abundant “material for study” (we saw in the last chapter how such a notion of the conservatory classroom as a kind of pedagogical laboratory crept into music educators’ own discourse, especially in reference to the *Elementarklasse*). And second, Münsterberg’s acknowledgement of a kind of natural cross-over of interests and concerns between psychology and pedagogy. What field would benefit more from knowledge of the human mind and techniques for developing it than education?

Given the especially fertile linkages that arose between experimental psychology, psychotechnics, investigations of musical listening, and education in the decades around 1900, it is perhaps little surprise that music pedagogues seemed unable to resist what sociologist Nikolas Rose has called the “generosity” of psychological expertise.\(^5\) For one thing, we have already seen in this chapter that the preoccupation with musical listening in music education was made possible—or at the very least given a great deal more urgency—with the emergence of aural perception as an object of research within experimental psychology. Further, there is no mistaking the fact that broader psychological vocabularies increasingly penetrated music-pedagogical discourse in this period, with the stated aims of music educators increasingly being

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\(^5\) Rose’s idea of “generosity” arises in his shifting of analytical focus “from psychology itself to the modes in which psychological knowledges and techniques have grafted themselves onto other practices,” a perspective that this chapter clearly follows. See Nikolas Rose, ‘Engineering the Human Soul: Analyzing Psychological Expertise’, *Science in Context* 5/ii (1992): 351-69.
shaped by concepts such as perception, apprehension, attention, memory, and volition.

In this way, music pedagogues did not seem to pay much heed to Münsterberg’s rare word of caution concerning the social role of psychotechnics—that psychologists should not seek to determine the ends, but only the means of a given cultural task.\footnote{Münsterberg, \textit{Psychology: General and Applied}, 350: “The practical psychologist ought never to forget that his psychological understanding can give him insight only into the means needed for a certain end, but cannot select the ends themselves.”} Recognizing how psychological disciplines have tended to “graft” its styles of thought onto other fields, Rose has explained that “psychology does not simply ally itself with authorities in private domains by promising to solve their problems. In ‘applying itself’ to such problems it transforms their terms.”\footnote{Nikolas Rose, \textit{Inventing Our Selves: Psychology, Power, and Personhood} (Cambridge: Cambridge University Press, 1996), 94.} Indeed, by reframing their attempts to cultivate musical aptitude through concepts such as perception, attention, and, in Dalcroze’s case, the regulation of the entire psychophysical apparatus, music pedagogues staked a claim to the broader cultural significance of their work.\footnote{This is, of course, reminiscent of the historically more recent affair concerning the so-called “Mozart effect,” sparked by a \textit{Nature} article claiming that human subjects’ spatial reasoning was temporarily improved after listening to Mozart’s Sonata for Two Pianos in D major, K. 448. See Frances H. Rauscher, Gordon L. Shaw, and Catherine N. Ky, “Music and spatial task performance,” \textit{Nature} 365 (1993): 611.} Further, by describing their own activities through terms laid out for them by psychological research, they were also aligning themselves with the authority of scientific experimentation and knowledge. And quite successfully too: the discourse surrounding the Prussian music-educational reforms of the implemented during the Weimar Republic was clearly informed by psychological know-how, not least in its inclusion of ear.
training as a required subject of instruction.\textsuperscript{59}

If the broader field of education served as the most significant social arena in which psychologists and educators alike first elaborated psychotechnical research and techniques, the more delimited field of music education, then, was no exception. After all, what is ear training if not a kind of psychotechnics of listening? To be sure, this was less a matter of music education being caught up in a kind of psychological \textit{Zeitgeist}, and more a matter of how certain ways of both thinking about and acting upon musical experience were forged at the boundaries of psychology and music education. In its more analytical vein, psychotechnics appeared to offer music educators concrete methods of inquiring into the question of “How do individuals hear music?”. But more importantly in the context of this chapter, psychotechnics laid out techniques through which that listening might be trained. Psychotechnics, in other words, promised the ability to move the question “How \textit{should} individuals experience music?” from subjunctive fantasy into reality.

\textbf{Ear Training and Music Dictation}

It was Franz Wüllner, a choral instructor at the Munich Conservatory, who introduced

\textsuperscript{59} In his draft for the guidelines concerning the overhaul of musical instruction in the \textit{Volksschulen} (elementary schools), Leo Kestenberg noted in the “methodological remarks” that “at all levels it is necessary to cultivate the comprehension and recognition of musical melodies. The children then become practiced in \textit{consciously} receiving musical impressions from their environment.” In the archives of today’s University of the Arts in Berlin, a draft of this document is held along with a request from Kestenberg to Georg Schünemann (then director of the \textit{Hochschule für Musik}) to look over the draft. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2595 (Schulmusikunterricht): “Auf allen Stufen ist das Auffassen und Erkennen musikalischer Tonfolgen zu pflegen. Die Kinder sind daran zu gewöhnen, musikalischer Eindrücke aus ihrer Umwelt \textit{bewußt} aufzunehmen.”
the first significant set of ear training practices into German conservatory curricula in the 1870s. Initially taking the form of choir exercises in his Munich Conservatory classes, Wüllner’s exercises were designed to teach students to sing directly from music notation. In Wüllner’s terminology, his exercises offered a kind of “practical” study of harmony and rhythm, one that would “enable [students] to think musically: to conceive of progressions, rhythms, intervals, chords, etc. without the aid of an instrument.” In other words, students would have to dedicate themselves to developing what was deemed to be the ultimate instrument of musical perception and action: themselves.

Wüllner was careful to clarify how his objectives differed from then prevalent styles of choral pedagogy found in public schools, which he derided as being “limited mostly to a mechanical learning of notation… in order to then culminate in the memorization of a number of actual or so-called folk melodies.” Claiming that his methods had demonstrably helped even “the least capable of our students” to follow the “initial, somewhat difficult expositions into melody, sequences of notes, rhythm, meter, etc.,” Wüllner put this success down to the fact that his students had come to understand the musical material through repeated, practical examples. In a similar manner to Kestenberg’s general observations on “the new music education,” the objective was clear: musicians must learn to “experience” (durchleben) tonal and rhythmic events.

60 Franz Wüllner, Chorübungen der Münchener Musikschule (München: T. Ackermann, 1876), 1: “[der Unterricht in Chorgesang] sollte erhalten, auch eine Art praktischen Harmonieunterrichtes bieten; er sollte die Schüler befähigen, musikalisch zu denken, d. h. sich melodische Fortschreibungen, Rhythmen, Intervalle, Akkorde u. s. w. Ohne Beihülfe eines Instrumentes vorzustellen.”

61 Wüllner, Chorübungen der Münchener Musikschule, 7: “Es kommt nur darauf an, dieselben immer wieder praktisch an den gegebenen Beispielen klar zu machen”.

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For Wüllner, as for several other of his colleagues, pedagogies aimed at developing the musical ear were especially necessary in the realm of rhythm, not least because the predominance of *Harmonielehre* in music theory pedagogy, both inside and outside conservatories, had led to a generalized eschewing of rhythmic education. Indeed, Wüllner considered the most singular contribution of his method to be its “simultaneous development of rhythmic and tonal elements.” He clarified further why he deemed this to be necessary:

The education of rhythmic elements is perhaps of even greater importance than that of tonal elements. So many people learn to differentiate a third from a fourth faster and more easily than to energetically repeat an energetic rhythm. I always have higher hopes for those with a good rhythmic sense and poor hearing than for those with a better ear and poor rhythmic feeling. The teacher should, therefore, pay special attention to the thorough formation of rhythm.

Especially in its earliest sections, Wüllner’s method contains many rhythmic reading exercises that required students to say the names of the notes in a specific rhythm, rather than actually sing the notes (see, for example, Figure 3.3). By the 1880s, the notion of ear training’s importance to developing pupil’s

\[\text{rhythmishe Leseübungen}\]

Ibid., 5.

rhythmic capacities was already being taken up by other conservatories. The Hoch’sches Conservatorium in Frankfurt am Main, for example, reported in 1887 that students in its Seminarschule—“musically capable” children of 8-12 years—“take part in a weekly Chorsolfeggio stunde” “for the development of musical hearing and rhythmic feeling.” In the next chapter, we will see how rhythmic education would take on new significance in the first decades of the twentieth century, in no small part due to the reception of Dalcroze’s rhythmic gymnastics in German music-educational circles. But for now, it suffices to note that, with Wüllner’s Chorübungen, a new concern for developing students’ elemental capacities in musical perception and production began to leave its mark on the pedagogical practices employed in German conservatories.

64 See Neunter Jahresbericht des Dr. Hoch’schen Conservatoriums zu Frankfurt am Main (Frankfurt a. M.: Adelman, 1887), 12: “Zur Entwicklung des musikalischen Gehörs und des rhythmischen Gefühls erhalten die Kinder wöchentlich eine Chorsolfeggiostunde. Aufgenommen werden in der Seminarschule nur musikalisch gut beanlagte Kinder, die nicht unter 8 und nicht über 12 Jahre alt sind.” A copy of this report is held in the archives of today’s Universität der Künste in Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1a/27.
Wüllner’s pedagogy shared many of the goals and rhetoric found in later iterations of “ear training.” His singing exercises, like the various ear training methods which emerged in the decades following his activities in Munich, were designed to methodically develop a student’s capacity to perceive and respond to unfamiliar musical stimuli as accurately and flexibly as possible. Though these practices would come to embrace things other than the voice as the central medium of expression and response (such as writing and bodily movement), we can already see with Wüllner the seeds of a pedagogy designed specifically to cultivate accuracy and flexibility in the perception and production of musical sound. Here, ear training was postulated as a means to shift

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65 This excerpt is taken from the 8th edition (1885) of Wüllner’s treatise, published only nine years after initial publication in 1876, a fact that suggests a more or less immediate and widespread popularity for Wüllner’s method. See Franz Wüllner, Chorübungen der Münchener Musikschule (8th edition) (München: T. Ackermann, 1885), 26.
music-pedagogical objectives away from the understanding of musical works, and
toward the training of the pupil’s physiological and psychological processes. In his 1911
Übungsschule für musikalische Gehörbildung (Exercises for Musical Ear Training),
Alois Gusinde made this contrast between the goals of ear training and earlier forms of
theory instruction quite explicit:

The aims of ear training require further forms of instruction than those used in the study of form, harmony, and general music (Formen-, Harmonie- und Musiklehre). The independent tasks of these pedagogical disciplines remain in place, for instruction in ear training does not strive for a proficiency in the production and analysis of pieces of music, in harmonic and instrumental compositions, or in the handling of their corresponding rules. Instead, it confines itself solely to the conscious comprehension of the presented material through the medium of the ear.66

Indeed, such approaches to ear training suggest a broader re-orientation in music theory instruction: a move away from training students’ abilities to analyze extant musical works through regimes of written work, and toward the development of “the ear.”

Like Gusinde, Wüllner understood that his exercises offered a novel kind of training in music theory, insisting that choral training should form “one of the

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obligatory subjects, alongside the study of harmony, that contributes to the all-round musical education of the student.” Though forwarded as a form of choral pedagogy, Wüllner’s methods serve as a useful marker for delineating a clear transformation in the understanding of what was taken to be “practical” work in the realm of music theory. As we saw in Chapter 1, perhaps the most influential music theory pedagogue at Leipzig, Ernst Friedrich Richter, regarded extensive regimes of written work as “practical.” Richter’s perspective on what constituted “practical” training in music theory seems to have been based more on what his textbooks avoided: namely, the more speculative arenas of music-theoretical discourse. Under Richter’s direction, students learned the “how,” not the “why,” of the “musical laws” undergirding the compositional principles of art music. But Wüllner, as well as many pedagogues who followed him, deemed written methods of theory pedagogy as inadequate to the task of “practical” instruction, because they did not engage students’ aural capacities, let alone systematically develop them. Ernst Paul, a professor at the Dresden Conservatory, put it pithily: “the written solution of tasks is not adequate for a successful comprehension of harmonic principles.” And Max Arend, in an 1893 article in the Der Klavier-Lehrer, “Wie wird man musikalisch?” (How does one become musical?), put it in rather extreme terms: “All theory for the eye is dead, is nothing, if it isn’t used as a vehicle for the ear.”

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67 Wüllner, Chorübungen der Münchener Musikschule, 1: “Der Chorgesang sollte vielmehr als eines der obligatorischen Fächer gleich der Harmonielehre zur allseitigen musikalischen Ausbildung des Schülers beitragen.”


69 See Max Arend, “Wie wird man musikalisch?”, Der Klavier-Lehrer 16 (1893), 150:
To be sure, this de-emphasizing of written forms of music theory instruction can be tied to wider shifts in pedagogical discourse occurring at the time. In short, educational reformers placed less value on the sheer transmission of knowledge, and much more on the development of capacities or dispositions. Münsterberg, for example, wrote that “mere knowledge, that is, mere information without ability to make use of it, cannot be the goal of education. But the developing of the abilities does not refer only to external acts like reading and writing, but just as much to intellectual activities like attending, thinking, calculating.”70 Indeed, it was in this sense that the specific term for “education” that came to dominate pedagogical discourse in this period—Erziehung as opposed to Bildung or Ausbildung—laid special claim to a new kind of pedagogical philosophy. In relation to Dalcroze’s own pedagogy, Karl Storck critiqued earlier forms of musical training as being dominated by “intellectualism,” by a kind of “abstract education of the mind, which is never actually an education, but rather a filling up with knowledge.”71 And Dalcroze himself summarized the problem with specific reference to methods of music theory pedagogy: “musical theory is too often the study of the signs of music, instead of being the experience and analysis of music itself. It ought to be a

70 See Münsterberg, Psychology: General and Applied, 376. Meumann also wrote of how memory is less about “the storing of ideas”, but rather much more a matter of forming enduring dispositions. See Meumann, The Psychology of Learning, especially 27-28.

71 See Karl Stock, E. Jaques-Dalcroze: Seine Stellung und Aufgabe in Unserer Zeit (Stuttgart: Greiner & Pféiffer, 1912), 51: “Und immer mehr hat sich jener Intellektualismus herausgebildet, der eine ganz abstrakte Erziehung des Geistes ist, ja eigentlich noch nicht einmal eine Erziehung, sondern eine Anfüllung mit Wissen.”
consequence, not an end in itself.”  
Put differently, a knowledge of what the intervals of the major third and perfect fifth looked like on the page was distinct from the capacity to actually hear those intervals—and it was the latter on which the music pedagogues under consideration here placed the most importance. To be musical, here, meant possessing the capacity to experience sounded music in a certain way.

But not all writing practices were deemed useless in training the ear. On the contrary, music dictation quickly emerged as one of the central pedagogies of musical listening in the 1880s. As Hugo Riemann put it in 1882, music dictation could play an “outsized role” in “the systematic training of musical listening, through the writing down of melodies played or sung.”  
The perceived value of music dictation, as opposed to earlier forms of music theory instruction, lay in the particular way it deployed musical writing in transductive, rather than merely reproductive, acts. In other words, instead of asking students to reproduce information already learned through notation, music dictation required them to move smoothly between media (in this case, from aural impression to written expression). Max Battke, a teacher at various conservatories in Berlin, wrote in a 1900 Der Klavier-Lehrer article “Musikdiktat und Primavistasingen” (Music Dictation and Sight Singing) that “in work where one performs mechanically and without thought, one will never attain independence”; conversely, practices such as sight-singing and music dictation would enable “the student to think in tones.”  

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continued: “And so, the music student must learn to dictate the given tone as a note (music dictation) and, inversely, to translate the given notes into tones (sight-singing).”

So, by requiring students to smoothly translate between two or more musical media—such as tones and their written notation, and vice versa—pedagogies of music dictation and ear training engendered a supposedly “conscious” and conceptual knowledge. Consider, for example, Paul’s diagram of the act of sight-reading, taken from his 1903 article, “Empfindung, Vorstellung und Gedächtnis. Abhandlung aus dem Gebiete der pädagogischen Tonpsychologie” (Sensation, Conception, and Memory: an Essay from the Field of Pedagogical Sound-Psychology):

“"In einer Arbeit, die man gedankenlos und mechanisch verrichtet, wird man nie Selbstständigkeit erlangen… Damit der Schüler nun das Denken in Tönen erlernt, ist es nöthig, ihm von den aufzufassenden drei Begriffe zunächst nur zwei zu geben, nämlich die Klangvorstellung und das Zeichen derselben, die Note.”

75 Battke, “Musikdiktat und Primavistasingen,” 245: “Genau so muss der Musikschüler den gehört Ton als Note aufschreiben (Musikdiktat) und umgekehrt gegebene Noten in Töne umsetzen lernen (Primavistasingen).”
Ernst Paul’s Diagram of the Psychophysical Processes Involved in Sightreading at the Piano.  


I thank my Dad for taking the time to produce an English translation of Paul’s diagram.
This diagram attempts to visualize an act of musical transduction, the various processes required of a musician’s body and mind to transform the visual perception of a note (Notenbild) into striking that note’s corresponding key on the piano (Tastenanschlag). In an article entitled Paul describes these processes as follows:

Let us bring to mind the work of a piano player’s nervous system: from the optical apprehension of the note standing in front of him, to the centripetal transmission of this stimulus, to the making-conscious (Bewusstwerden) of the visual sensation, to the initiation of a voluntary impulse, to this impulse’s continuation along the motor [“centrifugal”] pathway, to the preparation and performance of the keystroke—for this he requires altogether around 0.2 seconds.78

We can see here how Paul sought to scrutinize these processes of musical perception and action through a purely psychophysiological framework. In this particular case, he drew explicitly from Helmholtz’s experiments on reaction time (what was also known as “physiological time”), which were undertaken first on deceased frogs, and later on living humans.79 Far from being a marginal statement, this vision of the human being as a kind of converter of stimuli into action lay at the basis of transductive pedagogies as a whole. (In this sense, these kinds of musical training abided by what Münsterberg called


“the most important truth which modern psychology can furnish the teacher”: “the pupil is a reaction apparatus.” From this perspective, sight-reading and music dictation were viewed as embodying the same essential processes, but running in inverse directions. When executed successfully, both were seen as necessarily passing through a “consciousness” that could “understand” what it perceived, a consciousness that could transduce attentive perception into a volitional and “correct” musical action. Indeed, if we follow the arrows in reverse order through Paul’s diagram—from sounding a tone on the piano through to the image of that tone in notation—we can see how these historical actors considered music dictation and sight-reading as mirrored performances of the same underlying psychophysiological apparatus.

At the very least, pedagogical practices such as music dictation and sight-reading held important similarities with certain forms of psychological experimentation (in this case, “reaction time” experiments). But the similarity extends in a deeper sense, especially with music dictation. Here, I mean that music dictation can be read as a kind of transposition of one of the most basic modes of psychological investigation: a stimulus is presented to a “subject,” after which that subject is required to articulate their experience of that stimulus. In other words, music dictation functioned as a kind of *testimony* of hearing, offering a kind of “proof” that one had apprehended the musical material correctly (or not) through the ear. As Reuter put it in *Das musikalische Hören auf psychologischer Grundlage* (Musical Hearing on the Basis of Psychology): “Music dictation is the scrutiny of hearing; it is its objectification… Through music dictation we

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80 Münsterberg, *Psychology and the Teacher*, 125.
can, up to a point, ascertain if and to what extent the hearing has become conscious.”

In other words, psychophysiological operations that moved between distinct media were seen as not only helping to form conscious understanding of musical impressions—they were also key practices for examining the capacity for understanding itself.

Speaking of practices that sought to examine how persons experienced and recalled external stimuli, Stern had begun his investigations into the psychology of testimony (der Psychologie der Aussage) in 1901, which involved having students verbally reproduce “items of remembrance referring to a particular experience or event in the past.” One method involved showing students a photograph, after which the stimulus would be taken away and students would be required, at different temporal intervals, to answer questions about that photograph (for an example of an image used by Stern in these experiments, see Figure 3.6). “The crucial outcome” of these experiments, according to Stern, was that “a perfectly correct remembrance is not the rule but the exception.” And in the realm of experimental pedagogy, Meumann acknowledged that a similar dynamic of questioning was used in order to investigate students’ memorial abilities for what he called “immediate retention”: “In experimental investigations, immediate retention is usually tested by pronouncing letters, syllables, or

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81 Reuter, *Das musikalische Hören auf psychologischer Grundlage*, 69: “Das Musikdiktat ist die Kontrolle des Hörens; es ist seine Objektivierung… Wir können durch das Musikdiktat bis zu einem Grad feststellen, ob und wieweit das Hören bewusst geworden ist.”


words, and having the observer speak or write them without delay.” Similarly, music dictation was understood as a pedagogical tool that revealed a student’s capacity for apprehending a delimited set of musical events, what Stern might have called their “memorial fidelity” (Erinnerungstreue).  

![Figure 3.6. Photograph used in William Stern’s experiments concerning the “Psychology of Testimony.”](image)


85 As the title to his book indicates, the psychology of testimony arose first out of Stern’s interest in developing “experiments on memorial fidelity.” See William Stern, *Zur Psychology der Aussage: Experimentelle Untersuchungen über Erinnerungstreue* (Berlin: Guttentag, 1912).

It is perhaps no surprise, then, that music dictation focused on those aspects of musical experience that are most quantifiable within the realm of standard music notation: the chromatic scale and discrete rhythmic durations. Because of the discrete nature of notated pitches and rhythmic durations, music (or at least some aspects of certain kinds of music) lent itself to the kind of testimony that could be assessed as either correct or false. Indeed, music dictation exercises were generally limited to the domains of chromatic (and predominantly diatonic) pitch relations and rhythmic durations. While many exercises were devised with purely pitch relations in mind, there were also exercises “where the temporal durations as well as the pitch of the notes must be determined, that is, if the exercises are to be notated in a specific meter”, as one author wrote in an 1898 Klavier-Lehrer article. They further stated that these exercises were of special value, because “the student must double his attention, for he must, outside of pitch, also conceive of the rhythm.”

Given the growth of music pedagogy as a discipline in these decades, it is perhaps unsurprising that the goals and methods of both music dictation and ear training were subjected to considerable debate. Several figures pointed out that music dictation, for example, was necessarily limited by its restriction to discrete pitches. As Mengewein noted:

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87 A. Benda, “Das Musik-Diktat und seine Bedeutung für den Musik-Unterricht,” 334: “…weit schwieriger gestaltet sich die Übung, wenn zur Tonhöhe auch die Zeitdauer des Tones bestimmt werden muss, d. h. wenn die Übungen in einem bestimmten Takte notirt müssen.”

88 Ibid., 334: “Nun muss der Schüler seine Aufmerksamkeit verdoppeln, den er muss ausser der Tonhöhe auch den Rhythmus erfassen.”
Of course music dictation is a good means of educating musical listening, but it is after all only one, for to reach this goal, a variety of factors must work together... if we wanted to rely solely on music dictation, i.e. the writing down and determination of sounds and rhythms, we would overlook the most significant branch of ear training: the education of pure intonation.\(^8^9\)

In this sense, music dictation was deemed to have similar limitations to the piano as a medium for training the ear. Like music dictation, the piano did not require students to perceive, let alone produce, purely intoned intervals of their own accord—and it is for this reason that Mengewein stated that “piano players are completely and utterly slaves of their instruments.”\(^9^0\) By contrast, string and wind players necessarily “know what pure intonation means: it is the foundation of all study.”\(^9^1\) Here, Mengewein demonstrated an understanding of how musical expertise (or the lack thereof) was intimately tied to the instruments and methods of its production. In this instance, this meant recognizing how the predominance of the piano had stifled many musician’s engagement with the challenges of pure intonation, that it had “made our people

\(^{8^9}\) Mengewein, “Die Ausbildung des musikalischen Gehörs,” in Zweiter Musikpädagogischen Kongress, 6-8 Oktober 1904 zu Berlin, 78: “Sicherlich ist das Musikdiktat ein gutes Mittel zur Ausbildung des musikalischen Gehörs, aber eben nur eins, während zur Erreichung dieses Zieles eine Menge Faktoren mitwirken müssen... Wollten wir uns allein auf das Musikdiktat, d. h. auf das Nachschreiben und Bestimmen von Klängen und Rhythmen verlassen, so würden wir zunächst auf den wichtigsten Zweig der Gehörbildung, nämlich auf die Erziehung zur reinen Intonation verzichten.”

\(^{9^0}\) Ibid., 78: “… die Klavierspieler sind ganz und gar Sklaven ihres Instruments.”

\(^{9^1}\) Ibid., 78: “Jeder Spieler eines Streichinstrumentes und jeder Bläser weiss, was reine Intonation bedeutet: sie ist die Grundlage aller Studien.”
unmusical,” and that music dictation alone would not suffice in remedying this state of affairs. Ear training, from this perspective, should not be formulated so as to act within an idealized space, but should instead be directed toward specific musical and pedagogical conditions that carried with them real problems and urgencies.

One of the more significant critiques of ear training practices was forwarded by Hermann Wetzel in a 1915 article in the *Musikpädagogische Blätter*, “Zur Methodik des Gehörbildungsunterrichts” (Towards a Methodology of Ear Training Instruction). While noting that insights concerning “the necessity and pedagogical value” of ear training had spread and deepened in the preceding decades, Wetzel suggested that the same could not be said of its methodology. In particular, he lamented the widespread method of teaching students to recognize and produce intervals in order of their size (second, third, fourth, etc.). For Wetzel, this kind of pedagogical approach (exemplified in Figure 3.7, a singing exercise from Wüllner’s method utilizing the interval of the second) was at odds with the actual goal of ear training: namely, that students should learn to experience diatonic tonality. If both music theory and *Tonpsychologie* had

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92 Ibid., 77: “[Das Klavier] hat unser Volk tatsächlich unmusikalisch gemacht.”


95 Ibid., 20: “Man wird nach dem Gesagten bereits verstehen, dass der methodische Gang eines Gehörbildungskursus nicht der sein kann, wie üblich, die Intervalle ihrer Grösse nach geordnet einzeln einzuüben, sondern dass es zunächst diejenigen Intervalle herauszugreifen und einzuprägen gilt, welche die bedeutsamsten für den Aufbau der Diatonik sind. Das sind
shown that tonal relations lay at the basis of musical experience, what ear training lacked, Wetzel claimed, was a sufficient connection between “psychologically-oriented music theory and the practical methods of ear training.”

Figure 3.7.
One of Wüllner’s singing exercises that, despite its rhythmic variation, never departs from the interval of the second.

Ibid., 19: “Es soll hier der Versuch gemacht werden, die bisher mangelnde Verbindung zwischen der experimentell-psychologisch orientierten Musiktheorie und praktisch-methodischen Gehörbildung andeutungsweise herzustellen, um daraus einige methodische Grundforderungen für den Unterricht zu gewinnen.”

96 This excerpt is taken from the 8th edition (1885) of Wüllner’s treatise. See Franz Wüllner, Chorübungen der Münchener Musikschule (8th edition) (München: T. Ackermann, 1885), 17.
And so, Wetzel forwarded his own “foundational methodological requirements” for ear training instruction that would enable students to properly sense diatonic tonal relations.\(^98\) These included exercises that juxtaposed tonic, subdominant, and dominant harmonies, as well as a focus on intervals suggestive of perfect cadences, namely the minor second, tritone, and perfect fifth. For Wetzel, the essential objective of his own pedagogical approach was that “tonality” would mean not only a “comprehensible concept,” but rather a “clearly apprehended experience.”\(^99\) So, rather than training students to hear and/or sing intervals in increasing size, ear training should, from the very beginning, seek to develop students’ feeling for diatonic tonality. Furthermore, Wetzel’s writings made explicit the kinds of music that these pedagogies of musical listening were directed towards. Despite their sometimes universalizing rhetoric concerning the training of the ear, the pedagogues under consideration in this chapter had a specific kind of music in mind: tonal music of the classical tradition.

**Conclusions**

In the decades following the publication of Wüllner’s *Chorübungen der Münchener Musikschule*, ear training and music dictation emerged as staples of German

\(^98\) These included exercises that juxtaposed tonic, subdominant, and dominant harmonies, as well as a focus on intervals suggestive of perfect cadences, namely the minor second, tritone, and perfect fifth.

\(^99\) Wetzel, “Zur Methodik des Gehörbildungsunterrichts,” 20: “Die knappste Anschauung dieser grundlegenden tonalen Verhältnisse des diatonalen Tonkreises wird durch die Nebeneinanderstellung der drei grossen Terzen vermittelt: f—a, c—e, g—b. Dieses Nebeneinander der drei Grossterzen klar vorzustellen und zu erleben, wird also die erste Aufgabe dessen sein müssen, der dahin gelangen will, dass ihm Tonalität nicht nur ein vielleicht verständlicher Begriff, sondern auch ein klares erschautes Erlebnis bedeutet.”
conservatory curricula; they also became obligatory subjects in the National Association for Music Pedagogy’s exams for music teachers. In the introduction to his 1889 *Katechismus des Musik-Diktat: Systematische Gehörbildung* (Manual of Music Dictation: Systematic Ear Training), Hugo Riemann noted that “not a single conservatory which has attempted teaching [music dictation] has turned back (Paris, Brussels, Antwerp, Hamburg, Dresden, Frankfurt am Main, Karlsruhe, Cologne, Vienna etc.); instead, the yearly reports show that it has proved itself splendidly.” Just a few years earlier, in 1887, the Karlsruhe Conservatory yearly report qualified the perceived value of music dictation to music pedagogy: “a special emphasis was laid on music dictation, as a disciplinary training of musical-intellectual capacity.” To be sure, it is hard to imagine textbooks of ear training or music dictation framing their pedagogies with language of this sort today, jarring as it might be to our twenty-first century sensibilities. But as sociologist Gil Eyal has written, it is precisely when actors struggle to institute their practices that the various backgrounds to those practices are most clearly articulated, and thus most visible to historians. Precisely because the

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102 Eyal writes that the “complex make-up of expertise is typically much more evident when
psychological and disciplinary underpinnings of ear training have been gradually naturalized for upwards of a century, their historicity has escaped critical attention.

In this chapter, we have considered some of the broader historical currents that enabled musical listening to become a central concern of elite music educators around the turn of the twentieth century. Reacting against the one-sided focus on specialized forms of instruction in music performance within conservatory pedagogy, figures such as Franz Wüllner, Salomon Jadassohn, and Fritz Reuter attempted to intervene in what they considered a kind of crisis of musical expertise in the realm of musical listening. To do so, they explicitly sought to develop students’ capacities to *experience* music in a certain way, often borrowing from psychological discourses and techniques. As we have seen, this capacity to “consciously” experience of musical events was both cultivated and analyzed through what I call *transductive pedagogies*, which, by requiring students to translate an experience “into some external, tangible manifestation which can be objectively recorded”,103 mirrored essential characteristics of psychological experimentation.

To be sure, not all of these practices represent pure novelties within classical music education; in particular, the renewed focus on sight-signing and sight-reading recalls earlier pedagogical practices in classical music, not least the solfeggi exercises described extensively by Robert Gjerdingen and others (even if, as Gjerdingen points

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out, the transhistorical similarities are actually quite superficial).\textsuperscript{104} Indeed, figures like Ernst Paul frequently framed these pedagogies, at least in part, as a return to prior practices that conservatories had, in effect, eliminated.\textsuperscript{105} But it would be a great underestimation of the significance of such pedagogies to read them as a simple recasting or rhetorical reframing of earlier, supposedly “lost” practices. As we have seen, underlying these pedagogies was a broader psychotechnical mission that sought to develop an ensemble of related psychophysical processes, whereby perceptions of phenomena in one medium would be smoothly transformed into corresponding actions in another. In the next and final chapter, we will consider how Dalcroze, with his method of “rhythmic gymnastics,” linked ear training with much broader psychotechnical goals and methods by targeting both the entire human body and the psychological domains of perception, attention, memory, and volition.

\textsuperscript{104} Gjerdingen’s most extensive exploration of the solfeggio tradition can be found in Robert Gjerdingen, \textit{Music in the Galant Style} (New York: Oxford University Press, 2007). On his website, “Monuments of Solfèggi,” Gjerdingen notes that “most modern musicians will be surprised at how different solfeggio were in comparison with modern “sight-singing” books.” \url{http://faculty-web.at.northwestern.edu/music/gjerdingen/solfeggi/aboutSolf/histOverview.htm} Accessed 25th April, 2019.

\textsuperscript{105} Paul wrote that “the \textit{written} solution of tasks is not adequate for a successful comprehension of harmonic principles; the student must also work diligently at his instrument, and figured bass must not be allowed to fall out of use”. See Paul, “Empfindung, Vorstellung und Gedächtnis. Abhandlung aus dem Gebiete der pädagogischen Tonpsychologie,” 20: “Zum erfolgischeren Erfassen des harmonischen Elements genügt nicht die \textit{schriftliche} Lösung von Aufgaben; der Schüler muss auch am Instrumente fleissig arbeiten, und das \textit{Generalbass-Spiel} darf nicht ausser Übung kommen”.

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Chapter 4
Transductive Pedagogies, Part II:
Rhythmic Gymnastics

Introduction

In the previous chapter, we saw how techniques of training musical listening—notably ear training and music dictation—emerged out of a newfound concern for, and sense of crisis concerning, the abilities of pupils to “experience” music “consciously.” This apparent crisis of musical expertise sprang from critiques of conservatory training practices, as well as perspectives concerning human sensory functions that experimental psychology and psychotechnics afforded music pedagogues around the turn of the twentieth century. Furthermore, we saw how a transductive logic underlay pedagogies such as music dictation, with students being required to cultivate and verify their supposedly inner experience of sonic musical events by translating it into an “external, tangible manifestation.”¹ All these threads and more continue through this final chapter, where we will consider the broader background and interventions of Émile Jaques-Dalcroze’s music-pedagogical method of rhythmic gymnastics, a set of pedagogical practices and rhetorics that position both rhythm and the moving body as foundational to training musical perception.

Better known today as “Eurhythmics,” Dalcroze’s music-pedagogical methods are still widely practiced throughout much of Europe, the United States, and beyond.²


² The institutional center for Eurhythmics remains the Institut Jaques-Dalcroze in Geneva,
Video demonstrations of the method, viewable on YouTube and other platforms, mostly show groups of children (though sometimes adults, too) in bare feet, moving their bodies in response to a teacher’s improvisations at the piano. Frequently, an audible command uttered by the teacher, expressed either verbally or wordlessly through music, signals to the students that some kind of change in their movements be enacted (for example, that their movements should subdivide a previously established beat into smaller units). Rather than helping students learn or memorize any specific rhythm or passage of music, such classes utilize forms of play to help students develop their capacities for perceiving rhythmic events and responding to them through movement. Here, we have a kind of transductive pedagogy that utilizes the entire body as its means of expression. In the words of two practitioners of rhythmic gymnastics in the latter twentieth century, Julia Schnelby-Black and Stephen F. Moore, “within each student, a transformation is taking place: music is becoming movement.”

In order for such transformations from aural perception into bodily movement to successfully occur, rhythmic gymnastics sought to develop a kind of maximized impressibility in the realm of musical perception on the one hand, and full control over bodily means of expression on the other. This decidedly psychophysical conceptual apparatus, which relies on the twin notions of *impression* and *expression* to explain

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Switzerland. Though Eurhythmics and related methods are taught at a number of university music departments and music conservatories, an official diploma for teaching Eurhythmics (the *Diplôme Supérieur Jaques-Dalcroze*) can still only be obtained through the *Institut Jaques-Dalcroze*.

human experience and activity, is explored in more detail later in this chapter. For the
time being, it suffices to note that it was precisely such capacities that Dalcroze took as
the primary object and goal of rhythmic gymnastics: “That which we seek is the
development, the elucidation, the strengthening of our impressions, and then the
extension and mastery of our means of expression.”

As distant as this kind of pedagogical practice might seem from the upper
echelons of conservatory training, of all the music-pedagogical methods that arose in
the first decades of the twentieth century, perhaps none received a wider reception in
German conservatories than rhythmic gymnastics. Though Dalcroze developed the
central tenets of his music-educational practice while professor of harmony and solfège
at the Geneva Conservatory, it was in Germany that his pedagogical discourse and
practice enjoyed their most extensive and favorable reception. Given the broader

4 Quoted in Karl Storck, Œmile Jaques-Dalcroze: seine Stellung und Aufgabe in unserer Zeit
(Stuttgart: Greiner & Pfeiffer, 1912), 39: “… das, was wir suchen, ist zunächst die
Entwicklung, Verdeutlichung, Verstärkung unserer Eindrücke und dann die Erweiterung
und Beherrschung unserer Mittel des Ausdrucks.”

5 Given Dalcroze’s increasingly obvious intersections with experimental and applied
psychology, the broader psychological turn visible in German conservatories traced in
chapters 2 and 3 of this dissertation surely did much to lay appropriate ground for this
favorable reception. Several writers pointed out the fact that German music educators
seemed especially eager to welcome Dalcroze’s pedagogical interventions. For example,
Adolphe Appia noted in the augural issue of Der Rhythmus—the short-lived organ of
Dalcroze’s institute at Hellerau—that “only in the German countries did his work resonate
and receive serious attention.” See Adolph Appia, “Über Ursprung und Anfang der
rhythmischen Gymnastik,” Der Rhythmus 1 (1911), 28: “Nur in den germanischen Ländern
fand er Widerhall und ernste Beachtung.” And Karl Storck, in recalling the years leading up
to Dalcroze’s move to Germany in 1911, wrote of how “previous experience had shown
that appropriate ground for major development was only to be found in Germany”. See Karl
Storck, Œmile Jaques-Dalcroze: seine Stellung und Aufgabe in unserer Zeit (Stuttgart:
Greiner & Pfeiffer, 1912), 32: “Die bisherigen Erfahrungen hatten gezeigt, daß nur in
Deutschland der rechte Boden für eine Entwicklung ins Große zu finden war”.

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emergence of ear training (and the psychotechnical logics underpinning it) in conservatory pedagogy around 1900 traced in the previous chapter, it hardly seems surprising that German institutions were the ones to most prominently take up Dalcroze’s pedagogical practices.

Dalcroze’s entrance into German music-educational circles began as early as 1906, when he gave a lecture entitled “The Education of Rhythm” at the third National Music Pedagogy Conference (Musikpädagogischer Kongress) in Berlin.6 More importantly for our purposes, a good number of German conservatories began to incorporate rhythmic gymnastics within their curricula in the years surrounding 1911,7 a date which marked the opening of his own “training institute” (Bildungsanstalt) just outside of Dresden, in the “garden city” of Hellerau.8 Clearly, Dalcroze viewed his successes in Germany as offering the greatest opportunity to transform his practice into a “social institution,” a desire that he stated to one of his prized students, Suzy Perottet.9

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7 Yearly reports from a variety of German conservatories held in the archive of today’s Universität der Künste in Berlin show the following conservatories began to include rhythmische Gymnastik or similar variants in the following years: Karlsruhe, 1909; Kiel, 1909; Heidelberg, 1910; Augsburg, 1911; Frankfurt am Main, 1911; Köln, 1911; Stern’sches Conservatorium Berlin, 1913; Stuttgart, 1913; Hochshule für Musik Berlin, 1914; Weimar, 1920. Though necessary incomplete, such a list nevertheless provides a sense of the rapidity with which rhythmic gymnastics was taken up within major German conservatories. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/D4, Bestand 1a, and Bestand 4/22.

8 For a short history of this institution, see Irwin Spector, Rhythm and Life: The Work of Emile Jaques-Dalcroze (Stuyvesant, NY: Pendragon Press, 1990), Chapter 7: “Hellerau.”

9 Perottet remembered that “Jaques-Dalcroze claimed that he didn’t want to open a theater in Hellerau, but rather wanted to something for the people. Rhythmic education should become a social institution.” See Suzanne Perrottet, Die Befreiung des Körpers: Erinnerungen (Wädenswil am Zürichsee: Nimbus Kunst und Bücher, 1914), 51: “Jaques-
If rhythmic gymnastics was to become more than a mere pedagogical and musical fad, Dalcroze realized that a network for training teachers in his methods was of upmost importance. And it seems that, despite it going bankrupt in 1915 following the outbreak of World War 1, the training institute at Hellerau, in addition to various “twin institutions” in Berlin, Dresden, and Frankfurt am Main, did succeed in helping to disseminate rhythmic gymnastics in Germany more broadly. The Hochschule für Musik in Berlin, for example, sent two students to Hellerau in 1912, bringing them back to the Hochschule in 1914 as the institution’s first instructors in rhythmic gymnastics.¹⁰

¹⁰ This exchange is documented by letters between Hermann Kretzschmar (director of the Hochschule), the Prussian Ministry for Ecclesiastical, Educational, and Medical Affairs (Ministerium der geistlichen, Unterrichts-, und Medizinalischen Angelegenheiten), and the two students (Ellen Reuschel and Karl August Fischer). See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2633.

¹¹ This photograph is extracted from a short booklet about the Bildungsanstalt in Hellerau, a copy of which is held in the archive of today’s Universität der Künste in Berlin. See
For our purposes, the uptake of, and explosion of discourse around, rhythmic gymnastics among German pedagogues constituted one of the central events within conservatory education in the early twentieth century. Leo Kestenberg, in a 1939 article, “Music Education Goes its Own Way,” wrote of how Dalcroze acted as perhaps the key figure in transforming elite music pedagogy in this era:

The basic sociological and pedagogic ideas of modern music education had to be developed at first by professional musicians. At the head of the procession stands the composer and harmony-teacher Émile Jaques-Dalcroze, who as early as 1905 laid before a music education congress of the Association of Swiss Composers his “Proposals for a reform of music instruction in the schools”… The discovery of rhythmic gymnastics provided new stimuli, as the years went on, to improvisation, solfège, ear-training, to modern dancing and calisthenics, and to therapeutics. It has acted like a renaissance of classic ideas, and modern music education is unthinkable without it… despite all attempts to belittle or explain away the genius of Jaques-Dalcroze, the principles upon which his discovery was based underlie every system of rhythmic education.12

Kestenberg understood, then, that Dalcroze’s importance to music education derived, at least in part, from his successful linking of pedagogical endeavors with other fields, including “therapeutics.” Indeed, before there was any recognizable discipline of music therapy, Dalcroze succeeded in positioning music pedagogy as a kind of therapeutic

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practice.

John Habron has recently explored how “the notion of music as therapy finds an echo in Jaques-Dalcroze’s idea of an education through and into music, music as education.” Though in agreement with the essence of Habron’s conclusion, my analysis departs significantly in terms of its historiographical perspective on the relation between Dalcroze and more contemporary forms of music therapy. Rather than viewing Dalcroze as a forward-looking figure who foresaw important aspects of modern music therapy, I would suggest that it was Dalcroze’s successful linking of music education, psychotechnics, and experimental pedagogy that paved the way for the styles of thought and practice that dominate music therapy to this day. In other words, the issue at stake here is not so much one of the quasi-coincidental resemblance between Eurhythmics and music therapy, but rather the ways in which Dalcroze, through his interdisciplinary endeavors, helped forge the historical conditions of possibility of music therapy as a modern discipline.\textsuperscript{13}

In this final chapter, I argue that it is with rhythmic gymnastics that we can locate the emergence of a pedagogical discourse and practice that enlists music as a means of healing, regulating, and economizing the psycho-physiological organism. While there is long history in the Western world of claiming that music benefits human beings in various ways (not least in the realms of the soul, morality, and taste),\textsuperscript{14} the

\textsuperscript{13} See John Habron, “‘Through music and into music’, through music and into well-being: Dalcroze eurhythmics as therapy”, \textit{The Journal for Transdisciplinary Research in Southern Africa} 10 (2014), 104.

\textsuperscript{14} For an (admittedly limited) overview of the contexts in which music has come to take on a medicinal and/or therapeutic role in the Western world, see Peregrine Horden (ed.), \textit{Music
growth of rhythmic gymnastics crystallized an important shift towards locating these benefits on the level of psychology and physiology. On the one hand, we will see how the emergence of rhythmic gymnastics, as a novel music-pedagogical practice, was contingent on a decidedly psychophysical understanding of human musicality. And on the other, analyzing the early history of rhythmic gymnastics suggests that locating “musicality” among the psycho-physiological functions of human perception and action first gained social utility in a specifically pedagogical context.

Going against the grain of previous and highly decontextualizing interpretations of Dalcroze’s activities,15 I suggest that the importance of rhythmic gymnastics to the study and production of human musicality was its crystallization of broader problematics that flourished between the fields of music education, experimental psychology, applied psychology, and experimental pedagogy over the course of his lifetime. From this broad, historicizing perspective, we can begin to consider Dalcroze’s claim that a “true” music teacher should simultaneously be a “psychologist, physiologist, and artist” not as a historical oddity, but rather as a statement with its own

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15 Much of the blame for the highly decontextualizing interpretations of Dalcroze’s activities can be placed on his frequent critiques of conservatory training that he forwarded in his published writings. In them, Dalcroze was consistently insistent that his methods were initially formulated as a kind of antidote to musical problems that he claimed resulted from conservatory pedagogy. Such writings undoubtedly encouraged more hagiographical readings of Dalcroze’s career that position him as a kind of institutional outsider—an entirely fanciful reading of Dalcroze’s contemporaneous relations with elite music-pedagogical institutions. For perhaps the clearest (and certainly most extensive) discussion of his views concerning conservatory pedagogy, see Émile Jaques-Dalcroze, “The Young Lady of the Conservatoire and the Piano,” in Rhythm, Music and Education, trans. Harold F. Rubinstein (New York, NY: G. P. Putnam’s Sons, 1921), 61-78.
requisite conditions of possibility. The story I tell here is not so much one of outlining a broader psychological “context” for Dalcroze’s interventions, but rather one in which Dalcroze and his followers quite deliberately sought to build a network that straddled multiple contexts, most prominently conservatory pedagogy, applied psychology, and experimental pedagogy. More specifically, I show how Dalcroze utilized rhythm—and its education—as a kind of pivot, a conceptual maneuver that allowed him to translate what first appeared as specifically musical concerns into much broader, and essentially psychotechnical, ones. In this sense, Dalcroze sought to place rhythmic gymnastics in relation to wider fields of psychological and educational research that were endeavoring to find, as Dalcroze himself put it, “the surest and most rapid means of establishing communication between the various currents of our psycho-physical life and of enabling children’s bodies to be under the full control of their thoughts.”

Dalcroze and his followers claimed repeatedly that music education could play an outsized role in achieving these goals. This notion of the widespread utility of

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16 In advocating for a “sociology of expertise,” Gil Eyal has argued that a crucial line of inquiry in tracing the historical development of forms of expertise is to outline “the conditions necessary for expert statements and performances to be formulated, repeated, and/or disseminated.” See Gil Eyal, “For a Sociology of Expertise: The Social Origins of the Autism Epidemic”, American Journal of Sociology, 118 (2013), especially 872-3.

17 Here, I am following Bruno Latour when he writes that “it is not a question of historians finding a contextual explanation for a scientific discipline, but of the scientists themselves placing the discipline in a context sufficiently large and secure to enable it to exist and endure.” See Bruno Latour, “Science’s Blood Flow: An Example from Joliot’s Scientific Intelligence”, in Pandora’s Hope: Essays on the Reality of Science Studies (Cambridge, MA: Harvard University Press, 1999), 104.


19 Of the myriad statements one could quote to make clear Dalcroze’s commitment to using
music education, undoubtedly, relied on how he construed the nature and functions of musicality: for Dalcroze, a person was truly musical if they were capable of accurately and effortlessly receiving musical impressions, and, conversely, if they possessed self-mastery over their means of musical expression. Here, then, to be musical went hand in hand with the smooth operation of one’s psycho-physiological functions. And so Dalcroze reasoned that, even if the initial goal of rhythmic gymnastics was to create musical persons, it also, by extension, created more efficient and expressive psycho-physical beings.

Origins of Rhythmic Gymnastics

Before exploring specific aspects of the discourse and practice of rhythmic gymnastics, let us first consider the kind of institutional context in which it first emerged: namely, conservatory pedagogy. A common misconception concerning the historical origins of rhythmic gymnastics is that the relation between conservatory training practices and Dalcroze’s “discoveries” was entirely negative. That is, conservatory pedagogy is often painted as if it functioned purely as a foil to Dalcroze’s revolutionary ideas, and that a conservative and backward-looking conservatory establishment was simply unwilling to entertain the pioneering work of such a pedagogue.20 A closer consideration of

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music as a means of transforming his students, perhaps none is more crystalline than the following: “There is only one way to get the body to realise its full gamut of expressive possibilities, and that is to subject it to a thoroughgoing musical regime.” quoted in Marie-Laure Bachmann, Dalcroze Today: An Education through and into Music, trans. David Parlett (Oxford: Clarendon Press, 1991), 100.

20 Consider, for example, Irwin Spector’s account of Dalcroze’s relationship with the “conservatory authorities” at Geneva in his 1990 biography: “The practical work of combining music and body movement was begun at the conservatory, at first within his
Dalcroze’s own writings, however, reveals a rather different, and sociologically more compelling, story. Looking back on several decades of his own conservatory teaching, which began in Geneva in the early 1890s, Dalcroze recalled the process through which he first became concerned with the musicality of his pupils:

During the twenty years I have been professor of harmony at the Conservatoire of Geneva, I have had many opportunities of recognising how defective in the most elementary musical ability were the majority of my pupils, even the most advanced. I found the simplest elements — the recognition of pitch and the sense of rhythm — so imperfectly developed that theoretical teaching could be given only in the most tortuous way and through continual obstacles. It was through discovering that nine out of every ten pupils understand and “live” music so little that I resolved to give all my time to the development of the child’s musical powers...²¹

Several things are to be taken from this passage. First, much like his counterparts tasked

regular classes, and then with the cooperation of other students. As Dalcroze broadened his scope he tried out his techniques both with adults and with very young children. The more he experimented the more he found the need for enlarging the extent of the exercises. He required a larger room, furnished with mirrors, and facilities nearby for changing clothes and for showering. The conservatory authorities and his colleagues had no quarrel when he inaugurated his ear training method, neither from the standpoint of its theoretical value nor for its integration with that nebulous characteristic, musicianship. But when he began working out the concept of rhythm and body movement as a musical and educative force, trouble was brewing. His request for improved facilities was rejected. The administration referred to his activities as singeries (monkeyshines) and considered them to be outside the realm of responsible music teaching... Undaunted by initial setbacks, he sought a space outside the conservatory to carry out his experiments... He no longer had the protection or the blessing of the conservatory; the responsibilities were entirely his own.” See Spector, Rhythm and Life, 69.

with teaching the *Elementarklasse* in German institutions, the institutional framework of the conservatory provided Dalcroze with opportunities to teach a wide variety of pupils, in terms of both age and proficiency. As he noted, even the most seemingly proficient of these pupils—ones who were well on the path to being fully-fledged professionals if they so desired—struggled with aspects of their theoretical studies. Undoubtedly, such a setup also played a crucial role in Dalcroze coming to insist that rhythmic gymnastics was best suited to training *children*, not only because of their more “plastic” state,\(^2\) but also because he came to position his exercises as preparing students for later, more specialized musical studies. Second, Dalcroze came across these problems precisely because of his specific position as a professor of *music theory* (primarily harmony and solfège) within the conservatory, a fact that is all too often brushed over in previous accounts of the development of rhythmic gymnastics. Like other music pedagogues involved in the development of ear training explored in the previous chapter, Dalcroze came to feel that music theory, as it was generally taught in the latter nineteenth century, did not successfully develop their students’ capacity to truly hear music. From this perspective, we can see how the conservatory—and more specifically, the music theory classroom—functioned as the crucial “surface of

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\(^2\) Paul Boepple, a professor at the Basel conservatory in the early twentieth century and early advocate of rhythmic gymnastics, wrote that “the rhythmic exercises, undertaken at a specific age when body and mind are still very impressionable and afflicted with few bad habits, therefore have the meaning of a general means of education.” See Paul Boepple, “Zur Methode der rhythmische Gymnastik von E. Jaques-Dalcroze”, in *Musikschule und Konservatorium Basel: Jahresbericht über den einundvierzigsten Kurs, 1907-1908* (Basel: Buchdruckerei Werner-Riehm, 1908), 47: “Die rhythmischen Übungen bedeuten also, in einem Alter vorgenommen, wo Körper und Geist noch sehr empfänglich und mit wenig schlechten Gewohnheiten belastet sind, *ein allgemeines Erziehungsmittel.*”
emergence” for Dalcroze’s initial problem: how to remedy the unmusical state of his pupils. Again, rather than functioning as an inescapably conservative institution that simply reproduced musical states of affairs, the pedagogical space of the conservatory helped generate novel pedagogical practices and approaches.

Dalcroze went on to reason that, if conservatory students were incapable of consciously experiencing the most basic elements of music—pitch and rhythm—a series of exercises should be designed to remedy this problem. As Karl Storck wrote in his 1911 *Émile Jaques-Dalcroze: seine Stellung und Aufgabe in unserer Zeit* (*Émile Jaques-Dalcroze: His Position and Task in our Time*): “Above all, we are concerned with the education of the primary musical elements. Tone and rhythm are the most essential components of music, and therefore the sensation of both is the most primal prerequisite of musicality. Musical listening and rhythmic feeling should generally, then, be the requirements of musical instruction.”

A student’s musicality, from this perspective, was primarily composed of elemental capacities in perceiving rhythm and pitch. For Percy Ingham, an early English advocate of rhythmic gymnastics, the practical consequences of this conception of musical expertise for music educators were all too obvious: “The aim of musical

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education should be, not the production of pianists, violinists, singers, but of musically
developed human beings, and that therefore the student should not begin by specializing
on any instrument, but by developing his musical faculties, thus producing a basis for
specialized study.”

Among this particular network of music educators, then, human musicality was understood as a series of faculties that existed prior to, while also making possible, specific musical performances. And precisely because such exercises would target the most fundamental aspects of a student’s musical expertise, they should take place before any kind of study on a specific instrument. If students were to undergo a preliminary regime of training targeting a range of more elementary musical capacities, “musicalising” them, a more complete instrumentalist could emerge.

Dalcroze’s project, in the way that it responded to perceived problems of musical listening within conservatory training, can be understood to have begun in a decidedly similar vein to ear training and music dictation practices discussed in Chapter 3. (And this should come as no surprise, considering that Dalcroze’s first published article was “The Place of Ear Training in Music Education,” published in 1898.)

There we saw how, as early as the 1870s, “the recognition of pitch and the sense of rhythm” had already emerged as central concerns within German conservatory

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pedagogy with the publication of Franz Wüllner’s *Chorübungen der Münchener Musikschule*. In this sense, Dalcroze’s pedagogical interventions can be seen to have taken place within broader, newfound emphases on problems of expert listening. But with rhythmic gymnastics, Dalcroze appears to have been the figure to have successfully elevated *rhythm* as the primary object of a pedagogy of musical perception.28

**The Problem of “A-rhythm”**

As with broader discussions of musical listening in this period, discussions of rhythm and its education often forwarded the notion that a kind of crisis of rhythmic expertise had permeated musical culture. And again, it was conservatory training that was deemed responsible. What was lacking was not the innate talent or musicality of students, but the pedagogical practices that would produce it. Julius Steger, in a 1908 *Der Klavier-Lehrer* article concerning “the significance of rhythmic gymnastics for our German youth,” wrote that “those of us who give music lessons experience daily the fact that we still require special means for obtaining rhythmic surety… many music

28 Though rhythmic gymnastics was certainly the most widely circulated aspect of Dalcroze’s pedagogy, it in fact functioned as part of a three-pronged system: rhythmic gymnastics, ear training, and improvisation. To be clear, the decision to separate out rhythmic perception as both a distinct musical capacity and pedagogical object rhythmic education was not entirely novel; in an 1890 article in *Der Klavier-Lehrer*, “Overcoming Rhythmic Difficulties in Music Instruction,” Gustav Stoewe had already raised “the possibility of conceiving of rhythm separately from tone, of feeling and thinking it as something existing for oneself,” and thus of a set of distinctly rhythmic exercises in elementary music classes. See Gustave Stoewe, “Die Überwindung rhythmischer Schwierigkeiten beim Musikunterricht,” *Der Klavierlehrer* 13 (1890), 189: “… der Möglichkeit, den Rhythmus losgetrennt von den Tönen zu erfassen, ihn als etwas für sich selbst Bestehendes zu denken, zu fühlen.”
teachers have come to be convinced that we require different (and better) means of obtaining influence over the sense for rhythm.” Though Steger acknowledged that some ear training practices, and especially music dictation, had attempted to transmit a solid sense for perceiving rhythm to students, he believed that they were nevertheless doomed to failure. Stating that dictation fell short of requiring students to truly “sense” and “experience” rhythms, he claimed that “I do not believe that, with the help of music dictation, rhythmically weakly-endowed children can be led to an enduring rhythmic surety”. Dal croze himself was quite explicit about where he located the inability of these pedagogies to properly instill the experience of rhythm in students, noting that the “signs” representing rhythmic events functioned as a poor substitute for “feeling” these events. In a similar manner to the critiques that early pioneers of ear training leveled at music theory pedagogy’s reliance on music notation as its medium of instruction (see Chapter 3), Dalcroze noted the following: “Children are not taught to feel rhythm, but are merely told the signs that indicate it, the result being that the child becomes familiar

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with the effects of movement rather than with movement itself. Children learn to classify and to name the various divisions of time; they acquire no personal experience of these divisions.”

Beyond the lack of a rhythmic pedagogy that utilized media other than notation, what could explain these deficiencies in rhythmic expertise? Though his initial issue was with the specifically musical aspects of his students’ rhythmic capabilities, Dalcroze gradually came to see “the lack of musical rhythm [as] the result of a general “a-rhythm,” whose cure appeared to depend on a special training designed to regulate nervous reactions and effect a coordination of muscles and nerves; in short, to harmonise mind and body.” Dalcroze, in other words, chalked up his students’ lack of rhythm to the poor functioning of their psycho-physiological organism: a lack of volitional control, and insufficient channels of communication between the mind and the body. Rhythmic gymnastics, then, was designed as a kind of therapeutic cure that would create, “by rhythm, a rapid and regular communication between brain and body.”

Over time, and especially in conjunction with his student Suzy Perrottet—she recalled how she functioned as his “guinea pig” in developing bodily responses to

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33 Jaques-Dalcroze, “The Inner Technique of Rhythm,” 54.
specific musical stimuli—Dalcroze would build up his system through a kind of curative logic. That is, he would start out with a specific problem (say, the inability to rapidly hear a change in meter), and devise an appropriate exercise to address it. As he himself put it, “it was by endeavoring to determine the individual cause of each musical defect and to find a remedy for it that I gradually built up my method of rhythmic gymnastics.” Quite explicitly, then, Dalcroze viewed his students as quasi-experimental subjects; he sought to utilize problems in musical capacity as opportunities for pedagogical experimentation.

This almost piecemeal approach to developing specific exercises did not, however, mean that rhythmic gymnastics ultimately sought to patch over a multitude of discrete “defects.” On the contrary, Dalcroze insisted that all of his exercises were ultimately designed to target and produce a general capacity for rhythmic perception and movement. Furthering this point, Steger recalled how the technique of helping students memorize difficult rhythms through tapping on a solid surface (such as a table) was insufficient, precisely because it did not seek to develop this broader rhythmic capacity: “I must admit that one can teach less capable students correct rhythms in special cases through this kind of finger gymnastics, but I don’t believe that these

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34 The full quote from Perrottet is as follows: “I was, in fact, his guinea pig. It was pioneering work what we were doing; we were always trying new movements and studying the most diverse sequences… back then, one had no idea how to move in order to express something.” See Perrottet, Die Befreiung des Körpers, 36: “Ich war eigentlich seiner Versuchskaninchen. Es war Pionierarbeit, was wir taten, wir probierten immer neue Bewegungen und studierten die verschiedensten Abläufe… Man hatte damals keine Ahnung davon, wie man sich bewegen konnte, um etwas auszudrücken.”

gymnastics would bring about strong, lasting impressions on the brain. The same
procedure would be required for every new piece of music, and with that it is no help at
all.”

The goal, then, was to fashion a lasting rhythmic disposition—to embed it in the
psychological functions seated in the brain.

Dalcroze later clarified why he sought to create this broader “instinct of
muscular and nervous harmonizations” in an article entitled “Remarks on Arrhythm”:

Temporary corrections, even though frequently repeated, of a specialised
arrhythm can produce only exceptional states of eurhythm [translatable as
“harmonious rhythm”]. Arrhythm can be radically cured only when the general
functions of the human organism have been completely regulated, when constant
regularity has been set up in its various manifestations, and when there has been
normally developed the instinct of muscular and nervous harmonisations.
Without this instinct, the rubato of the piano pupil will never manifest as an act
of suppleness and flexibility, but rather as a sign of nervous debility and psycho-
physical disorder.

Clearly, Dalcroze came to see both the problems of and solutions to “arrhythm” as
inescapably tied to wider questions of a distinctly psychophysical nature. Indeed, in the
years preceding the founding of the training institute at Hellerau in 1911, Dalcroze

36 Steger, “Welche Bedeutung hat die Methode Jaques-Dalcroze für die musikalische
Erziehung unserer Deutschen Jugend? Rhythmische Gymnastik — die erste Stufe des
Musikunterrichts,” 276: “Ich muss wohl zugeben, dass man durch diese Finger-Gymnastik
auch bei weniger begabten Schülern richtige Rhythmen für den speziellen Fall erzielen
könnte, glaube aber nicht, dass diese Gymnastik starke, dauernde Eindrücke auf das Gehirn
hervorrufen würde. Somit würde jedes neue Musikstück die gleiche Prozedur bedingen.
Damit ist uns nicht geholfen.”

14 (1933), 142-43.
seems to have increasingly viewed the project of rhythmic gymnastics in psychotechnical terms, a shift no doubt consolidated by his collaboration with the Genevan neurologist and child psychologist Edouard Claparède. Speaking to some of his students in Geneva in 1907, Dalcroze told them that “the more you will work to enter into our ideas, the more you will become aware that it is not out of pedantry that we have drawn physiology into the instruction of musical rhythm. As we began to apply these ideas to our students, we were far from thinking that one day we would be occupied with psychology and brain functions.” Here, Dalcroze seems to suggest that it was largely a matter of coincidence that rhythmic gymnastics seemed to draw from physiological and psychological problematics, effacing the labor he undertook to establish these connections in the formative years of his career. In the first (1911) issue of Der Rhythmus, a short-lived journal tied to the training institute at Hellerau, Adolphe Appia recalled how Claparède, and his knowledge of psychology and pedagogy (he published Experimental Pedagogy and the Psychology of the Child in 1909), helped Dalcroze clarify the broader purposes of rhythmic gymnastics:

He needed a terminology, a framework for his speculations and strivings… The professor of physiology psychology, Eduard Claparède, who had become very

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interested in rhythmic gymnastics through what he had heard and seen [presumably at one of Dalcroze’s public lectures], provided him with this terminology, and Dalcroze supplemented what he had learned in his conversations with Claparède through lectures and further thinking. And so he was able to quantify and relate his pedagogical and artistic experiences with scientific facts…

As we will see below, Dalcroze not only received psychological clarification of his music-pedagogical “speculations” through his collaboration with Claparède. He also, with Claparède’s knowledge of practical techniques of learning developed in the field of experimental pedagogy, was able to develop crucial aspects of what I call the *pedagogical economy* of rhythmic gymnastics.

**Shifting Roles of the Body within Music Pedagogy**

Dalcroze is perhaps best known for his foregrounding of bodily movement within music education. As Marja-Leena Juntunen and Heidi Westerlund wrote in 2001, rhythmic gymnastics has lent much credence to the idea that “the body can be taken as a conscious and explicit object of transformation. Jaques-Dalcroze’s idea of bodily

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39 Adolphe Appia, “Über Ursprung und Anfang der rhythmischen Gymnastik”, *Der Rhythmus* 1 (1911), 26: “Er brauchte eine Terminologie, ein Gerüst für sein Sinnen und Trachten. (Die Biographie großer Künstler gibt uns für solche Ergänzungen durch das theoretische Denken häufig Belege.) Der Professor der Physiologischen Psychologie an der Universität Gens, Herr Eduard Claparède, sehr interessiert für die rhythmische Gymnastik durch das, was er gesehen und gehört hatte, verhalf ihm zu dieser Terminologie, und Dalcroze ergänzte durch Lektüre und Nachdenken, was er aus den Gesprächen mit Claparède für sich gelernt hatte. So konnte er seine pädagogischen und künstlerischen Erfahrungen an wissenschaftlichen Tatsachen messen und verknüpfen. Man wird begreifen, mit welchem Eifer der Pädagoge die Tatsachen der Wissenschaft ergriff, um sie zu persönlichen Erfahrungen umzuformen.”

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transformation and therefore of better musicianship seems to have been in many ways ahead of his time.”

And yet, we saw in Chapter 1 that vast amounts of pedagogical labor, on the part of both instructors and pupils, was dedicated to the development of *Technik*; the body being taken as “a conscious and explicit object of transformation” was, by Dalcroze’s time, hardly revolutionary. If there was anything substantively new about Dalcroze’s approach to the body in music pedagogy, it was his insistence that, especially in the realm of rhythm, the entire body could be utilized in musical *perception*. Before exploring in more detail this aspect of Dalcroze’s pedagogical discourse and practice, let us first take stock of some the broader discussions around the musical body instigated by music pedagogues in this era.

When music pedagogues started to draw from psychophysical conceptions of waking human experience, they were in a position to decouple the term “musicality” from the ability to understand and perform musical works, relocating it instead among a broader set of psychophysiological operations. For one thing, with the idea that the material body unavoidably intervened in acts of musical perception, psychophysical research laid the ground for music pedagogues to interrogate the previously unproblematized distinction between musical body and musical mind. As we saw in our discussion of mid-nineteenth-century pedagogies at the Leipzig Conservatory in

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41 As noted in Chapter 1 of this dissertation, the explosion of instrumental textbooks at the Paris conservatoire around the turn of the nineteenth century marked a watershed moment in the production of methods concerning bodily technique, instituting the body as an explicit domain of elite music pedagogy.

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Chapter 1, the division between Technik and Vortrag in the realm of music performance created an essentially twofold conception of musical capacity—bodily on the one hand, and mental on the other. Moreover, there was no mistaking that conservatory professors placed these domains in a distinct hierarchy, with a student’s ability to “understand” and “interpret” a musical work placed well above their technical proficiency. Most crucially here, Technik was thought to have nothing to do with musicality—students were judged as musical (or not) with exclusive reference to their intellectual, spiritual, or ethical abilities. The body, in other words, was not considered a potential site of “musicality,” merely the necessary material through which that musicality could be articulated.

In writing about the need for a new, “psycho-physiological” form of music education, writers from the 1880s onwards sharply criticized this prevailing separation of body and mind in conceptions of musical expertise. Furthermore, and not least with Dalcroze, this mind-body dualism was deemed to have consequences that reached far beyond the merely discursive or conceptual: there existed a genuine crisis of what Fritz Giese, eventual Nazi and a key figure in the development of German psychotechnics, called the body-mind (Körperseele).42 Franz Bachmann, for example, in his lecture on the importance of Dalcroze’s pedagogical interventions delivered at the first International Music Pedagogy Conference in 1913, described this problem as “the

42 See Fritz Giese, Körperseele (München: Delphin-Verlag, 1924). I was first made aware of Giese’s monograph by its being mentioned in the file on the department for Music Education in the archives of Berlin’s Universität der Künste. In a letter written to the director of the Hochschule für Musik, Georg Schünemann, professor of ear training and rhythmic gymnastics Charlotte Pfeffer suggested that this book was highly useful from a music-pedagogical perspective. (And perhaps unsurprisingly, references to Dalcroze’s methods—including reproductions of photographs from Hellerau—are peppered throughout the book.) See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2981.
gruesome double-life of today’s individual, brought about through the schism of mind and body.”

For Karl Storck, a major figure in the reception of Dalcroze’s methods in German circles, this “illness of our times” was nothing other than the “disorder of or lack of harmony in our nervous system.”

As much a practical or empirical problem as it was a philosophical one, Bachmann located the origins of this crisis as far back as the ascent of the catholic church, when the body “was disconnected from the essence of music, and thus began the age of pure sound as the expression of the purely mental.”

Ina Löhner, in a lecture entitled “Psycho-physiologischer Musikunterricht” (Psychophysiological Music Instruction) delivered at the second National Music Pedagogy Conference in 1904, located the schism in a rather more recent, and specifically musical, history. Using the history of piano instruction as her means of illustration, she spoke of how music educators of the early and mid-nineteenth century had severed the domains of musical

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44 Karl Storck, Émile Jaques-Dalcroze: seine Stellung und Aufgabe in unserer Zeit (Stuttgart: Greiner & Pfeiffer, 1912), 52: “Was ist denn die Neurasthenie, diese Krankheit unserer Zeit, anderes als ein steter Zwiespalt, ein dauernder kämpf zwischen unserer geistigen Einbildungskraft und den Fähigkeiten zur Verwirklichung, als ein mangel an Ordnung in dunerer Muskeltätigkeit, als, mit einem Worte, die Unordnung, der Mangel an Harmonie in unseren Nervenzentren.”

capacity (*Können*) and musical knowledge (*Wissen*) from one another. I quote her here at length:

The instructional works of this time, which today still hold some meaning, like those of Cramer, Klakbrenner, Hummel, Czerny had finger-gymnastics as their predominating aim. The piano methods (*Klavierschulen*) now competed to achieve the greatest possible facility in playing along the shortest possible path. Every element which constituted this was subjected to a detailed, specialized training, and every branch of technical capacity was methodically developed. “Knowledge”, as it belonged to the older piano methods and which required knowledge of figured bass, was suppressed by “capacity”; and so the piano playing of this era only emphasized the purely external moments of capacity: agility, speed, smoothness, security, and purity of playing. The textbooks exclusively became “piano methods”, without textual explanation. Figured bass, instruction in harmony and form — these receded into their own particular textbooks… and so we stand today before a historical challenge: to summon methods and texts of instruction that organically synthesize the knowledge of past eras (*das Wissen der älteren Zeit*) with the capacity of our new era (*das Können der Neuren Zeit*)…

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A major task of what Kestenberg called “the new music education,” then, would be to close the distance between the mental and bodily domains of human experience (or, in Löhner’s terms, between “knowledge” and “capacity”). What was required, in other words, was not a set of musical pedagogies that targeted body and mind as separate entities, but a pedagogy of the relations between them. Indeed, Dalcroze understood this to be the foundational reasoning of his own pedagogical methods: “before all else, communications should be established between the mind that conceives and analyses, and the body that executes.” More specifically, he claimed that it was in this sense that rhythmic gymnastics held its most distinctive value: “I see the special worth of rhythmic gymnastics in the fact that it unites body and mind in training, coalesces them into the most intimate interdependence… and so rhythm — and only rhythm — provides a complete unification of the mental and the bodily; it is simply the psychophysical principle.”

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Somewhat paradoxically, then, the turn towards psychology in music education led to musicality no longer being tied exclusively to the province of the mind. But this should be read less as a rejection of the importance of mental functions in musical perception and action per se, and more as a reconfiguration of the roles that both mind and body played in relation to one another (however much these discourses seem to challenge a clear-cut mind-body dualism, they never went so far as to erase the distinction altogether). Consider, for example, how even those aspects of musical action that had been located wholly in the body, relegated to mere Technik, were now directly linked to the psychological domain. As Peter Ramul put it in his 1920 Die psychophysischen Grundlagen der modernen Klaviertechnik (The Psychophysical Foundations of Modern Piano Technique): “the foundation and source of piano technique is not the repetition of movements, but rather our psyche.”49 The practical response of teachers should therefore be to “give special attention, from the first lesson onwards, to the development of the psyche’s activity as the foundation of Technik.” Here, following research in psychotechnics, experimental pedagogy, and child psychology, the idea was that various kinds of mental activity—“intellect, volition, sensation, and feeling”—were essential to successfully embedding bodily dispositions in individuals.50

Oskar Raif, a piano professor at the Hochschule für Musik in Berlin, set out to


50 Ramul, Die psycho-physischen Grundlagen der modernen Klaviertechnik, 13: “… indessen spielen all Arten der seelischen Tätigkeiten, nämlich Intellekt, Wille, Empfindung und Gefühl, eine große Rolle bei der Entwicklung der Technik des Klavierspiels.”
answer the question of whether the acquisition of Technik was a mental or bodily phenomenon. Of the “many experiments” that Raif undertook to answer the question, he chose to elaborate on one in particular that, for him, demonstrated the primacy of mental activity over physical capacity in the development of piano technique. His account of this experiment would be published posthumously in 1901 by Carl Stumpf in Stumpf’s journal, Zeitschrift für Psychologie und Physiologie des Sinnesorgane (Journal for the Psychology and Physiology of the Sense Organs). With eighteen of his students, Raif instructed them to only practice a series of scales, arpeggios, and other exercises with their right hand over a period of two months. At the beginning of the experiment, students had averaged a speed of 120 beats per minute for the right hand, and 116 for the left. At the end of two months, his students had attained an average tempo of 186 beats per minute for the right hand, and 152 for the left. Moreover, further tests with these students had shown Raif that the mobility of individual fingers remained unchanged, though Raif did acknowledge that an increase in durability and power of the fingers (not speed per se) was perceptible. And so, Raif concluded, piano teachers should aim to cultivate “dexterity of thought”, not “dexterity of the fingers,” in their students. (It should also be noted here that Raif was hardly alone in using his students as material for pedagogical and psychological experimentation.)


Such experiments led Raif to suggest that *Technik*, at least with regards to the piano, was less about the development of pure speed of movements, but rather the *punctuality* (*Rechtzeitigkeit*) of those movements. For Raif, this meant that *Technik* had more to do with the volitional *control* of movements—that is, the ability of an individual to control the “when” of movements in relation to one another: “this punctuality can doubtless only be the product of our will, and therefore we are to look for the starting point of this punctuality in the central areas of the nervous system.” In short, what had before been understood as purely a disciplining of the body, the development of *Technik*, came to be articulated in heavily psychologized terms. More precisely, Raif located the ability to execute highly skilled musical actions in a kind of mastery of one’s own volitional impulses and mental habits—goals which lay at the heart of rhythmic gymnastics.

The body’s utilization in rhythmic gymnastics, then, can be positioned within much wider reformulations of its role within human musicality and music education that occurred in the decades surrounding the turn of the twentieth century. Nevertheless, Dalcroze did depart from extant music pedagogical practice by suggesting that the body, if deployed correctly, could help develop musical *perception*. If Raif posited that psychological factors played the decisive role in developing bodily technique, Dalcroze argued that the body, if properly deployed, could buttress the training of musical listening. In other words, he helped to shift the *object* of ear training by suggesting that, Ibd., 354: “Diese Rechtzeitigkeit kann zweifellos nur ein Product unseres Willens sein, wir haben also den Ausgangspunkt für die Fingerfertigkeit in den Centraltheilen unseres Nervensystems zu suchen.”
especially in the realm of rhythm, it is the whole body that listens—he expanded the site of aural perception from “the ear” to the entire psychophysical organism. As Storck put it, Dalcroze recognized that, while the body served as the “elemental means for performing movement,” it also functioned as “the primordial site of experience” (das ursprünglichste Erfahrungsgebiet).54

This experience of rhythm at the level of the body, however, was not guaranteed. A merely passive perception of the body, for Dalcroze and his followers, was not really perception at all: only active, rhythmic movement was seen to generate properly musical observations. As Dalcroze put it, “consciousness of rhythm [can only be acquired] by reiterated experiences of movements of the whole body.”55 If the goal was to develop the most basic psychophysical functions necessary to hear and produce music—a kind of maximized capacity for receiving musical impressions on the one hand, and effortless control over complex musical action on the other—then a novel pedagogical apparatus would have to be forged.

“Hopp!” - The Pedagogical Economy of Rhythmic Gymnastics

In this chapter, we have seen how Dalcroze began with a set of problems similar to that of figures discussed in the previous chapter: how to train students to hear and "experience" music "consciously.” Where he departed from earlier advocates of ear


training was his insistence that the entire psychophysical organism—including the nervous and muscular systems—was inescapably connected to the faculty of listening. In the following section, I would like to consider aspects of what I, following Andrew Warwick, am calling the “pedagogical economy” of rhythmic gymnastics, paying particular attention to the ways in which Dalcroze, along with Claparède, designed exercises to train the psychological categories of perception, attention, and volition. More so than any other figure in this crucial period of development in music education, Dalcroze articulated how "musicality" could be linked—in decidedly practical and pedagogical ways—to these broader psychological phenomena. Rhythmic gymnastics, though it started out as a form of music pedagogy, gradually morphed into a much broader project of transforming humans \textit{qua} psychophysical beings.

From early on in his conservatory career, Dalcroze was keen to develop a set of maximally effective pedagogies of musical perception. To achieve this, he dedicated himself to rethinking not only the object of music pedagogy, but also the media, techniques, and overall arrangement of music-pedagogical practice itself—that is, a pedagogical economy of music. As Perrottet recalled in her recollections of Dalcroze as an unusually self-reflexive music teacher, he “was above all a good pedagogue. He was always asking himself how he could better train a musician and help them to become

\footnotesize{56} I borrow the term “pedagogical economy” from Andrew Warwick in his description of the rich set of pedagogical materials and practices that comprised undergraduate training in mathematical physics at Cambridge University during the nineteenth century. See Andrew Warwick, \textit{Masters of Theory: Cambridge and the Rise of Mathematical Physics} (Chicago, IL: Chicago University Press, 2003), especially Chapter 1, “Writing a Pedagogical History of Mathematical Physics,” and Chapter 3, “A Mathematical World on Paper.”
more rhythmical.”57 One of the central questions that Dalcroze attempted to answer with rhythmic gymnastics was as follows: how can one maximize music pedagogy so as to exert the maximum amount of influence over students in the shortest amount of time? Put differently, Dalcroze was concerned with what experimental psychologist and key figure in the development of experimental pedagogy Ernst Meumann called “the economy and technique of memory.”58 As Meumann’s monograph on the subject makes all too clear, large amounts of contemporaneous research in experimental pedagogy and child psychology had been investigating questions of efficiency and efficacy in learning methods, and from the first decade of the twentieth century onwards, Dalcroze familiarized himself with this research, in no small part due to his collaborations with Claparède.

In a broad sense, even the separation of rhythmic gymnastics from other aspects of Dalcroze’s pedagogical system (the other two areas being ear training and improvisation) was due to his concern for establishing a well-designed economy of musical learning. On this, he wrote the following:

There are two physical agencies through which we appreciate and understand, live and experience music: the ear, as regards sound; the entire nervous system, as regards rhythm. Experience proves that it is not easy to educate both of these simultaneously. A child finds it difficult to apprehend a melodic succession and

57 Perrottet, Die Befreiung des Körpers, 34: “Vor allem aber war Jaques-Dalcroze ein guter Pädagoge. Er fragte sich immer wieder, wie man einen Musiker besser ausbilden und ihm helfen könnte, rhythmischer zu werden.”

the rhythm animating it at the same time. Before teaching relations between sound and movement, it is wise to study these two elements separately. Sound is manifestly of secondary importance since it has not its origin and model within ourselves; whereas movement is instinctive in man, and therefore first in importance. And so I begin musical studies by the methodical and experimental teaching of movement.59

With this placement of “the entire nervous system” before “the ear” in his ordering of the kinds of musical experience that students should attain, Dalcroze demonstrated a real concern for what Claparède called the “genetico-functional problem” that all pedagogy posed.60 In other words, to teach effectively, one required an understanding of the temporal order in which certain functions develop in human beings, because some functions may make other, later ones possible. What mattered here was less the step-wise accrual of knowledge, and more a well-planned development of capacities and functions. For Dalcroze, rhythmic perception and action were to be trained first, because they had clear part to play in “the formation of future functions”:61 if the body was prepared to receive musical impressions and respond appropriately, other less formative musical faculties would be able to follow suit.62

59 Jaques-Dalcroze, “The Inner Technique of Rhythm,” 51
60 Claparède, Experimental Pedagogy and the Psychology of the Child, 70.
61 Ibid., 70.
62 Storck also commented on this broad division of Dalcroze’s pedagogy, noting that “the two foundational elements of musicality—rhythm and consciousness of tone—must be instilled separately, because it is too much for the child to master both at the same time.” See Storck, Émile Jaques-Dalcroze: seine Stellung und Aufgabe in unserer Zeit, 54: “… daß die beiden Grundelemente der Musikalität, nämlich Rhythmus und Tonbewußsein, getrennt anerzogen werden müssen, weil es für das Kind zu viel ist, beides zusammen zu
One of Dalcroze’s central problems was how to go about elevating aimless, and potentially chaotic, forms of musical perception into trained practices of musical observation. Here, he certainly followed those psychologists then investigating the most effective methods for children to observe the material they were supposed to be learning. On the problem of observation and its relation to learning, Meumann wrote the following: “By observation I understand a perception which is distinguished from unsystematic and purposeless sensing by the fact that the observation always has some definite goal in view, which guides the observation in a particular direction, and which, during the act of observation, prescribes the point of view or points of view from which the observed object is to be regarded.”63 In Dalcroze’s case, the broad technique that he developed to transform potentially “unsystematic and purposeless sensing” into a proper mode of aural observation was the transduction of heard music into rhythmic, bodily movements.

By the second decade of the twentieth century, harnessing bodily responses to external stimuli as a means of securing students’ attention had gained widespread traction within experimental pedagogy.64 Münsterberg noted that the “the intimate relation between perception and motor reaction” demonstrated by contemporaneous psychological and educational research led to an obvious pedagogical imperative: “the bemeistern.”

63 Meumann, *The Psychology of Learning*, 50

64 When it came to the utility of “motor responses” in securing the attention, Münsterberg wrote of how pedagogical research had shown that the “the shiftless mind can be most directly forced into service by a systematic control of the motor response.” See Münsterberg, *Psychology and the Teacher*, 167-68.
teacher [must] give attention from the start to the development of motor reactions in response to the objects to be perceived. The child must follow with the eyes, fixate and accommodate, must draw what he sees, speak or write what he hears, in the service of the perfect perception itself." Adhering to this transductive logic, Dalcroze required his students to use their limbs in such a way that they could “faithfully reproduce the rhythms perceived by the ear.” Such movements were seen to strengthen aural perception by guiding students’ attention, enabling them to observe music from a particular point of view. At the same time as rhythmic gymnastics deployed bodily movement as a way to channel perception, it was also seen, conversely, as utilizing rhythm to channel bodily movement. As Storck put it, “rhythm is the means of mastering bodily movement. Its power to order (ordnende Kraft) discloses and regulates the endless variety of possibilities of movement.”

So, like Meumann and many other psychologists involved in the growth of experimental pedagogy around 1900, Dalcroze paid special credence to the notion that any kind of learning “depends, in great measure, upon the manner in which the act of

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67 Schnelby-Black and Moore put it as follows: “Through the direct and total involvement of their bodies, Dalcroze could guide their senses and influence their perceptions as they formed the habit of focused attention.” See Schnelby-Black and Moore, *The Rhythm Inside*, 53.
observing has been done.”\textsuperscript{69} Rhythmic gymnastics, from this perspective, used the body not only as a means of channeling the perception of musical events, but also to enhance the effects of practice. That is, requiring students to transduce musical perception into bodily action was understood as contributing greatly to the development of longstanding dispositions. As Steger wrote in his 1908 article in \textit{Der Klavier-Lehrer}, rhythmic gymnastics derived much of its power from the realization that deploying the entire body in acts of musical perception offered one means of maximizing the “impression upon the brain” that such rhythmic exercises afforded:

With the rhythms that the student himself represents, the extent of [the mental and bodily power] necessary to its performance is of the highest importance. A weak bodily movement can naturally bring about only a weak impression on the brain. The bigger and more multifaceted the performed movement is, the greater and more conscious must be the volitional impulse and the stronger its reactive power on the brain. That is the reason why Dalcroze does not stick with the previous means used in the education of rhythmic certainty, but rather enlists the whole body as a help.\textsuperscript{70}

\textsuperscript{69} Summarizing various ways in which students might be asked to observe material, Meumann wrote that “the material may be presented to one or to several senses simultaneously. It may be perceived simply by means of the visual, or the auditory, or the tactual, or the kinaesthetic sense. Or it may be presented simultaneously to the eye and ear by a method of exposing and pronouncing; simultaneously to the visual and motor senses by having the observer make appropriate muscular movements of speaking, writing, etc. during the exposure…” See Meumann, \textit{The Psychology of Learning}, 148.

Dalcroze himself expounded on this idea, asking his readers the following question as early as 1898: “If, up to present, muscular movements of hand and fingers alone have sufficed to create in the spirit a distinct consciousness of rhythm, what far more intense impressions might we not convey were we to make use of the whole organism in producing the effects necessary for the evocation of the motor-tactile consciousness?”

Writing almost a century later, Schnelby-Black and Moore wrote of how “the addition of body movement to music training increases the amount of sensory information forming musical perceptions.” For advocates of rhythmic gymnastics, then, there was a clear—and essentially proportional—relation between the extent and strength of an impression and the “traces” such impressions left upon pupils. The greater and more complex the movement/impression, the greater the trace left. And so Dalcroze sought out “strong” and “multifaceted” movements, because these were understood to require the greatest effort from—and therefore have the largest possible effect on—both the brain and the nervous system.

Rhythmic gymnastics can therefore be usefully situated alongside what Kyla Schuller has recently called the “politics of plasticity” in the nineteenth century (and beyond). As Schuller writes, contemporary thinkers are certainly not “the first to break

Gehirn. Das ist der Grund, weshalb Dalcroze nicht bei den bisherigen Hilfsmitteln zur Erziehung rhythmischer Sicherheit stehen bleibt, sondern den ganzen Körper zur Mithilfe heranzieht.”


72 Schnelby-Black and Moore, The Rhythm Inside, 45.

73 Kyla Schuller, The Biopolitics of Feeling: Race, Sex, and Science (Durham, NC: Duke
through the Cartesian wall and portray matter as plastic and agential.”  

Crucial to Schuller’s argument concerning the emergence of various practices of “sensorial discipline” in a variety of social arenas is her discussion of the widespread notion of “impressibility,” which circulated first among physiologists and psychologists in the mid-nineteenth century. For Schuller, “impressibility denotes the capacity of a substance to receive impressions from external objects that thereby change its characteristics.” Fascinatingly, Perrottet suggested that rhythmic gymnastics proved highly successful in developing her capacity to receive musical impressions, so much so that she experienced this heightened impressibility as a kind of erasure of self: “I had become so impressionable, that I was, put simply, lost. I could no longer find myself.”

For our purposes, perhaps the major discovery of applied psychology, and child psychology in particular, was the notion that an individual could themselves be the agent of their own impressibility. Indeed, Dalcroze’s entire pedagogical apparatus relied on the notion that one’s own actions would leave a trace in the nervous system; repeated performances—or, in Dalcroze’s terminology, “re-iterated experiences”—left traces in the form of dispositions. In a similar manner, Claparède expounded on the related

University Press, 2018), 5.


75 Ibid., 18. Though Schuller’s work is focused on the United States, the discursive formations she discusses have much in common with a broader, transatlantic project of psychotechnics.

76 Ibid., 7.


78 For Meumann, physiologists working as early as the 1850s had shown that the meaning
notion of “play” as essential to the development of both human and nonhuman animals during childhood, noting that the child must act as the agent of their own development: “the child must himself develop himself.” For Claparède, play was important because it stimulated motor and sensory functions—and perhaps most crucially, the “associations” between motor and sensory domains—that were not “furnished by heredity.”

Beyond its attempt to develop the psychophysical functions deemed necessary for truly musical modes of perception, rhythmic gymnastics placed great emphasis on cultivating the faculties of both attention and volition. For those extolling the benefits of memory could be extended so that it was considered as the general result of “practice” on all organic matter: “This extension of the meaning of memory receives its support from the fact that every process or every activity which has once occurred in organized matter—in nerve, in muscle, or even in simple cell or in groups of cells—leaves behind it a disposition or after-effect as a result of which the same activity, on being repeated, is accomplished more easily and with a lesser expenditure of energy, and also in somewhat modified form. This survival of the dispositional after-effects of every activity is also the basis of all of the effects which result from practice; and this memory is brought into relation with all of the phenomena of practice.” See Meumann, The Psychology of Learning, 3-4.

Claparède, Experimental Pedagogy and the Psychology of the Child, 120.

“The greater part of these motor-sensory associations are not furnished by heredity… [the individual] must then create them for himself.” See Claparède, Experimental Pedagogy and the Psychology of the Child, 140.

The concepts of volition and attention permeate discourses around rhythmic gymnastics. In the “instructional plan” of the Dalcroze training school in Berlin, for example, the following “teaching goals” (Lehrziele) are contained within the category of rhythmic gymnastics: “The development of attention and the ability to concentrate” (Entwicklung der Aufmerksamkeit und der Fähigkeit, sich zu konzentrieren); “The development of the will and the mastery of one’s own body” (Entwicklung des Willens und Beherrschung des eigenen Körpers). See Bildungsanstalt Jaques-Dalcroze, Zweiganstalt Berlin (Leipzig: Oscar Brandstetter, n. d. (c. 1912)), 4-5. A copy of this booklet is contained in the archive of the Universität der Künste Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2633.
of rhythmic gymnastics early on in its reception in Germany, one of the great benefits of Dalcroze’s method was the fact that “a special emphasis is laid upon the training of the will.”\textsuperscript{82} Moreover, for these pedagogues, rhythmic gymnastics had demonstrably succeeded in this respect: “Through this education, volitional power and presence of mind are increased to the highest degree.”\textsuperscript{83} William Cowan, in what amounts to one of the few extant critical-historical accounts of rhythmic gymnastics, has written of how Dalcroze sought to develop the will through bodily performance. In his study of so-called “will therapy” as it developed in Germany around the turn of the twentieth century, Cowan has suggested that rhythmic gymnastics “was intended not to train musicians or dancers but rather to educate the will through dance.”\textsuperscript{84} Though his analysis conveniently avoids the fact that Dalcroze developed his methods as a means of cultivating musicality, Cowan is certainly correct in his observation that rhythmic gymnastics formed a “paradoxical project of using bodily performance to solidify the rein of spirit.”\textsuperscript{85} Indeed, for Cowan, “what the Jaques-Dalcroze Method demonstrated was that the only way to strengthen the dominance of the mind over the body was through bodily performance itself.”\textsuperscript{86}

\textsuperscript{82} Storck, \textit{Émile Jaques-Dalcroze: seine Stellung und Aufgabe in unserer Zeit}, 40: “Ein besonderes Gewicht ist gelegt auf die \textit{Ausbildung des Willens}.”

\textsuperscript{83} Ibid., 53: “Willenskraft und Geistesgegenwart werden in höchsten Maße gesteigert durch diese Erziehung.”


\textsuperscript{85} Cowan, \textit{Cult of the Will}, 17.

\textsuperscript{86} Ibid., 188.
As well as its deployment of bodily movement, rhythmic gymnastics structured forms of musical “play” and improvisation in order to develop students’ attention and volition. The initial question here, for Dalcroze and Claparède, was: how can the active interest of students be secured? For one thing, they would have to tread a fine line between the repetition of old material on the one hand, and the presentation of new material on the other. Whereas an overabundance of new demands would lead students to be overwhelmed by an incomprehensible and undifferentiated mass of stimuli, sheer repetition would allow for automatized or mechanized responses which did not secure either attention or volitional effort. To be sure, this idea of pedagogically balancing the presentation of old and new information was hardly unique to Dalcroze, as the notion of apperception—the meaningful assimilation of an idea into consciousness by placing it in relation to other, already-learned ideas—had gained widespread currency in experimental psychology for some decades prior to the development of rhythmic gymnastics. Indeed, Münsterberg affirmed that “the careful preparation of the material in an order in which it allows apperception and yet demands the pupil’s effort to secure the apperceptive grasp must be one of the chief cares of the thoughtful teacher.”

According to Ferdinand Krone, writing in Der Klavier-Lehrer in 1908, one of the distinguishing aspects of Dalcroze’s pedagogy was the fact that he had succeeded in precisely this respect: “there is not a single exercise which does not demand full mental concentration of the student.”

87 Münsterberg, Psychology: General and Applied. P. 373

In rhythmic gymnastics, this careful organization of material related just as much to how different kinds of activity followed one another as it did to the information to be learned. Schnelby-Black and Moore, in their discussion of the actual practice of rhythmic gymnastics, noted how a game-like, quasi-improvisational structure lay at the heart of the method: “In devising these successful games Claparède, with his knowledge of human behavior, and Dalcroze, with his keen observations, utilized techniques similar to those used by psychologists for arousing and sustaining attention—sudden change, contrast and novelty, intensity, repetition, complexity, and motivation.”

To take perhaps the most emblematic example of these kinds of pedagogical devices, Dalcroze frequently deployed what he called the imperative “hopp!”, a verbal command that signaled to students a sudden change in their movement: to completely stop all movement, to move twice as quickly or slowly as previously, or some other form of agreed upon change. Dalcroze put it as follows: “These exercises should be accompanied by signals or words of command, the object of which is to keep body and mind ‘under pressure,’ to produce either movements, or sudden halts, or else a combination of halting and moving… to train the nervous system in such a way that the command transmitted by the mind may be immediately and completely performed…”

How, then, was this “pressure” to be achieved? In a word: improvisation. By harnessing musical unpredictability, rhythmic gymnastics demanded attention and

89 Schnelby-Black and Moore, *The Rhythm Inside*, 60.

volitional input on the part of students. As Percy Ingham noted in a chapter on the growth and practice of Dalcroze’s methods, expertise in musical improvisation was “not required in the pupil,” but it was “absolutely necessary for the successful teacher of eurhythmics, who must be able to express, on some instrument—most conveniently the piano—whatever rhythms, simple or compound, he may wish to use in the training of pupils.”\(^1\) So, the instructor in a rhythmic gymnastics must be proficient in improvising, because it is precisely the flexibility and unpredictability of incoming musical impressions that would put students on high alert, keeping their bodies and minds “under pressure.” Indeed, in describing such “quick reaction games,” Schnelby-Black and Moore have noted that it is not so much the content of the change that is important, but the expectation of change itself.

Here, then, Dalcroze and Claparède placed great emphasis on the overarching pedagogical economy of rhythmic gymnastics, as it was the careful arrangement of specific forms of activity that would most effectively necessitate students to engage their attention and volition. Furthermore, Dalcroze located part of the utility of these kinds of arrangements in the fact that students themselves would become aware of the basic psychophysical problem that they had to overcome: “The discrepancy which the pupil observes between will and act possesses the advantage of making him aware of the hiatus between his mental and his physical habits. His problem therefore is as follows: how to set up agreement between the mind and body?”\(^2\)

\(^{1}\) Ingham, “The Method: Growth and Practice,” 42.

In some instances, Dalcroze sought to transmute actions initially performed with great effort into more or less automatic ones. The psychological aspects of this process were then a major problem within pedagogical research; Münsterberg, writing about the activities of writing and also playing the piano, noted that “we continually learn to connect movements with the help of our attention, until they are performed without reflection.” Dalcroze did not seek automization for its own sake, however. Instead, he saw it as a means of allowing students to extend the scope of their activities: once one movement was automized, another contrasting movement could be added. Münsterberg put it in the following terms: “The forming of habits has its purpose in making will effort superfluous… the habits disburden the will and thus give to it the chance to adapt itself to higher purposes.” In the case of rhythmic gymnastics, this combining of habitual and volitionally-controlled movements led to what might be called a counterpoint of the body.

Broadly speaking, such exercises were listed under the “teaching goal” of “developing the attention and the capacity to concentrate,” and it is clear here that the ideal endpoint was a kind of attention that was both concentrated and distributed. In


95 See *Bildungsanstalt Jaques-Dalcroze, Zweiganstalt Berlin* (Leipzig: Oscar Brandstetter, n. d. (c. 1912)), 4-5: “Entwicklung der Aufmerksamkeit und der Fähigkeit, sich zu konzentrieren.” A copy of this booklet is contained in the archive of the Universität der Künste Berlin. See Universität der Künste Berlin, Universitätsarchiv, Bestand 1/2633.

96 On this aspect of attention and concentration, Meumann wrote that “attention is capable of being developed in many directions; practice increases both its intensity of concentration and its extent or compass… An attention which is at once distributed and intensive seems to represent the highest degree of concentration, if by concentration we mean the energy with
one example, students might be asked to represent a crescendo with one limb (increasing the strength or spatial extent of a movement), while simultaneously depicting a diminuendo with another (decreasing the strength or spatial extent of a movement). But perhaps the most well-known example of this counterpoint of the body is a kind of exercise where students represent different meters with each limb, an exercise that, when executed across all four limbs, is supposed to have astounded audiences when Dalcroze gave public demonstrations of his method.97 Such exercises, as Dalcroze put it, were designed to make an individual polyrhythmic: “a child is rarely born polyrhythmic. To create in him the sense of simultaneous rhythms, it is indispensable that he should be made to execute, by means of different limbs, movements representing different durations of time.”98 And Storck, following a similar train of thought, claimed that this counterpoint of the body enabled individuals “to possess musical forms in the highest sense.”99

which attention can be turned upon its object. The opposite of concentration in this sense does not consist in distribution but in distractibility.” See Meumann, The Psychology of Learning, 198.

97 Perrottet, who would have served in some of these demonstrations, wrote that “All who witnessed our demonstrations, whether they were professors, teachers, or artists, were wholly impressed, and in their reviews they wrote enthusiastically: “marvelous!” Noone had previously thought this to be possible.” See Perrottet, Die Befreiung des Körpers, 38: Alle, die unsere Demonstrationen sahen, ob Professoren, Lehrer oder Künstler, waren völlig beeindruckt und schrieben dick in ihre Kritiken: “Fabelhaft!” Man hatte dies nie für möglich gehalten.”

98 Jaques-Dalcroze, “The Initiation into Rhythm,” 89.

99 Storck, 43: “… daß ihnen diese musikalischen Formen im höchsten Sinne Besitz werden.”
Conclusions

In this final chapter, we have seen how rhythmic gymnastics was made possible by broader problematics that emerged out of the fields of music education and applied psychology around the turn of the twentieth century. In particular, I noted how Dalcroze intervened in much broader reformulations of both expert listening and the role of the body in musical perception and action, processes that were well under way before the stratospheric rise of rhythmic gymnastics within German music-educational circles. Furthermore, I argued that Dalcroze successfully borrowed techniques from child psychology and experimental pedagogy to design a novel “pedagogical economy” for training musicians that, he claimed, also served to develop an individual’s psychophysical capacities.

By the 1910s, Dalcroze had succeeded in building an international network for rhythmic gymnastics spanning Switzerland, France, the United Kingdom, the United States, and—most prominently—Germany. So, far from the outsider figure he is often portrayed to have been, the pedagogical network built by Dalcroze and his followers was part and parcel of the wider psychological—or, perhaps better but, psychotechnical—turn in conservatory pedagogy that the latter portions of this dissertation has traced. With rhythmic gymnastics, we have seen how what Dalcroze called a “musical regime” was deployed as a means of developing the faculties of perception, attention, and volition, all of which were understood to benefit pupils far beyond the realm of music.

Dalcroze himself dedicated significant labor into securing the interest of
educators, musicians, and psychologists—publishing articles, giving public
demonstrations, publishing testimonials from parents, and other such institution-
building activities. Indeed, of all the music educators discussed in this dissertation,
Dalcroze was the most successful in building a kind of pedagogical network that
straddled the fields of music education, psychology, physiology, and psychotechnics. In
so doing, he helped crystallize modes of thinking about and intervening in human
musicality whose contemporary significance extends well beyond Eurhythmics
classrooms.
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