

# Anton Webern and the Concept of Symmetrical Inversion: A Reconsideration on the Terrain of Gender<sup>1</sup>

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Give me where to stand: And I will turn your system of persecution upside down.

— Numa Numantius<sup>2</sup>

## *Introduction:*

### *Webern in the Context of Late Modern Criticism*

Many music studies with critical aspirations figure the music of Arnold Schoenberg, Alban Berg, and Anton von Webern in terms of conservative tendencies. The music's extreme abstraction is said to divert attention from its social dimensions, its formal self-sufficiency is said to deny interpretative plurality, its obsession with structural unity is said to limit compositional subjectivity, and its high seriousness, which was supposed to uphold a criterion of truth, is said to fend off its historical contingency. In particular, the twelve-tone works of Anton Webern have become a

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<sup>2</sup> This was the *nom de guerre* of Karl Heinrich Ulrichs.

kind of paradigm case for the problematic side of musical modernism. Alan Street advances Webern's obsession with the "secret key" of "aesthetic unity" as the chief buttress to the "unswerving commitment to the cause of formal integration" in music analysis today (1998, 57, 59). For Street, this commitment ultimately "represents nothing other than a generalised state of false consciousness: illusion rather than reality" (1998, 61).

Similarly, Rose Rosengard Subotnik relates Webern's "compositional inflexibility" in the creative sphere to "collective unrecognizability" in the interpretive sphere (1991, 246). She claims that by "attributing a quasi-objective necessity to the demands of their craft, contemporary composers have in fact taken a romantic tendency to its extreme: they have located musical significance not just metaphorically but literally—coextensively and exclusively—in the structure of their works" (1991, 270). For Subotnik, Webern's conferral of "so much value on the individual element that the latter in itself suggests self-contained (if not isolated) significance," exemplifies the zenith of modernism's objectifying impulse (1991, 270). And, by insisting on its objective autonomy, such music ultimately fails to "reintegrate [its] values with some larger and present [social] context" (1991, 271).<sup>3</sup>

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<sup>3</sup> Much of the polemic against modernist formalism is founded on poststructuralist premises that reject grand claims of structural unity and is directed at pre- and postwar serialism. The enormous impact that Webern's style of twelve-tone technique had on the music of the 1950s and 60s (notably that of Pierre Boulez, Karlheinz Stockhausen, Luigi Nono, and, to a lesser extent, Milton Babbitt) should not suffice to render critique of the one equivalent to critique of the other. Aside from their formal discrepancies, the respective historical conjunctures in which they operated could not have been more different. On the one hand, the bulk of Webern's twelve-tone music was composed under the increasing pressures, indeed siege, of the Nationalist Socialists in Germany. On the other hand, the compositions of Boulez, Stockhausen, and Babbitt enjoyed

Occasionally, the critique of Webern's formalism, far from mere hermeticism, is linked to an active complicity with undesirable politics. Richard Taruskin, in an attack on neoclassical formalism, alerts us to "Webern's enthusiastic embrace of Hitler" (1993, 299), and Michael H. Kater cites Webern's observation that "someone should attempt 'to convince the Hitler regime of the rightness of the twelve-tone system'" (1997, 73).<sup>4</sup>

### *Adorno's Critique of Webern*

One of the founding narratives that connects Webern's brand of formalism with reactionary politics is Theodor Adorno's *Philosophy of Modern Music*. Ostensibly a polemical essay that dialectically opposes Schoenberg's "progressive" music with Stravinsky's "reactionary" music, the *Philosophy* consistently associates the twelve-tone music of Webern with the failure of reified and undialectical thought. Through the rigid application of the rules of the row, We-

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the official sanction, indeed funding, of high cultural institutions in France, Germany and the United States in the context of the Cold War. For studies on the kinds of indirect subsidies modernist art and its intellectual apparatus received from the U.S. federal government, including the CIA, in a political effort to contrast American freedom of expression with the Soviet Union's censorship thereof, see Christopher Lasch, "The Cultural Cold War" (1967) and Serge Guilbaut, *How New York Stole the Idea of Modern Art* (1983).

<sup>4</sup> Taruskin brings the affinity between formalist serialism and totalitarianism rhetorically into the foreground by introducing Paul von Klenau toward the end of his article: "Meanwhile, one of the Nazi serialists, Paul von Klenau (1883-1946), had openly touted the method as 'totalitarian' and claimed that its strict discipline made it "entirely appropriate to the future direction of the 'Nationalist Socialist World'" (1993, 302). Taruskin does not mention the exhibition of degenerate music, organized by the Nazis in 1938 in Düsseldorf, which included the music of Webern and also displayed a picture of the composer. Kater, in contrast, is reserved in his denunciation of Webern and draws attention to the fact that, under the Nazis, Webern was driven to poverty.

berner's music "designates the liquidation of counterpoint," which, for Adorno, "has the right to exist only in the overcoming of something not absorbed within it, and thus resisting it, to which it is 'added'" (1973, 95). In other words, by making the contrapuntal ideal of formal integration absolute, Webern evacuates the recalcitrant subjective dimension that makes this integration dialectically significant. In contrast to the redeeming aspects of both Berg, who "attempt[s] to break the spell of twelve-tone technique by bewitching it," and Schoenberg, who "does violence to the row" (via un-implied associations such as tonal references, independent motivic connections, and the like), Webern merely "force[s] the technique to speak" (1973, 109, 110). By renouncing the autonomous dimension of composition in the name of the demands of the row, Webern "realizes twelve-tone technique and thus no longer composes" (1973, 110). While Adorno admires Webern for his "particularly artistic selection of the rows" and for resisting the false subjectivity associated with both romanticism and consumerist commodification, he admonishes Webern for "abdicat[ing]" subjective expression entirely (1973, 110, 112). It is important to note that, despite the overwhelming terror he felt about the ubiquity of instrumental reason in an age of monopoly capital, Adorno retains some element of the emancipatory ideal found in Immanuel Kant's concept of human *mündigkeit* (maturity/autonomy). It is this element, which promises the use of reason unfettered by the guidance of another, that he believes has grown silent in the music of Webern.

It is probably in Webern's compositional output after opus 20 (1927) that Adorno feels that the intricate internal make-up of the rows risks undermining the subjective dimensions of composition. "The rows are structured

as if they were already a composition—for example, in such a way that one row is divided into four groups of triads whose interrelationship, in turn, is definable in terms of the basic presentation of the row, its inversion, its crab, and the crab of inversion” (1973, 110). In the *Concerto for Nine Instruments*, opus 24, a model for this kind of dense refinement, Webern constructs a row from permutations of a 014 trichord (see example 1).



Example 1. The four trichords of the row in Webern’s *Concerto for Nine Instruments*, Opus 24.

One of the properties of this row is that, under various retrograde and inversion operations, the four trichords can be reproduced in a different order. For example, the inversion of the row around the axis B/C (or F/F#) produces the four trichords in reverse order (see example 2).



Example 2. The row inverted around a C/B (or F/F#) axis in Webern’s *Concerto*, Opus 24.

Without elaborating the many intriguing invariance relations of this row, which Adorno calls the musical “material,” the key point is that Adorno was disturbed by the kinds of connections these pre-formed relations made with the actual composition. According to Adorno, Webern “strives to bridge the abyss between autonomous composition and the material which demands treatment according to the rules. In actuality, however, this signifies renunciation at the point of greatest engagement:

composing subjects the very existence of the composition itself to question" (1973, 110). For Adorno then, Webern's method is a betrayal of music's dialectical agon. By wholly succumbing to the demands of the material in his composition, Webern relinquishes the critical subjectivity that would interrogate it as a compositional achievement.

For Adorno, the problem is that such a finely constructed row cannot *not* produce motivic unity. In Adorno's words, "The ripest fruits of canonic imitation fall, as it were, of their own will into the lap of the composition" (1973, 110). Perhaps Adorno has the third movement of opus 24 in mind. Unlike, say, the first movement of the Symphony, opus 21, where four staggered permutations of the row unfold a double canon, the third movement of opus 24 is unique in that two imitative voices unfold the *same* row in successive motivic trichords (see example 3). For Adorno, the pre-compositional situation annihilates the possibility for thematic development because the motivic unit, already mirrored on all sides, lacks the individuality that could effect an authentic synthesis with an independent formal logic. It is difficult to gauge what musical conditions should pertain to grant a motive the individuality Adorno seeks. On the one hand, this issue might hinge on the permutational relationships that hold between pitch collections within a row, and, on the other, it might hinge on the status of the row *per se*, however it is constructed. Adorno writes: "Thematic working-out extends itself over such minimal units that it virtually cancels itself out. The mere interval—functioning as a motivic unit—is so utterly without individual character that it no longer accomplishes the synthesis expected of it" (1973, 110). By pointing to the shrunken dimensions of motivic activity, Adorno implies that this failure is symptomatic of twelve-tone music

Sehr rasch  $\text{♩} = \text{ca. } 120$

Ob.  $f$

Kl.  $f$

Hr. mit Dmpf.  $f$

Trp. Immer mit Dmpf.  $f$

Pos. Immer mit Dmpf.  $f$

Klav.  $f$

Fl.  $f$

Ob.  $f$

Kl.  $f$

Trp.  $ff$

Oge.  $f$

Br.  $f$

Klav.  $f$

poco rit. ....

Example 3. Mm. 1-13 of Webern's *Concerto*, opus 21, third movement.

in general, or of what Milton Babbitt calls “permutational systems.” In “permutational systems” the arrangement of an unchanging set of elements informs functional areas, while in “combinational systems” pitch-class content does so (see Dubiel, 1995, 31). Under this reading, combinational systems are necessary to effect dialectical syntheses. In contrast, by pointing to the unexceptional sound of Webern’s motives, Adorno implies that Webern’s *particular* row construction is problematic. Perhaps the proliferation of thirds and minor seconds (interval classes 4, 3, and 1) in the music of opus 24 sounds like a willed denial of other motivic possibilities. Under this second reading, by reducing the music’s field of motivic play to fewer intervals than that of the music of the past, Webern’s motives sound impoverished and mechanical, indeed like “mere intervals.” In so doing, Webern has already constrained the genuinely historical antithesis required for dialectical overcoming within the dynamics of the row.<sup>5</sup>

Adorno recapitulates his critical stance toward the breakdown of thematic development in his discussion of Berg’s use of symmetrical inversions. In Adorno’s assess-

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<sup>5</sup> By favoring combinational systems Adorno may be inadvertently championing tonality, because the latter is the only widely-employed combinational system. Generally speaking, the dialectical promise that Adorno identifies in “developing variation,” in fact, has organic links with tonality. Furthermore, if (as his focus on intervallic properties seems to imply) Adorno is seeking the greatest possible variety of interval classes within the subsets of the row, the diatonic collection trumps all others. The major scale collection, for example, contains every interval a different number of times. Its interval vector reads:  $\langle 2, 5, 4, 3, 6, 1 \rangle$ . This property provides a maximum range of “modulatory distances” from the set because, in the words of Dubiel, the set has “the widest possible variety of numbers of common tones under transposition” (1995, 32). Thus, my second reading of Adorno’s interpretation of Webern recapitulates the first, and Adorno’s “progressive” critique paradoxically risks taking for granted an old-fashioned compositional mode. If this is correct, Adorno cannot but fail to tease out the progressive aspects of a certain kind of twelve-tone music.

ment, when symmetrical structures come to the fore the music loses its dynamic temporality. Adorno feels that Berg's "propensity for mirror and retrograde formations may, apart from the twelve-tone technique, be related to the visual dimension of his responses; musical retrograde patterns are anti-temporal, they organize music as if it were an intrinsic simultaneity" (1991, 14). Similarly, Douglas Jarman associates the mirror symmetries and palindromes in Berg's *Wozzeck* with "predestination" and "man's inability to affect the course of events" (1989, 65). He goes on to argue that, "like the circular images in the text, the palindromes, returning to the point at which they began, closing the circle and thus symbolically negating their own existence, represent the eventual and inevitable end of these predetermined events" (1989, 66). For both Adorno and Jarman, the possibility of subjective freedom is annulled in the context of a spatialized, mechanistic, and predetermined musical universe.

It should be noted that the concept of "spatialization" as a symptom of modern life has a renowned legacy in nineteenth- and early twentieth-century thought. Romantic and Marxist anti-capitalists like Henri Bergson and Walter Benjamin, for example, distinguish between quantitative time (manageable, calculable) and qualitative time (vital, organic). Similarly, in his essay "History and Class Consciousness," Georg Lukács argues that capitalist relations of production restructure time into a closed system: they "reduce...space and time to a common denominator and degrade...time to the dimension of space" (1997, 89). For Lukács, this kind of spatialization leads to reification and to the destruction of an image of the social totality and its historical substratum. As a result, Lukács favors realist literary art that renders a traditional narration of the social whole, as in the works of Honoré de Balzac, Leo Tolstoy, or Thomas and Heinrich Mann, and rejects mod-

ernist expressionism. While Adorno and Jarman, in contrast to Lukács, defend expressionist music, they agree with Lukács in their negative assessment of time becoming space. They do not recognize that duration and extension are always bound up in many complex ways. They do not recognize, for example, that the intense spatializing tendency in the twelve-tone music of the Schoenberg circle may also serve to disrupt a false organic totality.<sup>6</sup>

Various modernist writers, ranging from Friedrich Nietzsche to Siegfried Kracauer, remain open and alert to this kind of possibility. In his essay “On the Advantage and Disadvantage of History for Life,” Nietzsche warns against overvaluing historical temporality, and recommends the strategic spatialization of historical events—the “momentary forgetfulness [of history],...a brief period of inactivity”—in order to become socially active (1980, 45). Kracauer similarly inscribes an emancipatory potential in spatialized phenomena, such as the mass ornament, by arguing that social change can only be effected via the spaces and residues of the lived environment. Kracauer privileges the faculty of “distraction” that resists temporalizing phenomena into an organic whole, which he calls “*the total artwork [Gesamtkunstwerk] of effects*” (1995, 324). In his “Theses on the Philosophy of History,” Benjamin argues similarly: “Thinking involves not only the flow of thoughts, but their arrest as well” (1968, 262). For Benjamin, only when thinking is fleetingly stopped can it rupture the continuity of temporal rule. In contrast, by ignoring the disruptive poten-

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<sup>6</sup> Daniel Albright observes that one of modernism’s general representative moments was “a kind of transvestism among the arts— what happens when one art stimulates itself by temporarily pretending to be another species of art altogether” (2000, xii). Hence we find the rhetoric of music’s increasing spatialization (in the works of symbolist impressionists, like Claude Debussy), and of painting’s increasing temporalization (in works of abstract expressionists, like Wassily Kandinsky).

tial of spatialization, Adorno paradoxically invests a formal condition with absolute value, and (to remain within his terms) thus “spatializes” the music’s meanings. Instead of dialectically mediating a relationship with the world, the musical work becomes a kind of mimetic copy of the reified technological world. In so doing, the category of reification, the central referent at this level of Adorno’s argument, overwhelms the progressive promise of one kind of rupture and simultaneously recapitulates an outdated aesthetic model.

Adorno’s essay “On the Fetish-Character of Music and the Regression of Listening” is a direct response to Benjamin’s adaptation of Kracauer’s notion of (spatialized) distraction in “The Work of Art in the Age of Mechanical Reproduction.” Here Adorno elaborates his negative stance towards Benjamin’s notion of distraction on the terrain of musical listening:

But if [Benjamin’s] film as a whole seems to be apprehended in a distracted manner, deconcentrated listening makes the perception of a whole impossible. All that is realized is what the spotlight falls on—striking melodic intervals, unsettling modulations, intentional or unintentional mistakes, or whatever condenses itself into a formula by an especially intimate merging of melody and text. Here...listeners and products fit together; they are not offered the structure which they cannot follow (Arato, 1995, 288-289).

Thus, for Adorno, such spatialized or “atomized” listening closes its ear to the structural totality and thereby breaks the dialectical tension between part and whole. This forms the false bond between listening subject and commodified object that Adorno associates with the narcissistic aspect of the subject’s personality structure. For Adorno, all identification and empathy with a spatialized, beloved object entails exclusions that become dangerously ideological.

What Adorno fails to notice in Benjamin is the possibility that the dialectical “totality” appears not in the

artwork itself but in the sociological context of the artwork. In this way, all variety of phenomena in Adorno's account get sucked into a critical maelstrom that is run by certain key categories: reification, commodification, spatialization, etc. In fact, Adorno's aversion to the progressive promise of Benjamin's filmic spatialization also betrays an arbitrary disciplinary split between the two men. Adorno's disciplinary affiliations are particularly prominent in the *Dialectic of Enlightenment* (co-authored with Max Horkheimer). For example, he felt increasingly threatened by the upsurge of the modern cult of images (in the form of advertising, mass cinema, etc.) and so his coding of the modern image was often reductive. It seems as if, for him, modern images could do no more than spatialize and ossify human experience in the image of the commodity form. I am not saying that this critical orientation is irrelevant. Indeed, it may be more urgent in the U.S. today—in the context of an ever increasing aestheticization of the commodity via design and marketing—than it was in Germany then. But the critique also leaves no room for resistance or transgression within either context. It is not true that all commodified music is equally controlled by instrumental reason. By showing the eternal sameness of all sectors of the culture industry, Adorno (ideologically) excludes the potential ruptures that occur within the culture industry itself. For all its critical aspirations, then, the argument paradoxically betrays what Anson Rabinach might call the cunning of unreason. In the context of Webern's music, Adorno's rush to reification mistakenly exhausts the analysis of Webern's motivic integration.

For Adorno, the music's motivic integration is not only an integration-always-already, which therefore paradoxically threatens to become a “disintegration into disparate tones,” but its disintegration fails to “becom[e] articu-

late" (*italics mine*, 1973, 111). In other words, it fails to bring to the ear its stylistic failure. Again, it is not clear exactly how Adorno hears the music as a denial of its all-too-integrated failure. Perhaps he hears the unremitting pointillism, the angular presentation of the motives, and the relatively extreme registers of the music as veiling the redundancies of the row. If this is what is at stake, the subjective intervention (in the domains of timbre, texture, registration, etc.) is so exhausted that it can only sound forth falsely; it merely rearranges its shackles. What *is* clear is that Adorno feels that Webern's music, for all its radical subjective autonomy from habituated formal principles, recapitulates their dominating nature by absolutizing the compositional role of the row. The absolutely subjective, "particularly artistic," structure of the row is transformed into its opposite by way of its wall-to-wall determination of the compositional flow. So, for Adorno, the row takes on the perilous character of a fetish: its relationships are "dismally honored as cosmic formulae" (1973, 111). However dialectical in aspiration, Webern's music simply reiterates a kind of medieval "cult of pure proportions" (1973, 112).<sup>7</sup>

Given Webern's predilection for Western music of the pre-Baroque, especially his studies of the Flemish composer Heinrich Isaac (1450-1517), this argument may even have empirical pertinence. This point is borne out as well by Webern's increasing use of formal models that reach ever

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<sup>7</sup> In his essay on Brecht, Adorno argues that those artworks that have lost their immanent dialectical tension "drift to the brink of indifference, degenerate insensibly into mere hobbies, into idle repetition of formulas now abandoned in other artforms, into trivial patterns" (1977, 191). The paradox is that these are exactly those works whose aspirations toward the opposite are greatest.

further backward.<sup>8</sup> But the philosophical point is that the neutralization of compositional effort on account of the row's determinations takes on the darkened hue of cosmological superstition. By investing the material with the power to pronounce "musical meaning from within itself" (1973, 111), Webern's music becomes a hypostatic reincarnation of the medieval harmony of the spheres. Not surprisingly, in Webern's writings, the "unifying laws" of "nature" provided the key terms for musical integration (1975, 56). "When [the] true conception of art is achieved, then there will no longer be any possible distinction between science and inspired creation. The further one presses forward, the greater becomes the identity of everything, and finally we have the impression of being faced by a work not of man but of Nature" (1975, 56). While in Webern's terms the sacred harmony of spheres may have morphed into the secular harmony of nature, in Adorno's terms such thinking would represent an exemplary case of enlightenment returning to myth.<sup>9</sup>

Like the music of old, beholden to the cosmological order, Webern's music reflected the natural order of things. Unlike the music of old, where one gained a mere presentiment of the cosmological order through a kind of anagogic transformation on the terrain of a musical experience, the natural order elaborated in Webern's music seemed absorbed in its self-sufficient being. In fact, Webern's compositions epitomized the late eighteenth- and nineteenth-century principle of aesthetic autonomy. Approximating the miraculous self-generating creation of the natural world, the internal relations of Webern's musical

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<sup>8</sup> In an extensive study, *The Twelve-Tone Music of Anton Webern*, Kathryn Bailey describes this increasingly remote historical point of reference in Webern's oeuvre in detail (1991, 147-263).

<sup>9</sup> On the intimate relationship between enlightenment and myth, see Adorno and Max Horkheimer, *Dialectic of Enlightenment* (1997).

works were immanently regulated. The music embodied, on the one hand, the romantic ideal of parthenogenetic creation, and, on the other, the promise of wholly self-announced meaning. This is the site of Adorno's most stinging critique. For Adorno, the notion of an unmediated creative or interpretive act is pure myth: "Through a peculiarly infantile belief in nature," he writes, "[Webern's] material is invested with the power of determining musical meaning from within itself" (1973, 111). This belief in the "natural force of the row" recapitulates Kant's mythical projection of "the thing itself," and so gives in to a yearning for imaginary transcendence (1973, 111).

Some critics disturbed by the highly controlled nature of Webern's rows have redeemed the music's subjective aspect with recourse to its other parameters. Kathryn Bailey, for example, points out that "an illusion of incompleteness is produced in some of the later works by use of *Ausfälle*" (1991, 93); Anne Shreffler elaborates Webern's more humanist side by eschewing the complexity of his symmetries and concentrating instead on his lyricism (1994); and George Perle argues that, through the careful handling of rhythm and timbre, Webern was able to make connections not guaranteed by the row. According to Perle, "If a twelve-note canon is to be anything more than the mechanical and literal unfolding of axiomatic twelve-note operations, there must be significant criteria of association and contrast, based on special rhythmic, registral, textural, and harmonic relationships. The futility of literal surface imitation in twelve-note music was evident to Webern at once" (1971, 7). But Webern was not, in fact, averse to the literal surface imitation of canonic voices. In opus 21, for example, Webern constrains the very four parameters mentioned by Perle in a way that makes the "mechanical and literal unfolding" of the canonic lines as audible as possible. In the first movement, the rhythms and articulations of the two open-

ing canons are imitated exactly. Moreover, because the orchestra is divided into pairs of matching instruments, the timbre of the canons is imitated as well. Also, while the pointillistic orchestration renders harmonic considerations secondary, the melodic contours of the respective canonic lines are exact mirror inversions of one another (see example 4). While it is true that, especially after opus 28, Webern elaborated less exact contrapuntal imitations, Adorno's argument can, in fact, be strengthened through a consideration of the non-pitch parameters of some of Webern's twelve-tone music. In other words, in these works, Webern's use of rhythm, register, timbre, and contour frequently underscore, instead of undermine, the motivic pitch structure.<sup>10</sup>

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<sup>10</sup> There is another way to consider the loss of expressive subjectivity in Webern's twelve-tone music. Perhaps this music precisely produces an experience of a failed subjectivity that dramatizes the negative truth that music's inexpressible relation to nature cannot be reduced to subjective overcoming. When the "material" (the rule-governed component) refuses to engage dialectically with the "composition" (the subjective component), subjectivity paradoxically also persists in a form that can no longer be musically elaborated. Thus, the promise of a dialectical synthesis is broken, the music's material cannot yield the aesthetic fulfillment that the composition might have done, and, for all its apparent stylistic unity, the music's idea remains irreducibly beyond reasonable grasp. And, by posing a challenge to all decipherment, the music becomes the critical site of recalcitrant non-conformity *par excellence*. On the other hand, by insisting on Webern's necessary failure of style and thus conceiving these works only in terms of non-meaning (beyond language, representation, and the subject), the music also relinquishes the possibility of expanding the boundaries of meaning and the subject. In other words, the music is always-already lost to the ordinary world and becomes "auratic" (in Walter Benjamin's terms). In the face of such a fragmentary experience, Webern's sensuous instrumentation becomes a dangerous illusion—a seductive sheen that encourages what Lydia Goehr might call a rush into the transcendental realm, instead of provoking a commitment to critique. Perhaps this is why Adorno experienced Webern's failure as inarticulate. (However, it is interesting that when Webern revised his atonal Pieces for Piano and Violin, opus 7, he changed various indefinite pitches in the original to definite ones in the revision, which may mark resistance to the seduc-

Webern aligned various musical parameters with the logic of the pitch structure partly because of a fascination with symmetrically inversional constructions. His description of his opus 21 in *The Path to the New Music* centered around the kind of unity made possible by “constant mirrorings,” in the form of inversion, retrograde, and retrograde inversion of certain basic pitch collections (1975, 56). Indeed, all of Webern’s rows seem to have been derived from a basic (or “source”) trichord or tetrachord, whose internal construction is mirrored in the remaining trichords or tetrachords of the row. These basic sets produce an abundance of symmetrically related motivic connections in the musical detail. They obviously also produce pairs of rows whose simultaneous sounding in the music unfold exact mirror images of one another. This is exactly what happens in the opening of opus 21. Four twelve-tone rows are elaborated in terms of two complex mirror canons. Their symmetrically inversional pitch-class patterns are depicted in example 5. In terms of the large-scale structure, the first movement of opus 21 also elaborates a kind of mirror structure. Whether one considers the movement to be in sonata form, as Kathryn Bailey maintains (1991, 163-171), or in ternary form, as Leopold Spinner maintains (1983, 6), the structure of the rows in mm. 1-26 is recapitulated exactly from mm. 42 to the end of the movement. Mirror symmetries are often extended to other parameters as well. Instead of emphasizing a canonic imitation as in opus 21, the opening rhythms of opus 24 unfold a symmetrical mirror that is simultaneously reflected in pitch (see example 6). In short, symmetrical inversion was a key category for Webern at almost all levels of musical composition. From the micro-details of the row to the

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tion of pure sound.) I would like to thank Lydia Goehr for inspiring this kind of thinking.



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clarinet

horn 2

dim.  $mp$  dim.  $p$   $pp$   $p$  dim.  $p$

Inversion around  $F/\sharp$  (or  $B/C$ )

dim.  $p$  cresc. dim.  $p$  dim.  $p$  horn 1 dim.  $pp$

offen violin 1 pizz. arco harp  $\sharp$  Prime Form harp  $\sharp$  viola arco harp  $\sharp$  viola harp  $\sharp$

$p$   $p$   $mp$   $f$  pizz.  $pp$   $f$  dim.  $p$  dim.  $pp$

Inversion around  $E \flat/E$  (or  $A \flat/B$ )

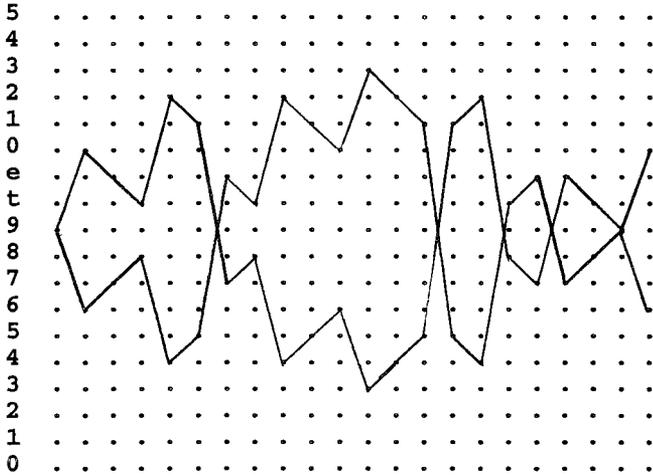
Transposition by 11 semitones

harp horn 1 gedämpft  $\sharp$  offen cello pizz. arco harp  $\sharp$  pizz. violin 2 harp cello mit Dämpfer arco harp cello harp

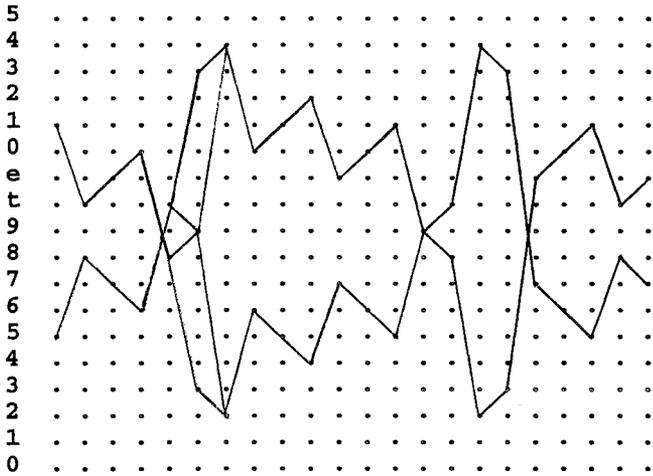
$mp$   $p$   $p$   $pp$  dim.  $p$   $f$  dim. pizz.  $p$  dim.  $p$   $pp$   $pp$   $p$

Example 4. The opening canons of Webern's *Symphony*, opus 21

### CANON I



### CANON II



Example 5. The symmetrically inversional pitch-class patterns of the opening canons of Webern's *Symphony*, opus 21 (voices aligned).



macro-details of the music's overall form, Webern's music exemplified the crystalline unity of a symmetrical pattern. It is this aspect of Webern's musical thinking that leads inexorably to what Adorno finds problematic in it. I would now like to take up this aspect in a different kind of detail.

First, it is crucial to point out that an interest in symmetry and symmetrical inversion was a preoccupation that extended well beyond the bounds of a certain musical thinking in *fin-de-siècle* Europe. Webern's particular vision of the twelve-tone row did not appear in an autonomous vacuum. Not only did the broader Schoenberg circle show a particularly intense interest in symmetrical constructions, but the concept was also part of a wide-ranging intellectual discourse that granted the concept of symmetrical inversion considerable importance in descriptions of the world. I will examine music-theoretical discourse of this sort in the sections that follow.

Second, while it is precisely Webern's obsession with constant mirroring that troubled Adorno, I want to draw attention to the progressive dimension of Webern's idea. It stands to reason that, in so doing, I will advance a critique of Adorno's model for criticism as well. Broadly speaking, I reject Adorno's view that a dialectical agon must be situated within the bounds of the closed musical work. In other words, instead of tracking the dialectic between what Adorno calls music's "material," on the one hand, and its "autonomous composition," on the other, I will track a dialectic between the closed musical work, however (un)dialectical in itself, on the one hand, and the social world in which it circulates, on the other. I want to suggest that despite its sociological aspirations, Adorno's critique paradoxically lends authority to the *absolutely* hermetic claims of the musical work. Perhaps Adorno's proclivity for a method that requires no external verification is sympto-

matic of a residual idealist strand in his philosophy. This is not to say that my analysis aims to diminish the autonomous face of musical works. On the contrary, I want to take seriously—more seriously than Adorno does—Webern's claim that his works are self-regulating wholes whose parthenogenetic workings approximate the condition of nature. By situating this romantic ideal in historical context, I want to draw attention to one emancipatory truth produced by this kind of illusion.

### *The Emergence of the Concept of Symmetrical Inversion and Its Relation to Gender*

Toward the end of the nineteenth century, *inversion* and *inversional symmetry* evolved into fundamental concepts in various scientific disciplines, such as biology, physics, crystallography, music theory, sexology, and group theory. While a single definition cannot capture the various figurations of the term within these disciplines, the concept generally referred to the formal constitution of a natural phenomenon in terms that involved equivalent polar opposites. Thus, a natural phenomenon was divided into two segments that reflected each other, as if in a mirror, to yield equal, but oppositely projected parts of a whole. Like the geometric symmetry of the crystal, the mathematical theorizing of which was entirely a product of the late nineteenth century, a phenomenon like the musical "minor triad" was explained in terms that involved symmetrically reflecting inversions and that were empirically fundamental. In other words, the mirror reflection of intervals was regarded as a natural occurrence given in the empirical world, instead of as constructed or derived. Hence both sides of the opposition—the reflection and the reflected—were granted empirical factuality.

Like some of the symmetrically related oppositions in the discipline of sexology, some of the intervallic symmetries found in music theory had a gendered history. For example, in treatises written in the eighteenth and early nineteenth centuries, the minor sonority was gendered feminine and the major was gendered masculine. Broadly speaking, the difference between these earlier figurations of major and minor and the late nineteenth-century figurations hinged on two key points. First, the symmetrically inversional relation between major and minor substantially eroded their previously gendered dimensions. Second, granting the minor sonority an equally empirical grounding in nature significantly undermined the idea that it was derivative of the major sonority. It is important to point out that the empirical data that proved the equivalence of the minor sonority (such as the so-called undertones) were not yet available at the time that these claims were made. So, the explanatory force of inversion and inversional symmetry—their ability to account for and generate new phenomena—was taken for granted to such an extent that, even in situations where the phenomena did not line up with the empirical situation, the empirical findings were nonetheless assumed to fit the pattern. In an era of rampant positivism, some truth claims were as deeply implicated in the symmetrical identity as they were wholly empirical. In other words, the scientific discourse was charged with the energy of an aesthetic structure, its empirical content patterned by a form.

Although the theory of the minor triad turned out to be inadequate, I want to argue that the concept of symmetrical inversion had a radical potential to undo gendered binaries and that Webern's output reflected this ideal in its most undiluted musical form. Let me point out that this is not the same as saying that the undoing of gender hierarchy is the "extramusical content" of Webern's

music. Such a claim would be overly assured, in my view, of a distinction between what counts as absolutely musical, on the one hand, and what counts as extramusical, on the other. Still, while Webern's twelve-tone compositions cannot be regarded as a feminist text in the late twentieth-century sense, their historical relation to gendered hierarchies suggests that his written descriptions of gender equality in the "new music" should come as no surprise. This means that Webern was quite conscious of the gendered legacy of the diatonic opposition between major and minor, and, if we consider the often sexualized metaphors of his contemporaneous detractors, his public was as well. Again, I am not saying that gender parity constitutes the "meaning" of Webern's music, nor even its primary meaning. Instead, I argue that his music surely meant this as well, and that, given today's disposition of Webern criticism from the left, sounding out this dimension has become urgent. Let me explain.

### *A Methodological Point*

Some recent trends in musicology have tended to regard as self-evidently ideological both the notion of music's aesthetic autonomy and the formalist analysis that attaches to such a construal of music. In fact, the use of formal music analysis in a project concerned with hierarchies of gender and sexuality may, at first sight, seem strangely out of place. In the recent collection of essays *Queering the Pitch*, for example, theories and methods attuned to questions of gender and sexuality are proposed for the study of music. Although it is a new methodological awareness that is principally emphasized throughout, the book's articles cohere, perhaps unwittingly, around various gay musical figures and composers. The approaches advanced in this book are set apart

from the older, ostensibly narrower, formalist orientation of musical research. Jennifer Rycenga, for instance, writes: "The first [methodology in present-day academia] is the time-honored analysis that is taught under the titles of musicology and music theory, in which music is considered exclusively in its own terms, but in such a way that it is reduced to meaninglessness—its connectivity with social/historical, erotic, and personal dimensions is scorned and virtually ignored" (1994, 279). This call for a musicology that casts a wider net—a call for the inclusion of what is traditionally regarded as extra-musical data into the field of music scholarship—is part of a broader impulse in the discipline, which came to be called the "new" or "critical" musicology.

I cannot take up this debate here, except to note that, in many cases, this new approach is predicated on an opposition between the practice of music analysis—hermetically sealed from society—and that of a broader, culturally-situated study, and hence often does less to undo than to solidify this opposition. Such a gesture essentially accepts formalism's hermetic claims, instead of identifying the business of formal analysis as irreducibly social. My project suggests a supplementary approach by using formal analysis to reveal the (often concealed) aspects of sex and gender that accrue to autonomous music. Thus, I have strategically chosen to examine these issues in the context of music that has the character of supreme structural unity and that, very possibly, approximates most exactly the ideal of aesthetic autonomy. In addition, I raise the question of gender precisely in connection with those features of the music that most intensely institute its autonomy. On the one hand, then, I am suggesting a revaluation of analysis, which I am reluctant to cede automatically to a reactionary position. On the other hand, I am suggesting a revaluation of musical autonomy, regarded not wholly as an epistemological essence, but also as a site of radical imagination. In short, I am

suggesting that a newer musicology may want to reconsider the strategic use of these idealizations not in terms of what they are as much as in terms of what practices they make possible.<sup>11</sup>

### *Gender Asymmetry and the Artificialization of Intervallic Inversion*

During the eighteenth century the major sonority and the major mode were often theoretically construed as masculine while their minor counterparts were feminized. In his *Traité de L'Harmonie* (1722), for example, Jean-Philippe Rameau claimed that the major scale was generated by the chord of nature (*corps sonore*), while the minor scale was laid out as derivative of the major. Because of the problems of generating the minor mode in the manner of the

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<sup>11</sup> A brief word on my methodology: I take for granted the challenge to disembodied objectivity in the writing of history made by Hayden White, Stephen Greenblatt, H. Arom Veeseer, and many others in recent years. I share with these writers an interest in exposing the manifold ways in which different aspects of social, scientific, and cultural life affect each other, and particularly in revealing the unsuspected regularities and borrowings that obtain in ostensibly distinct and unrelated activities, disciplines, and institutions. But, unlike the New Historicists, I am not as much concerned with a differential analysis of local discourse, or of local conflicts in a specific setting, as might be expected. The concept under investigation is, in fact, quite widespread and, in many cases, institutionally central. Thus, I have kept this general view in mind throughout the argument and paradoxically also strategically suspended an examination of the extent to which the form of the above scientific discourse, as well as my historical discourse, is the site of ideologically significant work. This is because not all manifestations of these forms, and thus their concomitant messages, yielded equivalent ideological meanings. For example, while it is true that symmetrical inversion in, say, sexology and musicology could be linked to certain modalities for the possibly repressive production of social norms and musical works respectively, I also want to offer the idea that the concept had a politically progressive imagination on the terrain of gender.

major, Rameau believed that the former was a product of artifice and thus needed to be considered subordinate to the major. Likewise, Rameau considered the minor chord as “an inversion of the perfect [major] chord” (1971, 157). In his discussion of the properties of the various keys of the two modes, Rameau attributed specific affective characteristics to each. The affective domain of the various major keys ranged from the expression of mirth, rejoicing, and gaiety to the expression of grandeur, magnificence, and tempestuousness (1971, 164). In contrast, the domain of the minor keys ranged from the expression of tenderness and sweetness to the expression of complaints and mourning (1971, 164). Rameau differentiated the affective qualities of the modes in themselves—a phenomenon that may have been linked with historical tunings and temperaments—but did not spell out the gendered associations of these affects.<sup>12</sup> There was an evident gap between the affects of major keys and those of their parallel minor keys, however, and this difference was associated with the emotional attributes of the two sexes in the cultural imaginary of the time. Major was hard (*dur*) and manly, minor was soft (*moll*) and womanly.

Leonard Ratner (1981), Susan McClary (1991), and Gretchen Wheelock (1993) have shown that a gendered grasp of the affective attributes of major and minor modes was widespread in the eighteenth century. Wheelock writes: “A turn to the minor *mode*...would be easily recognized. And here there was considerable agreement among eighteenth-century writers that minor keys signaled regions of gloom—of melancholy, weeping, languishing laments—a domain associated in turn with the tender ministrations

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<sup>12</sup> In her *A History of Key Characteristics in the Eighteenth and Early Nineteenth Centuries* (1983), Rita Steblin relates eighteenth-century key associations to various factors such as unequal temperaments.

of women" (1993, 202). Occasionally, contemporary theorists described the qualities of the modes in overtly gendered terms. Schubart, for instance, wrote that the key of A minor was expressive of "pious womanliness," while D minor was expressive of "melancholy womanliness" (1993, 208). Usually, the connection was left unsaid. In the words of Johann Kirnberger, the minor mode was suitable for the expression of "sad, doubtful sentiments, for hesitation and indecision" (1993, 202). In short, the feminized minor was judged either in the terms of a lack—Knecht's C minor was "lamenting and longing," while his C major was "cheerful and pure"—or it was judged in the terms of an excess—Galeazzi's G minor was "frenzied," while his G major was "innocent and simple" (1993, 208). The association of the minor mode with womanliness was also borne out in musical practice. Wheelock observes, for instance, that the minor mode arias in Mozart's operas are predominantly sung by women, and that these arias tend to be associated with the general affective categories of fear, rage, and (most predominantly) grief.

It is possible that the difficulties theorists experienced in furnishing a scientific basis for the minor mode lay at the bottom of this assignation of affect. For Jean-Jacques Rousseau, for instance, the minor triad lacked the necessary resonance of Rameau's *corps sonore* and could thus be "discovered only by analogy and inversion" (1993, 202). Moreover, in musical practice, the minor key betrayed a mixing of modal elements and was thus inherently more malleable and unstable than the major. In other words, because it was theoretically and practically slippery, the minor mode could not be brought as effectively under the control of rational man. Wheelock links the destabilizing power of the minor mode with the "excessive" affective dimension, and thus also with its ability to disrupt and challenge power. She argues that the

mutability [of the minor mode] is suggestive...when we look at Mozart's use of the minor mode from another perspective. For, although we find some patterns in his use of specific minor keys to "represent" particular affective states (and statuses) of his characters, these arias as a group suggest a more far-reaching topos of the minor mode in its association with altered states of consciousness, with forces beyond rational control (1993, 218).

Given the minor triad's "imperfect resonance with nature," it is not surprising that the minor mode was associated with irrational states of mind (1993, 220). This point gains further support from the philosophy of emotion then prevalent.

In his *Passions of the Soul* (1645-46), René Descartes made a distinction between "passion" and "action" in terms of their respective agency. He observed that "whatever occurs in the way of novelty and change, is...termed a passion in respect of the subject to which it happens and an action in respect of what causes it to happen" (in Weiss and Taruskin, 1984, 212). While an action and its associated passion were considered "always one and the same thing," their manifestation could be registered through the perspective of either "agent" or "patient" (1984, 212-13). It followed that "what in the soul is a passion is in the body usually an action" (1984, 213). For Descartes, the best way to temper the "excitement" of the passions was to bring them under rational control via an act of the will. In cases of extreme passionate agitation, "the most the will can do while this commotion is in its full strength, is to refuse to consent to its effects, and to restrain several of the movements to which it disposes the body" (1984, 214). Hence, the will's active refusal could trump the externally imposed agitation of passion. In his account of the specific passions, Descartes distinguished between the passions of joy and sadness in terms of this relationship to the reasonable will. Joy was the emotion that consisted in the "en-

joyment of the good," and sadness the one that consisted in the "discomfort and unrest which the soul receives from evil" (1984, 215, 216). Descartes attributed slightly different types of agency to these ostensibly passive phenomena. Joy (actively) beheld the good and sadness (passively) yielded to evil. Furthermore, joy had a non-passionate aspect, which Descartes called "the purely intellectual joy," that "comes into the soul by the *action* of the soul alone" (*italics mine*, 1984, 215). In contrast, the intellectual aspect of sadness "hardly ever fails to be accompanied by passion" (1984, 216). Despite their shared passive nature, then, the various passions had a different relationship to reasoned action. Joy in general tended towards rational activity, sadness did not.

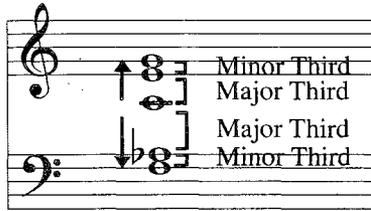
When these passions were expressed in music, a similar argument pertained. Like Descartes, for whom the "aim [of music] is to please and arouse the affections," Johannes Mattheson felt that the "most important and outstanding part of the science of sound is the part that examines the effects of well-disposed sounds on the emotions of the soul" (1984, 189, 217). Mattheson's account of the affections in music essentially endorsed that of Descartes. In his *Affektenlehre*, Mattheson argued that "those affects which are our strongest ones, are not the best and should be clipped or held by the reins" (1984, 218). Thus music was, above all, a moral lesson in the domain of the passions: "This is an aspect of morality which the musician must master in order to represent virtue and evil with his music and to arouse in the listener love for the former and hatred for the latter" (1984, 218). Mattheson explained the workings of the emotions in terms of Descartes's psychophysical model. For instance, joy was an "expansion" of the "vital spirits" that were housed in the cavities of our brains, sadness a "contraction," and so forth (1984, 218). Two as-

pects of this theory are relevant to my discussion. First, it seems that emotions like sadness were not cut of quite the same conceptual cloth as emotions like joy. The latter had a privileged relationship with rationality that, for moral reasons, one learned to love; the former a relationship with irrationality that one learned to hate. Second, these emotions were invoked in palpably physical terms. Emotional feelings involved movements of “animal spirits,” operations of “nerves,” and flows of “blood” (1984, 213, 218). It is in this philosophical conjuncture that the minor sonority’s failure to line up with the mathematical ratios of the overtone series (discovered by Joseph Sauveur in 1701) rendered it experientially problematic. Thus, the minor sonority became an artificial inversion of the major because it posed a challenge to Rameau’s effort to bring the perceptions of experience under the conceptions of reason. And its femininity derived not only from its passive disinclination to reasoned order, but also from its concomitant proximity to unreason and evil. In other words, the very resonance it produced in the listening body was dangerously irrational.

### *Gender Symmetry and the Naturalization of Intervallic Inversion*

By the late nineteenth century, leading German music theorists, such as Moritz Hauptmann, Oskar Fleischer, Arthur von Öttingen, Hugo Riemann, Bernhard Ziehn, and Hermann Schröder, sought to explain the duality of major and minor less in terms of the traditional masculine and feminine bifurcation and more in terms of a symmetrically inversional relation (*die symmetrische Umkehrung*). In Schröder’s view, the major triad consisted of a perfect fifth and a major third above the fundamental, while the minor triad consisted of the same intervals below the fundamental

(see example 7). Minor was thus regarded as a mirror image of major and vice versa. While the empirical buttress for the major triad rested on the overtone series, the scientific explanations of the minor remained notoriously trickier. That is, the major triad was formed by the overtones closest to the fundamental, but the overtone series could not be relied upon to explain the minor triad, for the overtone yielding the characteristic minor third was not anywhere among the first partials. Example 8 reproduces Hermann von Helmholtz's representation of the overtone series in *On the Sensations of Tone* (1912). To complicate matters, partials occurring earlier in the series than the lowest approximation of a minor third were already excluded from the (chromatic) system, presumably as too remote from the fundamental to be perceived.



Example 7. The minor triad as a mirror inversion of the major triad.



	C	c	g	c'	e'	g'	7b'	b''	c''	d''	e''	11f''	g''	13a''	7b''	b'''	c'''
Ordinal number of partials	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Pitch number	66	132	198	264	330	396	462	528	594	660	726	792	858	924	990	1054	

Example 8. Hermann von Helmholtz's representation of the overtone series.

This lack of empirical support for the minor triad led the more traditionally-minded theorist Ernst Mach to posit a single chord of nature (*Naturklang*), namely the major triad, in relation to which the minor triad was explained as a modification or as an embellishment, weak and unstable in itself. As shown above, this understanding of the uneven relationship between the major and minor triads, called harmonic monism, recapitulated the well-established eighteenth-century precedent. For the later nineteenth-century harmonic monists, then, the subordinate place of the minor triad was maintained; its failure to align neatly with the overtone series rendered it derivative of the harmonic monists' *Naturklang*, lacking an empirical grounding in nature. For the harmonic dualists on the other hand, the minor triad was equally axiomatic, or fundamental, in their harmonic schemes as was the major. The minor was also, they claimed, based in nature. To impart an acoustical foundation for the minor, Riemann invoked the *undertone* series. As David Bernstein tells us: "A given complex musical tone, for Riemann, engendered both an overtone and a symmetrically related undertone series": the major sonority (*Klang*) was a mirror image of the minor and vice versa (1993, 380). Thus we witness a moment in Riemann's empirical scheme where the symmetry carries the bulk of the explanatory force and the acoustics, not yet fully proven, were assumed.

I should point out that the configuration of the minor triad in terms of an inverted major has an extensive genealogy, beginning perhaps with Gioseffo Zarlino (1517-1590). For Zarlino, a fundamental C could, through the principle of co-vibration, generate the tones F, A $\flat$  and C. While Zarlino's views preceded the common practice period and contributed to the then-emergent principles of tonality, the work of Schröder, Riemann, and others marked the end of this period and contributed, in unforeseen ways, to the

decline of these principles. Not surprisingly, Riemann identified Zarlino's idea as the starting point of his own history of harmonic theory, praising him for "discovering" *harmonic dualism*, the "two possible forms of harmony" (1921, 506). Scott Burnham argues that Zarlino's understanding of major and minor had little to do with the nineteenth-century concept of dualism, and that Riemann selectively read dualism into Zarlino's work in order to justify the dualism which was the foundation of his own theory (1992, 8). In any event, Riemann chose to emphasize Zarlino's identification of major and minor as inversionally related and, in contrast, criticized Zarlino's adherence to the figured-bass school, claiming that the development of dualistic harmonic theory was thus hampered (1921, 425). According to Riemann, it was not until the late nineteenth century that dualism was rediscovered as axiomatic to harmonic theory. Thus he mapped a history of harmony in terms of an early appearance, followed by the disappearance, and finally the reemergence of symmetrical inversions in the late nineteenth century.<sup>13</sup>

Much of Riemann's dualistic theory seems to have been derived from a treatise written by Arthur von Öttingen in 1866 called *Dual Development of Harmony (Harmoniesystem in dualer Entwicklung)*. Öttingen's theory of harmony rested on the idea that elements of a sonority (*Klang*) either have a common fundamental or a common overtone. The major triad represented *tonicity* because its constituents had a common fundamental, while the minor triad represented *phonicity* because its representatives all possessed a common overtone. For instance, in the phonic G chord (better known to us as the C-minor triad) C, E $\flat$  and G had a

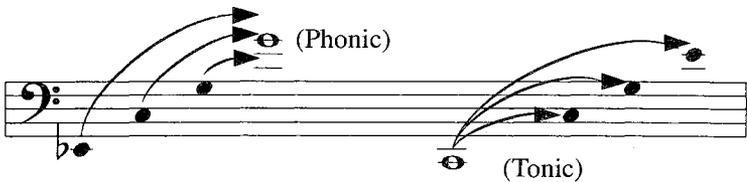
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<sup>13</sup> This version of historical progress is analogously narrated in the rise of symmetrical inversions in the fields of mathematics and crystallography (Yaglom, 1988).

common overtone of which they were fundamentals, while the constituents C, E and G of tonic C (known as the C major triad) were overtones of a common fundamental. These relations are depicted in example 9. Öttingen's wording is interesting:

The tones of the major triad are common components of the tonic fundamental, those of the minor triad have a common phonic overtone (my trans., 1866, 39).

In the spirit of the dialectician Moritz Hauptmann, Öttingen posited an opposition between *Haben* and *Sein*.<sup>14</sup> The phonic constituents *have* a common overtone, and the tonic constituents *are* overtones of a fundamental. On the one hand, Öttingen thus posited major and minor as symmetrically inversional, and, on the other, he granted an ontological priority to the former. In other words, the phonic was a kind of back-formation, or an opposite projection, of the tonic.



Example 9. Tonic and phonic chords in Arthur von Öttingen's theory of harmonic dualism.

<sup>14</sup> Hauptmann proposed that major and minor existed in a condition of dialectical opposition: "The determinations of the intervals of the triad have been taken hitherto as starting from a positive unity, a Root, to which the Fifth and Third are referred. They may also be thought of in an opposite sense. If the first may be expressed by saying that a note has a Fifth and Third, then the opposite meaning will lie in a note being a Fifth and Third" (1888, 14).

## *Resistance to Theories of Intervallic Symmetrical Inversion*

The concept of harmonic dualism, whereby minor was conceived as the symmetrical inversion of major, was hotly contested. Öttingen's ideas were criticized for their emphasis on elements that could not be heard in musical practice, for their lack of empirical grounding, and for their lack of applicability to specific musical examples and to actual compositions. Ernst Mach, in 1893, maintained that the ear did not perceive the inversional relationships expounded by Öttingen:

A reversal of musical sounds conditions no repetition of sensations. If we had an ear for height and an ear for depth, just as we have an eye for right and an eye for left, we should also find that symmetrical sound structures existed for our auditory organs (in Bernstein, 1993, 388).

Twelve years later, Georg Capellen criticized Riemann in strikingly similar terms:

[The ear] rejects the inversion that is noticeable to the eye, since it hears all the tones in a simultaneity from the bottom up (in terms of a fundamental) according to a law of gravity which is also valid in music. *The external difference in direction entails a more profound difference in type* (*ibid.*, 1993, 388).

According to Capellen, any chord's constituent tones were necessarily determined from the bottom up, in accordance with the natural model presented by the overtone series. Inversional equivalence between major—historically gendered as masculine—and minor was an impossibility, defying the musical “law of gravity” upon which all tonal music was premised. Capellen's observation—that a musical structure that foregrounded symmetrically inversional relations could lead to the demise of the tonal system—

presaged the atonal musical language of Schoenberg, Berg, and Webern a few years later.

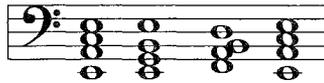
Hermann Schröder, albeit a harmonic dualist, also expressed an anxiety about the demise of diatonic music, but in an almost opposite way. Here the concept of inversion seemed to be musically axiomatic: it was instead the force of chromaticism that tended to wipe out the effect of inversion:

An inverted painting of a battle results in a chaos of color blotches, it would not be much different for the inversion of wildly moving music, particularly with some of the new [compositional] directions, in which the clear, identifiable diatonic is crowded out by the now fashionable chromatic. The inversion of diatonic tone-rows [*Tonreihen*] yields an absolutely effective contrast in identity and character; major becomes minor and vice versa. On the other hand, with the inversion of a chromatic scale, little of the contrast in identity and character, that is, of major and minor, is recognizable—a proof that symmetrical inversion is notably more effective in the diatonic than it is in the chromatic (my trans., 1902, 6).

For Schröder, the new chromaticism disconcerted the opposition between major and minor because inverted chromatic lines could not be told apart in the same way that major and minor could. As a result, he claimed that inversions should be restricted to diatonic lines. Unlike Capellen, who recognized that symmetrical inversions potentially undid the opposition between major and minor, Schröder used the logic of symmetrical inversion in an attempt to safeguard this distinction.

Current theory takes little from Öttingen's inversional relations. Not only were his speculations scientifically unsound—the undertone series has never been definitively proven—but his symmetries, engendered by harmonic dualism, gave rise to differences that were incommensurate with the tonal syntax of actual musical practice. Under this reading, phonicity does not apply to any music of the time,

and Öttingen's project amounted to a rationalization of minor harmony that essentially failed to provide insight into music. Where musical examples existed at all in Öttingen's writings, the doublings were strange and the progressions unusual. Example 10 was one such example.



Example 10. Öttingen's characteristic cadential figure in  
(a) tonicity and (b) phonicity.

### *Symmetrical Inversion in Tonal Music*

On both factual and political grounds I would contest the view that Öttingen's inversive symmetries do not apply to actual musical examples of the time, as well as the idea that some things cannot be *heard* because their theoretical formulations lack empirical proof; but the task of substantiating these claims with sufficiently wide-ranging and detailed analyses of late nineteenth-century musical works within Öttingen's terms would take me beyond the scope of this essay. Bernstein points to studies that illustrate symmetrical interval relationships in the music of Ludwig van Beethoven, Franz Schubert, Frederic Chopin, Richard Wagner, Franz Liszt, and Gustav Mahler (1993, 378). Perhaps Schoenberg's brief analysis of Beethoven's String Quartet, op. 135 in F Major in "Composition with Twelve Tones," which illustrates a variety of intervallic "mirror forms" of a kind of "basic set," is a paradigmatic example

(1975, 220). Furthermore, several works by Ferruccio Busoni were influenced by Bernhard Ziehn's views of symmetrical inversion. Busoni's *Fantasia Contrappuntista*, perhaps the best known example, was completed the year Busoni met Ziehn in America, 1910. To these examples I want to add a few observations about Brahms. There is little reason to believe that Brahms was not well acquainted with the kinds of harmonic formations produced by symmetrically reflecting interval patterns. For example, in his technical studies for the piano, left and right hands frequently play just such symmetrically unfolding patterns,<sup>15</sup> while, in his Intermezzo in E Minor, the high level of dissonance seems to derive, in part, from a consideration of intervallic symmetry. In other words, bass and treble reflect each other almost as if in a mirror, resulting in some wayward downbeat harmonies (see example 11).<sup>16</sup>

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<sup>15</sup> In his *System der Übungen für Klavierspieler*, Ziehn also composed symmetrically inversional exercises for pianists. This afforded equal facility in both hands, and suggests that the concept of symmetry was also linked to a concept of the human body. Johann Wolfgang von Goethe's *Scientific Studies*, which applied the notion of symmetrical "polarity" to a wide variety of natural phenomena, was the scientific background to this kind of link.

<sup>16</sup> It might be interesting to note that this almost experimental chromaticism takes place in the formal context of Renaissance and Baroque simplicity. The straightforward rounded binary form provides the framework for the radical harmonic, metric, and tonal ambiguities. (For instance, in keeping with tradition, the B section (mm. 11-28) is based on the dominant (B major), but instead of returning to the tonic, the music suddenly takes a turn to the subdominant in mm. 29 ff.) Like Webern's late music, then, Brahms's densely structural experimentation is contained within a simple historical form. Contemporary music theory concerned with the concept of symmetrical inversion also often referred to music before the eighteenth and nineteenth centuries. Ziehn, for example, claimed that his theory of symmetrical inversion was derived from a study of Renaissance counterpoint, notably the strict symmetrical melodies (unfettered by the demands of tonality) produced by the technique of *contrarium reuersum*. Riemann's appraisal of Zarlino is relevant in this respect as well.

Andante con grazia ed intimissimo sentimento

1. 2.  
*p dolce*

Example 11. Brahms's *Intermezzo in E Minor*, opus 116, mm.  
1-12.

Not as immediately apparent is the extent to which Brahms might have elaborated phonically conceived harmonic progressions without sounding their mirror inversions. While Öttingen's phonically conceived harmonic domain yields odd progressions and doublings in its chords, it may go some distance in explaining the peculiar syntax of some of Brahms's late music. For example, downwardly projected harmonic formations can usefully be mapped in his Clarinet (or Viola) Trio in A Major, op. 114 (1891), the *Intermezzo* in B Minor, and the String Quintet in G, op. 111 (1890). In the String Quintet the first movement is permeated by phonic cadences, in which the dominant is replaced by the half-diminished chord.

Thinking phonically also explains the structural use of the tonic six-four that marks the formal divisions of the first movement (such as the beginning of the first and second subjects). Recall that Öttingen's phonic cadence (depicted in example 10 above) ends with a six-four chord that is preceded by what in traditional functional terms is called a "half-diminished" chord on  $\hat{2}$ . The prevalence of the half-diminished chord (a chord whose very name now becomes ambiguous) throughout the movement, and particularly in those positions where a dominant is called for in terms of tonal syntax, becomes coherent in a different manner when read this way.

The phonic framework allows us to hear other passages in the movement differently as well, such as the strikingly colorful progression in mm. 8 to 9 and 10 to 11. Once again, the sudden modulation to B major is effected on the third beat of m. 7 by a half-diminished seventh on  $C\sharp$  that moves to a six-four on I. Even the characteristic leap of a fourth in the bass (sounded here by the second viola) from  $C\sharp$  to  $F\sharp$  rhetorically gestures towards a perfect tonal cadence, but elaborates instead a phonic cadence. There are many ways of interpreting the progression. It could be conceded that tonal norms are momentarily disrupted here, and that it is the descending chromatic line in the second violin, beginning on  $A\sharp$  in m. 8 that ultimately drives the passage forward.<sup>17</sup> Alternatively, in traditional functional terms, the passage can be taken to pass in B major (V of vi) from I (six-four) to V to ii to iv (with a lowered third) to I. Perhaps the iv chord with flatted third suggests a concealed invocation of B minor (as the chromatic descent intermittently sounds the flattened seventh

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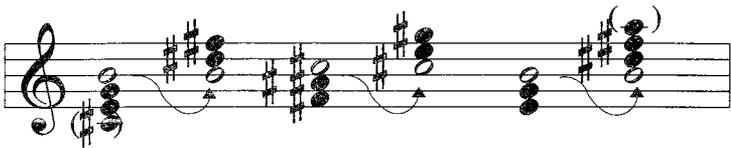
<sup>17</sup> This line is continued after passing through an octave coupling in m. 9 and ending on  $E\flat$  three measures later. The local contrapuntal scoring suggests such a linear projection.

and sixth degrees of the descending melodic minor scale). The different suspension situation in the parallel progression in mm. 10 to 11 casts still another reading. If the passage is taken as a sequence of tonic/dominant relationships in descending whole tones, the progression (beginning in m. 10) would read I to V in the momentary keys G, F and E $\flat$  respectively. While this hearing produces a consistent pattern, it also renders the tonic highly unstable.

If mm. 8-9 are heard as phonically in F $\sharp$  instead of as tonically in B, the progression would read: upside down "i," "iv," "VII," "V," "i". The phonic F $\sharp$  is strikingly unambiguous. In fact, what was an anomalous iv with flatted third in tonicity becomes the "dominant" function with a lowered leading note G-natural, or, more correctly, a leading note G-natural raised in inverse pointing towards the root-tone F $\sharp$ . Reading upside down thus results in the more economical account of the passage: phonically there are no anomalies. In other words, the passage, for all its non-diatonic chords is arguably not non-diaphonic. Also, the phonic progression is a stock i, iv, V, i (albeit chromatically inflected) while the tonic progression is more complicated, leaping back to I from iv with a lowered third. It is as if the inverted progression in F $\sharp$  can make sense of the right-side-up progression in B.

Paradoxically, this phonic F $\sharp$  is a minor triad in phonicity (or a major triad in tonicity). This observation extends Öttingen's model beyond the purview of theorizing minor-as-phonic (or major-as-tonic), and recognizes instead the musical license that allows both modalities to be articulated as either minor or major. But even if we remain strictly within the terms set by Öttingen, the progression is as readily understood in terms of his basic rules for chord transformations as it is in terms of traditional tonal syntax. In his theory of chord connections, Öttingen described a

progression between two chords that were oppositely derived—that is, a move from phonic to tonic or vice versa—as *antinomic*. A special case of antinomy involved tonic and phonic chords that were built on the same pitch, such as the upwardly projected C major triad along with the downwardly projected F minor. Such a chord relation was termed “reciprocal” and amounted to what Riemann termed *Wechselwirkung*. The progression under discussion elaborates just this special case of antinomy (see example 12).



Example 12. *Wechselwirkung* in Brahms's *Quintet in G*, opus 111, mm. 1-12.

Ignoring the bracketed notes in the diagram, the progression—beginning now on the last beat of m. 7—can be construed as a chain of *Wechselwirkung* relations. In the context of the progression as a whole, the bracketed notes, representing sevenths in their respective formations, can be read as a further symmetrical articulation marking the enclosure of the progression.<sup>18</sup> Thus, the symmetrically inverted passage in F# is equally, if not more, plausible than the traditional tonal passage in B. Perhaps phonicity even suspends

<sup>18</sup> It might also be argued that this progression is a series of *Ganztonwechsel* relations beginning with B Major on the downbeat of m. 8. Such a pairing, which brings to the ear the implied 6/8 meter, would not strictly change the argument. Also, the addition of sevenths at the peripheries of this progression is not far away from Riemann's addition of what he called “characteristic dissonances” to the subdominant and dominant in cadential progressions.

and substitutes for tonicity in these places.<sup>19</sup> At the very least, I hope to have suggested that it is highly unlikely that considerations of symmetry and symmetrical inversion played no role at all in the music of Brahms as well as other music of the late nineteenth century. In fact, the Öttingen-Riemann perspective may contribute significantly as a model for understanding some of the different kinds of chromaticism that appear in the music of this period. As a result, this paper narrates music's turn-of-the-century transition into modernism in terms of shared compositional procedures—symmetrically inversional operations amongst them—instead of adopting the more widely-held view that this transition involved a saturation of chromaticism or an imperative to avoid the tonic. In other words, by marking certain formal affinities between tonal syntax, as it came to be understood in the late nineteenth century, and early serial procedures, new light is shed on the nature of the stylistic gap between them.<sup>20</sup>

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<sup>19</sup> There are other places in the movement that can be productively read in a phonic terrain, such as, for example, the uniquely quiet passage in the heart of the development (mm. 89 to 94), which can be construed as an extended cadence in phonic G. Phonicity is also suggested on the surface where Brahms elaborates motives through inversion. Instances include the start of the recapitulation in m. 106, where the opening ascending motive in the cello is presented in its descending form in the violins, and the hypermetrically displaced descent on the second and third beats of mm. 9 and 11, which ascends in m. 113. Finally, Brahms frequently builds triads from the top down, which suggests a phonic construction of the chord. In m. 79, for example, the cadence in G (the final tonic stated as an open octave) is immediately reinterpreted as the third of an E-flat major triad by means of a downwardly projected addition of chord tones.

<sup>20</sup> In an article entitled "Inversional Balance as an Organizing Force in Schoenberg's Music and Thought," David Lewin also attempts to correlate notions of inversional balance with aspects of tonality. He shows, for example, how Schoenberg employs inversionally balanced "areas" in ways that relate to key

## *Symmetrical Inversion in Nontonal Music and Its Relation to Music Theory*

Arguably, it is just these, strictly speaking non-tonal, criteria for organizing musical material that found a more concentrated expression in the work of Webern and other modernists.<sup>21</sup> Much of Webern's early atonal work can be interpreted in terms of symmetrically inversional strands that coexist in the music, rather than substitute for one another.<sup>22</sup> In Öttingen's parlance, one might say that Webern's sustained presentation of both "phonic" and "tonic" aspects simultaneously effectively collapses both modalities, or better, it converges in atonal musical space. Hence, the tonal system falls away and the unfolding of symmetrical inversions in themselves comes to the fore. Let me explain briefly with an example from Webern's Pieces for Piano and Violin, op. 7.

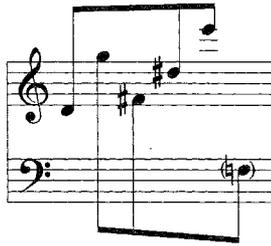
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areas in tonal music. Lewin also points out that, in various important ways, the tonal system is based on inversional relations. Since the constituents of the subdominant cannot be generated by the overtones of a tonic note, it is posited by inversion: "Tonic-to-subdominant *inverts* the relation of tonic-to-dominant, and the force of the tonic involves its central character, as mediating between upper and lower dominants" (1968, 2-3). Lewin's ideas have a precursor in Riemann, whose theory of tonal functions centered around essentially three primary *Klänge*—tonic, dominant, and subdominant—that existed in a symmetrical relationship with one another. Although I identify another trajectory from tonality to atonality via the late nineteenth-century theoretical work on symmetrical inversions particularly as they described an intervallic equivalence between major and minor sonorities, Lewin's observations contribute to a similarly focused history of relations between these aesthetic periods.

<sup>21</sup> In his "Symmetrical Formations in the String Quartets of Béla Bartók" (1955), for example, George Perle describes symmetry as an important stylistic aspect of Bartók's music.

<sup>22</sup> Bruce Archibald, for example, demonstrates the symmetrical structure of some of Webern's atonal music in his article "Some Thoughts on Symmetry in early Webern: Op. 5, no. 2" (1972).

The last piece of op. 7 begins with an almost randomly ferocious gesture in the violin. But, in fact, the gesture is comprised of two interwoven chromatic lines, one ascending, the other descending, that are sounded across the octave. That is, D leads to D#, which in turn “leads” to E, and G “leads” to F#. If this chromatic voice-leading were logically continued we might expect F next, a pitch that would yield a symmetrically inversional hexachord (012345), but a pitch that cannot be played on the violin (see example 13). The one other way that the opening (01245) could become inversionally pitch symmetrical is with the addition of G#, which is exactly what sounds next in the violin in m. 3 (see example 14). This produces an 012456 hexachord that is symmetrically inversional around an F (or B) axis.



Example 13. The symmetrically inversional 012345 hexachord in Webern's fourth piece for piano and violin, opus 7, m. 1.



Example 14. The symmetrically inversional 012456 hexachord in Webern's fourth piece for piano and violin, opus 7, mm. 1-3.

These two pitch-classes are heard next in the violin line.<sup>23</sup> In the meantime, the piano part in mm. 2-5 symmetrically unfolds chromatic tones around an A $\flat$  (or D) axis.<sup>24</sup> This is particularly audible in the right hand, where C $\sharp$  and E $\flat$  (symmetrical around A $\flat$ ) move back and forth by chromatic step to and from B and F respectively, while A $\flat$  is sounded throughout. Below, the outer voices of the left hand also oscillate in stepwise motion, while the middle voice holds D, the other axis of inversion, in a parallel drone. By the time the phrase is completed (m. 5) the total chromatic collection (except for B $\flat$ ) has appeared. In mm. 5-7 a new chromatic collection (precisely symmetrical around B $\flat$ ) is elaborated, and so on until m. 10. In the final section marked *rubig* (calm) the sonorities are all already inversions of themselves.<sup>25</sup> To sum up, then, this piece's pitch structure can be adequately described in terms of symmetrical unfoldings of various chromatic lines around shifting inversional cen-

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<sup>23</sup> The F $\sharp$  in m. 4 also does not undo the inversion of the hexachord as it simply repeats a pitch class.

<sup>24</sup> Notice how, in the violin line G $\sharp$ /A $\flat$  was part of a line folding around axis tones B and F, while in the piano right hand the G $\sharp$ /A $\flat$  is the axis tone of B and F. It is as if the sense attributed to the three pitch classes has been inverted.

<sup>25</sup> The first four pitch classes in the piano in m. 11 recall the opening 0145 tetrachord. An analogous 01245 is formed with the addition of A, which together with C $\sharp$  in the violin yields the inversionally symmetrical 012456. The two chromatic lines (still articulated across the octave) now interlock with one another. The piano pitch classes in mm. 13-14 comprise the symmetrical 0167 collection, while the *sul ponticello* figure in the violin is comprised of two symmetrically inversional tetrachords: 0145 and 0156. The combination of all the pitch classes sounded in m. 13 in the piano and the *sul ponticello* figure results in the symmetrically inversional 01234589, while the simultaneity on the last beat of the penultimate measure is a symmetrical 0158. Finally, the piano is cut off in the last measure, leaving a fragment of the *sul ponticello* figure to complete the piece. Even this fragment is a symmetrically inversional 0156.

ters—a practice that prefigures the more precisely symmetrical syntax of Webern's later twelve-tone music.

Like some of the music of Brahms, Webern's atonal music embodied substantial aspects of the theoretical concept of symmetrical inversion prevalent in contemporary music theory. But Webern's musical elaboration of this concept produced a result so different from Brahms's that it marked a substantial aesthetic break. Brahms's harmonic language, where phonicity still operated as a replacement for tonicity, gave way to atonality in Webern's simultaneously unfolding symmetrically inversional syntax. In this respect, then, Webern was working with one of the same conceptual forms that Brahms used but in a context devoid of the empirical content that had been its *raison d'être*. For the purposes of this essay, the crucial point is that major and minor seem to have collapsed in music that mapped inversional trajectories. Ironically, this emphasis on symmetrical inversions emerged out of the scientific imperative to ground the minor sonority in empirical fact.<sup>26</sup> Thus, the desire by Öttingen, Ziehn and Schröder to derive the minor sonority from the immutable undertone series—the mirror inversion of the overtone series—paradoxically heralded the undoing of major and minor. Schröder was, in fact, hostile towards the “new chromatic” music, and harnessed acoustical claims about the scientific

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<sup>26</sup> Schröder wrote in 1902: “Every true art creates out of nature, she is and remains her best teacher. Unfortunately, the musicians are too little concerned with acoustics, with the nature of sound, as the original source of our art.... In sound we find the sonority with its aliquot parts, which served our tonal system as a basis, and in the symmetrical inversion of the sonic pillar [we find] its perfect opposite: There sounding together, here silent and concealed (latent), there major, here minor, there shadow, here light, there life, here death, etc.” (1902, 4-6). In this schema, the difference between major and its inversionally symmetrical minor followed naturally from a proper sensitivity to the role of acoustics in music.

truth of symmetrical inversions to safeguard diatonic music, unaware that symmetrical inversions had the potential to undo the very system he aimed to protect. Capellen, on the other hand, recognized this disruptive potential and warned against it in his critique of harmonic dualism.

This is not to say that Webern was hostile to music theory's empirical stance or that he considered his work to be unscientific. On the contrary, as mentioned at the outset, he felt that his works were beholden to the "unifying laws" (1975, 56) of nature, and that "when [the] true conception of art is achieved, then there will no longer be any possible distinction between science and inspired creation. The further one presses forward, the greater becomes the identity of everything, and finally we have the impression of being faced by a work not of man but of Nature" (1975, 56). Webern's appeal to scientific progress was concerned with nature's laws understood not as providing a scientific distinction between perceptions of oppositely projected constellations, but as unifying these perceptions, recognizing them in terms of variations of the same idea. A musical idea and its inversion may have appeared distinct on the surface but were, in fact, presentations of the same "primeval form," which, as given by natural law, "applies to every living thing [and] is at the bottom of everything" (1975, 53). In Webern's world, science thus unified both living things and musical ideas—whether retrogrades or inversions—even if they were different in outer appear-

ance.<sup>27</sup> In short, Webern argued that symmetrically reflecting phenomena in music—no less than in nature—were, in fact, ontologically equivalent.

In Webern's assessment then, Öttingen's attempt to grant a privilege of prior presence to the major triad would be rendered non-pertinent by the fact that the minor triad was its own reflection. Just as, in Öttingen's terms, the constituents of the major triad *are* the overtones of a common fundamental, while the constituents of the minor triad *have* a common overtone, so too, when the model is that of inversion, does the fundamental of the major *have* the constituent overtones of its triad, while the constituents of the minor triad *are* fundamentals of a common overtone. As such, the major triad is rendered originarily and essentially a symmetrical reflection; it is always-already the inversion of its inversion. In this play of representation the point of origin is lost. As Jacques Derrida might say, "There are things like reflecting pools, and images, an infinite reference from one to the other, but no longer a source, a spring. There is no longer a simple origin. For what is reflected is split *in itself* and not *only* as an addition to itself of its image" (1976, 37). In this reading, it is not possible to tell whether overtone or fundamental (and thus whether major or minor) is conceptually prior.

What I am suggesting is that Webern's compositions performed a kind of deconstruction of the opposition between major and minor that was particularly significant

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<sup>27</sup> It is worth noting that Goethe, to whom Webern's views of science were significantly indebted in this regard, understood the physics of the relationship between major and minor keys as a "polarity in the theory of tone" (1988, 302). For Goethe, "The basic principle of both: the major key created by climbing, by an acceleration upward, by an upward extension of all intervals; the minor key by falling, by an acceleration downward. (The minor scale extended upwards would have to become a major scale)" (1988, 302). Webern's admiration for Goethe, amply articulated in his correspondence with Berg, is well-known.

Ulrichs's versions of the invert— were “naturally attracted” to men and women respectively and were not “acting contrary to nature” (1984, 36). Resisting the view that *inversion* was “eccentric,” “melancholic,” or “perverse,” Ulrichs argued that inversion was “deeply rooted in human nature” (1984, 77-78). The *Urning*, he claimed, “act[s] according to his own nature...following not only his nature but the nature of his own kind” (1984, 37). Recalling the work of the harmonic dualists, we note that the concept of symmetrical inversion challenged both the unnatural basis of minor harmony and mode and the irreducible opposition between feminine and masculine poles of affective identification. Relatedly, the concept of sexual inversion challenged both the unnatural basis of same-sex sexual desire and the irreducible opposition between feminine and masculine poles of sexual identification. To idealize a little, minor shifted from being “derivative,” “lamenting,” or “frenzied” (in the eighteenth-century figuration) to being a phenomenon grounded in the natural undertone series (in the late nineteenth-century figuration), while same-sex sexual desire shifted from “perverse,” “melancholic,” or “eccentric” to a natural inheritance (at least fleetingly) in these accounts.

Second, the concept of inversion involved a dual gender identity at its empirical core, which was often described in terms of a third category. For example, Ulrichs's *Urnings* and *Urningens*, whereby a woman's soul coexisted in a man's body or vice versa, were a kind of “third sex.”<sup>29</sup> Ulrichs explained that the invert “is not a man, but rather a kind of feminine being when it concerns not only his entire organism, but also his sexual feelings of love, his entire natural temperaments and his talents” (1994, 36),

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<sup>29</sup> Similarly, Edward Carpenter explained inversion in terms of an “intermediate type” between opposite genders in 1918.

and simultaneously that *Urningens* “are not fully...women [and] that [they] are similar to men because [they] assume the masculine role in society and because [their] capacity for work is the same” (1994, 36). The invert was thus either both woman and man or neither woman nor man. Instead, the male body coexisted with the female soul and vice versa. Ellis echoed this kind of gender reversal, claiming, on the one hand, that in behavior “the male invert frequently resembles the normal woman” (1975, 108) and, on the other, that “the chief characteristic of the inverted woman is a certain degree of masculinity” (1975, 94). But at other times, Ellis claimed the opposite. For example, in the context of disputing Ulrichs’s claims, Ellis wrote, “To assert dogmatically that a female soul, or even a female brain, is expressing itself through a male body...is simply unintelligible. I say nothing of the fact that in male inverts the feminine psychic tendencies may be little if at all marked” (1975, 132). Therefore, the invert both did and did not resemble the opposite sex at different places in Ellis’s text—again, s/he was either both woman and man or neither woman nor man. For Ellis, the invert’s biological identity was the result of possessing an equal number of quasi-genetic masculine and feminine traits, called *germs*, in adult life. While this symmetrical distribution of traits existed in all human organisms at the inception of the embryo, the invert was the being whose germs were incapable of “killing out those [germs] of the other sex” (1975, 132-33) in later life. In other words, Ellis’s organism at conception contained for all human beings “about 50 per cent of male germs and about 50 per cent of female germs” (1975, 132), and the invert’s germs, whose male or female components failed to “assume the upper hand” (1975, 133), remained, by implication, divided in later life. Empirically speaking then, the invert’s point of origin, as

for all human beings, was split in equal halves. Conceptually speaking, the invert's poles of identification were held in a symmetry that cut across gender hierarchy.<sup>30</sup>

It should be noted that the gender symmetry imagined in these accounts of sexual inversion had a political objective. From the start, authors used the notion of sexual inversion to give public voice to increasingly pathologized and criminalized groups of people. Ulrichs and Carpenter's writings were as much manifestoes as theory. Ulrichs, for example, proclaimed:

I am an insurgent. I decline to accept what exists if I believe it is unjust. I am fighting for a life free from persecution and scorn. I urge

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<sup>30</sup> Many commentators have remarked on the constitutive force that the terms *homosexuality* and *heterosexuality* have for one another. For example, in *Between Men: English Literature and Male Homosocial Desire*, Eve Kosofsky Sedgwick writes, "The importance—an importance—of the category 'homosexual' comes not necessarily from its regulatory relation to a nascent or already constituted minority of homosexual people or desires, but from its potential for giving whoever wields it a structuring definitional leverage over the whole range of male bonds that shape the social constitution" (1985, 86). Judith Butler, in "Imitation and Gender Insubordination" argues for an understanding of gender and heterosexuality as imitations which lack originals: "The origin requires its derivations in order to affirm itself as an origin, for origins only make sense to the extent that they are differentiated from that which they produce as derivatives. Hence, if it were not for the notion of the homosexual as copy, there would be no construct of heterosexuality as origin" (1993, 313). Without denying the potential for this kind of deconstructive critique, it is significant that, in Ellis's understanding of the organism's structure at conception, a symmetrical relation lay not only conceptually, but also empirically, at the origin. Thus the question of deconstructively marking the constituent derivative term in the opposition may not even arise: a gender symmetry is posited at the core. Also, in its as yet unformed state, Ellis did not specify which of the organism's gendered germs killed the other. To be a non-invert required only *that* either were so killed. In effect, the female body in this empirical scheme was thus figured less in terms of the male person than in terms of a process of self-emergence. The same applied to the development of the male person. Neither gender necessarily assumed precedence.

the general public and the state to recognize Uranian love as equal to congenital Dionian love (1984, 109).

The discourse of sexual inversion gave an insistent voice to the “love that dare not speak its name” decades before Lord Alfred Douglas coined the phrase. As a discourse of self-naming, inversion theory actively engaged a debate during a period in which sexuality was not publicly discussed as such.<sup>31</sup> Weeks, for example, argues that the question of lesbianism remained “silent because unthinkable” (1989, 93) during the Victorian era. In England in 1889 the Director of Public Prosecutions expressed concern about just such a public voice, noting “the expediency of not giving unnecessary publicity” (1991, 201) to cases of sexual indecency. Paradoxically, the Director’s concern for public silence on such matters extended to the point of permitting “private persons—being full grown men—to indulge their unnatural tastes in private” (1991, 201). Arguably, inversion theory partly broke this public silence.<sup>32</sup> The empirically given mirror relationship between genders was more readily accommodated in theories of inversion than in later theories of homosexuality, a fact that may account for the short life-span of inversion as the concept configuring same-sex sexual desire. Not surprisingly, later sexological and psychoanalytic theorizing discredited theories of inversion (again on putatively scientific grounds), claiming that “inverts” lacked empirical proof for their assertions, which were made more in their “political interests” than in the service

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<sup>31</sup> Magnus Hirschfeld founded the *Scientific Humanitarian Committee* in Berlin in 1898 to agitate against social and legal prejudices against same-sex sexual desire.

<sup>32</sup> The informing context of these remarks is the Labouchere Amendment of 1886, which criminalized acts of gross indecency committed by men irrespective of whether they took place in public or in private. It stands to reason that Ellis’s *Sexual Inversion* was initially banned in Britain.

of “science.”<sup>33</sup> The emergence of the modern homosexual—a psychoanalytic concept thoroughly mediated by evolutionary tropes that produced virulent asymmetrical binaries on the terrain of both gender and sexual orientation—in this later body of theory should be considered against this background.<sup>34</sup>

It is likely that the political implications of radical gender disturbance in inversion theories may have encouraged their revision into homosexuality. For Freud, the aspects of inversion theory “which were formulated without regard for the psychogenesis of homosexuality” were precisely the “intermediate stage of sex or...‘third sex’” (1982, 60) imagined as the man’s soul in the woman’s body or vice versa. Still today, even though homosexuality has

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<sup>33</sup> In 1910, for example, Sigmund Freud rebutted the claims of inversion and third sex theorists: “Homosexual men who have started in our times an energetic action against the legal restrictions of their sexual activity are fond of representing themselves through theoretical spokesmen as evincing a sexual variation, which may be distinguished from the very beginning, as an intermediate stage of sex or as a “third sex.” In other words, they maintain that they are men who are forced by organic determinants originating in the germ to find that pleasure in the man which they cannot feel in the woman. As much as one would wish to subscribe to their demands out of humane considerations, one must nevertheless exercise reserve regarding their theories which were formulated without regard for the psychogenesis of homosexuality. Psychoanalysis offers the means to fill this gap and to put to test the assertions of the homosexuals” (1982, 60).

<sup>34</sup> Theories of homosexuality maintained the general idea of directional drives in inversion theory but lost one significant figuration. They kept the understanding of same-sex sexual desire as a turning inwards (narcissism), a turning backwards (degeneration), a holding still (a fixation or arrest), but abandoned it as a gendered turning upside-down (inversion). Psychoanalysis would treat homosexuality as arrested development and connect it to narcissism. The idea of the homosexual as a degenerate would have a long life in a wide range of scientific and popular discourses. Max Nordau’s *Degeneration* (1893) was the classic late nineteenth-century example. More generally, the decadence of *fin-de-siècle* poetry (Mallarmé, Wilde, Verlaine) and music (Schreker, Pfitzner, Strauss) was often attributed to its invocation of a sexually degenerate milieu.

been officially depathologized by its removal from the *American Psychiatric Association's Diagnostic and Statistical Manual (DSM III)*, gender non-conformity is still considered an illness and is a designated pathology: *Gender Identity Disorder*. Thus, homosexuality has been more easily "normalized" than a proliferation of gender identities in a broader patriarchal gendered hierarchy. Understanding inversion theory as merely the forerunner to homosexuality, as a medical discourse of control, or as biologically essentialist or empirically untrue, loses sight of the utopian political horizon of embodied gender symmetry.<sup>35</sup> This is where

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<sup>35</sup> The view that theories of inversion are irreducibly repressive owes much to Michel Foucault's almost axiomatic history of sexuality, which scarcely acknowledges inversion as a substantially autonomous phenomenon. Jeffrey Weeks, for example, operates wholly within this paradigm. In his *Sexuality and its Discontents*, the concept of inversion is identified principally as a "social category[y] whose fundamental aim and effect was regulation and control" (1989, 93). Weeks is suspicious of the effort to account for abnormal sexual behavior in positivist terms because "the call upon science...becomes little more than a gesture to legitimise interventions governed largely by specific relations of power" (1989, 79). For Weeks, the domain of sexuality is social through and through and the scientific claims to factuality should be regarded as uniquely repressive and implicated in dogmatic social control. It is the scientific "seeking for truth" itself, Weeks suggests, "that is the problem" (1989, 62). But the more seriously one takes Weeks's claim that this form of scientific power was "spreading its tentacles of regulation and control ever-more thoroughly to the nooks and crannies of social life" (1989, 74), the more exactly is one presented with the terms of power with which any resistance at the time was forced to negotiate. Instead of ruling out positivism *tout court* as reactionary, an investigation into resistance requires a serious look at positivist modes of thought; in this case a rethinking of the common scientific impulse grounding both sexual inversion and the inversionally configured minor sonority. Given the predominance of positivist thinking and its attendant claims to authority at this point in history, I feel a danger in anachronistically projecting onto the period current terms of the debate—the insight that "sexuality is a social construction"—and thus overlooking the authoritative terms in which nineteenth-century theorists were then debating. Problematic as it was, the positivist ethos surrounded these

Webern's atonal music, considered also as imaginative thought, may point to such a horizon.

### *Assessing Cultures of Resistance*

Like the theories of inversion, the music and thought of Webern, along with his contemporaries Berg and Schoenberg, was (and still is) frequently regarded as inverting the natural order of things. This can be gauged in the surprising congruences of the language of their respective detractors in the popular and professional domains. I cannot undertake a thorough examination of the proximity of these cultures of reproach except to note that, broadly speaking, like their contemporaneous inverts, the atonal composers were frequently charged with violations against nature. Schoenberg, for example, was presenting "the constant succession of unnatural sounds from the extreme notes of every instrument" (*Manchester Guardian*, 5 September 1912)<sup>36</sup> or Berg's music had "nothing to do with the natural enfoldment of melody" (Olin Downes, *New York Times*, 5 April 1935). Additionally, the work of these composers was considered abnormal and perverse. In Berg's music "all is calculated...to insult the esthetic sense of any normal and

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writers. In other words, if there was resistance at the time, then it would have been specific and contingent upon the cultural field within which it operated. The point is not to regard scientific findings as fact—or to grant a dichotomy between positivism and politics—but to examine the conceptual forms that guided scientific narration, to heighten the tension between these forms and facts, and finally to gauge, even rediscover, their positive explanatory power and significance by comparing the uses of the same concept in diverse contexts.

<sup>36</sup> These reproaches are largely culled from Nicolas Slonimsky's *Lexicon of Musical Invective: Critical Assaults on Composers since Beethoven's Time* (1953). The translations are his. While I am aware that this collection is neither representative nor unbiased, the terms of the listed invective remain noteworthy to the extent that an imagined normative musical behavior is recapitulated in critical discourse today.

healthy human being" (V. Gorodinsky, *Music of Spiritual Poverty*, Moscow, 1950) or "everything must be harmonically queer and perverse" (Leopold Schmidt, *Neue Freie Presse*, Vienna, 15 December 1925), while Schoenberg offered a "most unaccountable jumbling together of abnormalities" (*Musical Courier*, New York, 28 May 1913). Webern is similarly characterized: "One is reluctant to utter the word 'abnormal,' but on the other hand, one cannot assert that there is any connection [in Webern's music] with our accustomed ideas about music" (*Deutsche Allgemeine Zeitung*, Berlin, 24 May 1928).

It was not uncommon for the abnormality of these works to be articulated in terms of a psychological disorder of an often explicitly sexual nature. Berg's work had "a prevailing flavor of a highly diseased eroticism" (Olin Downes, *New York Times*, 5 April 1935), and Schoenberg's was expressing "disordered fancies of delirium" (*London Globe*, 4 September 1912). While Schoenberg's music "might deal successfully with neuroses of various kinds...I cannot imagine it associated with any healthy and happy concept such as young love or the coming of Spring" (Arnold Bax, *Music and Letters*, London, October 1951). As opposed to the happy coupling of the young heterosexual couple in the spring of their lives, Schoenberg could offer only "quasi masochistic pleasure" (*Musical Opinion*, London, July 1952). Relatedly, like same-sex sex acts, these composers' abnormality was figured as unproductive. Schoenberg's theories were held to be "stillborn" (G. Schneerson, *Music in the Service of Reaction*, Moscow, 1950), Berg's music said to be "unfertile" (Olin Downes, *New York Times*, 5 April 1935).

The emergent Darwinian evolutionary tropes, adapted to discussions of same-sex sexual desire in figures such as Max Nordau, Richard von Krafft-Ebing and Freud, were also applied to dismissals of this body of mu-

sic in almost identical terms. It too was “childish,” “infantile,” “barbaric,” “primitive,” or “a bestial racket” (Eric De Lamater, *Inter Ocean*, Chicago, 1 November 1913). In Schoenberg, “the statue of Venus, The Goddess of Beauty, is knocked from its pedestal and replaced by the stone image of the Goddess of Ugliness, with the hideous features of a Hottentot hag” (Henry T. Finck, *Musical Progress*, New York, 1923), while his theories were “calculated to destroy melody and harmony...lead[ing] to retrogression...in art” (G. Schneerson, *Music in the Service of Reaction*, Moscow, 1950). Like the invert, this music was imbued with degeneracy and arrested development.

Occasionally, the invective invoked the trope of criminality: “I regard Alban Berg as a musical swindler and a musician dangerous to the musical community. We must seriously pose the question as to what extent the musical profession can be criminal. We deal here, in the realm of music, with a capital offense” (Paul Zschorlich, *Deutsche Zeitung*, Berlin, 15 December 1925). Recalling the criminalization of all same-sex sexual activity in 1886 by the Labouchere Amendment in Britain, and the 1870 prohibitions of the same by the Prussian Civil Code over all of Germany, the body of the invert was already affixed with criminality. Posing a threat to the community on the grounds of practices that were unnatural, abnormal, perverse, degenerate, infantile, and infertile, these musicians and inverts were faced with an alarmingly commensurate criminal oratory.

This is neither to claim that hostility to both (particularly from such diverse quarters) is *per se* sufficient to establish a substantive link between them, nor to claim that these reproaches were made solely on the grounds of a dissolved gender hierarchy. Although, as we shall see, symmetrical thinking *did*, in fact, play a role in critique of a more substantial sort, at this point I wish to register on a general

level the shared tropes of disapproval in the language of their respective detractors and thus to mark the somewhat analogous awkward place these subcultures held in relation to perceived musical-sexual norms. The founding by Schoenberg in 1918 of the Society for Private Musical Performances cannot be understood apart from this public response. The secrecy surrounding the society's activities was linked to their wish to exclude any public reporting. In its statutes, Schoenberg located "normal present-day concert life" as the practice which "the society intends to keep definitely at a distance" (in Reich, 1968, 120). Thus Schoenberg identified the norm as suspicious, and publicity, even the spoken word in general, as a "corrupting influence" (in Reich, 1968, 120). Like that love, this music risked corruption by being spoken about; like that practice, this one thus sought a private performance space.

Most importantly, the conceptual form underlying both abnormalities was significantly enmeshed in the then prevalent idea of symmetrical inversion. And it is just this concept that critics today identify as having led Schoenberg and company astray. For example, echoing both turn-of-the-century newspaper reviews and the old arguments of the harmonic monists, William Thomson, in his aptly titled book *Schoenberg's Error*, argues that the idea of symmetrical inversion contributed significantly to the mistakes Schoenberg made. Imagining various triads, keys, and functions in tonal music to be in a relation of symmetry, Schoenberg "yield[ed] to the temptation of the fictional *über-unter* mirror symmetry that became the nemesis of late nineteenth-century German music theory" (1991, 45). According to Thomson, Schoenberg thus understood the tonal system within a specious *Überklang-Unterklang* structure which he took on faith from his predecessors, and then erroneously applied to his own theories. Thomson writes:

The roots of [his] concept-percept tension are manifestly traceable to Schoenberg's controlling assumptions.... For instance, the insecure perceptual basis of his "solution" can be detected in the way he perpetuates the mythic symmetry of tonality by exploitation of inversional sets. In this he derives abstraction from pure myth: the very idea of dominant and subdominant as "upper" and "lower" balances for tonic was itself a hapless fiction motivated by conceptual ambition rather than perception (1991, 193).

Once again, symmetrical inversions can be seen but not heard as such. Ironically, it is not only Schoenberg but Thomson as well who perpetuates past beliefs in his theory. Like Mach, a century before Thomson and decades before Schoenberg, Thomson also believes that symmetries are perceptually suspect.<sup>37</sup> And, like Capellen, he also believes in a gravitational force given in the harmonic series which plays a "primal role in the conversion of auditory signal into musical meaning" (1991, 122).

Thomson concludes his argument for "the harmonic series as cognitive archetype" (1991, 122) with historically well-known imagery: "The series...is decidedly bottom-heavy...and constitutes a perceptual vector, a 'pointing force'.... The experience from birth of the tonal shape—*the hierarchical shape*—projected in the harmonic series leads to a powerful part of the structural inferences of harmonic roots, the tonic pitches of audition" (emphasis original, 1991, 124). Thomson's suspicions about the perception of symmetries then echo disconcertingly familiar charges of abnormality about those who think they do hear them: he says, "like the balancing power claimed for the subdominant degree of the major-minor tonal systems, these instances [of symmetrically arranged notes] lead dubious lives" (1991, 190). Resonantly, Thomson adds, "as evolution," the resulting music without pitch hierarchy "was an ill-conceived, though pas-

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<sup>37</sup> Perhaps it should be noted here that Mach's empiricism also led him to believe that because they could not be seen, atoms did not exist.

sionately propagandized, mutation" (1991, 176). Once more, we encounter the evolutionary anomaly in Schoenberg, who, in his quest to "reject...only the major-minor conventions of his immediate past," erroneously renounced "the primal tonal archetypes bequeathed him..." (1991, 176).<sup>38</sup>

Nor has this figuration of atonal and serial music as working against "human nature" subsided in the recent media either. In an article entitled "Does Nature Call the Tune?" Richard Taruskin writes, "bolstered by solid empirical work in cognitive psychology...[Leonard] Meyer's counterparts today, increasingly aware and respectful of the mind's hard-wiring, are less circumspect in their critiques of those who ignore rather than explore human nature" (*New York Times*, September 18, 1994). Because the serialist position fails to "conform to the physics of sound," Taruskin concludes that it exhibits "the same optimism that drives all utopian thinking. It underlies the trendy academic claim that those things between our legs are not biological organs but social constructions" (*ibid.*). Biologically and cognitively hard-wired, the normal subject's hearing and sex are irreducibly fixed by nature.<sup>39</sup>

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<sup>38</sup> For differently articulated theories advancing the same conclusions, see Leonard Meyer, *Music, the Arts and Ideas* (1967), Mary-Louise Serafine, *Music as Cognition* (1987), and Helen Brown, "The Interplay of Set Content and Temporal Context in a Functional Theory of Tonality Perception" (1981). Brown empirically "verifies" the origin of the dominant/subdominant symmetry in myth.

<sup>39</sup> The emancipation of music from the implied harmonic opposition built into tonality, its new belief in the equivalence of an inversion and its original, has been met with skepticism, even by sympathizers today. For example, in his provocative article, "Beyond Analysis," Edward T. Cone examines some of the limits of twelve-tone analysis by inverting three existing pieces, Schoenberg's *Klavierstück* op. 33a, and the first and last movements of Webern's *Variationen für Klavier* op. 27, thereby generating, in effect, new pieces that mirror the originals. Because of the new "ambiguity between up and down" (1967, 42), Cone argues that structural values alone

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are not able to capture the “concrete musical values” (1967, 45) of the [right-side-up] pieces. These values can only be captured with reference to expressive, associative, and representational elements that, strictly speaking, are beyond analysis. Cone’s article is one of the early challenges to the discipline insofar as it opened a space for expressive and associative values in music research. This is a challenge that culminated, later, in the more sustained critical stance of the new musicology. But Cone is also doing something other than challenging the limits of the discipline here. For Cone, turning these pieces upside-down does not “improve on, or even...equal, the original[s]” (1967, 39). To show this, he feels compelled to draw on “concrete values” that are beyond analysis. What are these values? He calls upon “implicit tonal functions” to clarify the “concrete values” of the original (1967, 47) in demonstrating its superiority, and shows how, for example, “in Op. 33a, the V-I effect created by the bass connection B $\flat$  - E $\flat$  from the development into the recapitulation [is] an effect signally, and perhaps disastrously lacking in [the upside-down] version” (1967, 47-48). Besides effecting a host of unstable binaries (absolute vs. analytic, etc.), Cone reinstates, via his absolute values, a bottom-up auditory perception, in the very musical space that, for Schoenberg, involved an “absolute perception” that knows “no absolute [up or] down” (1975, 223). The point here is neither to assert authorial support to challenge Cone’s contention, nor to insist that tonal criteria are inapplicable in op. 33a—although what counts as a tonal criterion is far from self-evident—but to draw attention to the possibility of a mirror to the original that is not automatically inferior to it. This possibility, implicitly held out by Schoenberg, is paradoxically lost by Cone in the name of a project that aims to move beyond the purview of structural analysis. For Cone, it goes without saying that the original is superior to his inversions. Ultimately, this theoretical move clarifies the “ambiguity between up and down” (1967, 45) that he mentions at the outset of his article. There is, in the final analysis, a right-side-up, a correct “orientation” (1967, 47). Ironically, this, in many ways, recapitulates, in a later theoretical setting, the very debate surrounding Schoenberg decades before, and, to my way of thinking, offers a vision that is not likely to give rise to a theoretical approach as imaginative as the music that it is analyzing. Perhaps this cluster of analytic concepts—mirror, inversion, right-side-up—was and is embedded in a discourse of gender and sexuality and perhaps we should consider that it is just such “analysis” (whose limits Cone carefully exposes) that is provisionally, but more provocatively androgynous, asexual, even queer—an analysis that is somehow unable to tell apart an original from its inversion.

## Conclusion: Rethinking the Sexual Imaginary of Webern's Modernism

When, how and why is utopian thought wished away (in the utopian faith in the impossibility of utopia); or music charged with empirical error; or symmetrical inversions figured as either not applicable to tonal music or unhearable in atonal music?<sup>40</sup> I have argued that these moments tended to be enmeshed in the question of gender hierarchy in various ways. Unlike the symmetrical inversions employed in late nineteenth-century crystallography and mathematics, gender was explicitly situated at the respective poles of the symmetries I examined in contemporaneous music theory and sexology. Ulrichs's inverted *Urnings* and *Urnings* were constituted by the symmetrical co-existence of both female and male components in a single individual. This resulted in his, equally natural, "sexual species...a *third sex*" (1984, 36). Concurrently, major and minor, analogously gendered in traditional music theory, were increasingly regarded as nature-given symmetrical inversions of one another. In fact, the two poles were consciously marked for dissolution into a third gender category by Webern himself. In plotting a history of scales in the *The Path to the New Music*, Webern argued, first, that "accidentals spelt the end for the world of church modes, and the world of our major and minor genders (*Geschlechter*) emerged," and second, that the

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<sup>40</sup> Relating the commonly held notion that inversions do "not apply" to tonal music back to sexology, it should be pointed out, that one of Ulrichs's motivations for writing his theory was to challenge the then current hypothesis that "in our species no class of born *Urnings* exist nor could exist...no class of individuals exists nor could exist that is born with the sexual drive of women and has the body of a male, i.e., whose sexual drive is toward men." (1984, 35) Perhaps the non-existence of inversion was/is also a matter of not wanting to know. Thus Ulrichs felt compelled to let the public know.

“new music...has given up this ‘double gender’ in its progress towards a single scale—the chromatic scale” (1975, 28). Like Ulrichs, Webern thought the dissolution of gender produced a third category: “Double gender,” he claimed, “has given rise to a higher race”<sup>41</sup> (1975, 37); and elsewhere, “These two [keys, like genders] have produced something that’s above gender, our new system of twelve notes” (1975, 43).<sup>42</sup>

Embedded in the compositional method that would bring about the “dissolution of major and minor” (1975, 37) was the notion of symmetrical inversion, a technique that permitted the equal status of basic sets, the “constant mirrorings” (1975, 56) that ultimately attributed apparent differences to “variations of the same idea” (1975, 53). Webern stated, “Considerations of symmetry are now to the fore” (1975, 54). Like his late nineteenth-century counterparts in music theory, Webern thus grounded this idea in natural law and regarded the new music, paradoxically, as born out of a deep theorizing of tonality: “Precisely because we took steps to preserve to-

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<sup>41</sup> This comment, written in 1933, also has disturbing resonances with the then emergent Nationalist Socialist notion of an Aryan race. Against this, in the next section Webern identified an opposite attitude within the new political thinking to the dissolution of “double gender”: “I don’t want a polemic, but just now there’s a lot of talk about this, in connection with political developments of course, and things are made to look as if it were all something foreign and repellent to the German soul” (1975, 37).

<sup>42</sup> This kind of formulation was not unique to Webern and Ulrichs. For example, in his book *Sex and Character*, Otto Weininger advocated a kind of androgyny that lay in the future: “Death will last so long as women bring forth, and truly will not prevail until the two become one, until from man and woman a third self, neither man nor woman, is evolved” (1906, 345). Weininger’s work is a reminder that this kind of thinking should not be equated with the sociopolitical emancipation of women. On the “emancipation of a woman,” Weininger wrote, “I exclude from my view the desire for economic independence, the becoming fit for positions in technical schools, universities and conservatories or teachers’ institutions” (1906, 65).

nality— we broke its neck!” (1975, 48) Hence, tonality— or more generally, “notes [as] natural law...related to hearing” (1975, 15) were transformed from hierarchy to symmetry. Webern ended his essay with a quotation of the Latin saying:

S A T O R  
A R E P O  
T E N E T  
O P E R A  
R O T A S

which can be translated as “Arepo the sower keeps the work circling” (in Reich, 1968, 136).

Recall that Webern approximated this ideal most exactly in his *Concerto for Nine Instruments*, op. 24. On 11 March 1931, Webern wrote to Hildegard Jone about the op. 24 row: “I have found a ‘row’ (that’s the 12 notes) that contains already in itself very extensive relationships (of the 12 notes amongst themselves). It is something similar to the famous old proverb [about Arepo the sower]” (1967, No. 22, 17). In this row (B, B $\flat$ , D, E $\flat$ , G, F $\sharp$ , A $\flat$ , E, F, C, C $\sharp$ , A), the four 014 trichords appear in different orders under four operations: the retrograde at the transposition of six semitones produces the same trichords in the order 2-1-4-3 (E $\flat$ , G, F $\sharp$ , B, B $\flat$ , D, C, C $\sharp$ , A, A $\flat$ , E, F); the retrograde of the inversion around a D/D $\sharp$  (or A/G $\sharp$ ) axis produces the trichords in the order 3-4-1-2 (A $\flat$ , E, F, C, C $\sharp$ , A, B, B $\flat$ , D, E $\flat$ , G, F $\sharp$ ); and the inversion around a C/B (or F/F $\sharp$ ) axis produces the trichords in the reverse order, 4-3-2-1 (C, C $\sharp$ , A, A $\flat$ , E, F, E $\flat$ , G, F $\sharp$ , B, B $\flat$ , D). Again, this is precisely the kind of compositional situation that destroys Adorno’s desired dialectical antithesis because motivic unity is produced “of [its] own will,” and “musical meaning” is produced “from within itself” (1973,

110, 111). But, by limiting the musical relations to those that persist within the constructed compositional system, Webern is also granting music a kind of self-generating productive power that does not depend on gender difference. Such music, in which the dynamics of creation become parthenogenetic, was clearly beholden to German Idealist romanticism. Throughout *The Path to the New Music*, Webern referred to the Idea that could be revealed behind the surface chaos. Without dismissing complaints from the left against the ahistorical myth of musically autonomous illumination, it is crucial to notice that, historically speaking, the idea also illuminated a vision of dissolved gender hierarchy.

It is likely that Webern developed his notion of a third gender category with reference to Schoenberg's notion of an androgynous, asexual musical ideal. While most of his rhetoric of liberation involved the emancipation of dissonance, Schoenberg also elaborated a musical ideal that transcended the hierarchized gender dualism of major and minor. In the revision of his 1911 textbook *Theory of Harmony (Harmonielehre)*, for example, Schoenberg added the following passage:

It is true that the dualism represented by major and minor has the power of a symbol suggesting higher forms of order: it reminds us of male and female and delimits the spheres of expression according to attraction and repulsion. These circumstances could of course be cited to support the false doctrine that these two modes are the only truly natural, the ultimate, the enduring. The will of nature is supposedly fulfilled in them. For me the implications are different. We have come closer to the will of nature. But we are still far enough from it; the angels, our higher nature, are asexual: and the spirit does not know repulsion (1978, 96).

With nature as a guiding metaphor, Schoenberg advanced a music still to come that would be free of the male/female binary—a music that would be asexual and

would know only the force of attraction. It is likely that his musical aspirations towards an androgynous ideal helped fashion Schoenberg's alternatives to the tonal system. Schoenberg may have thematized this ideal in some of his written and unwritten works as well. For example, Schoenberg read and admired Honoré de Balzac's novel *Séraphita*, which tells the story of an asexual angel, and planned an oratorio setting of it.<sup>43</sup> Jennifer Shaw argues that Schoenberg had the androgynous model very much in mind in his oratorio *Die Jakobsleiter*:

Schoenberg consciously modelled [the characters of the Dying One and the Soul] on Balzac's androgynous Seraphita, whose soul ascends to heaven and is transformed into an asexual angel. Early text drafts of *Die Jakobsleiter* reveal Schoenberg's unconventional attempts to embody a Seraphita-like gender ambiguity in the roles of the Dying One and the Soul through linguistic means. In these drafts, *der Sterbende* [the dying man] alternates with *die Sterbende* [the dying woman]. *Die Seele* [the Soul]—a feminine noun in German—is written incorrectly, but deliberately, as a masculine or neutral noun, *ein Seele*. In the published libretto Schoenberg employs "Seele" without any article that would indicate the soul's gender (2000, 66).

Shaw explains that this kind of gender ambiguity and angelic asexuality is elaborated musically as well, particularly with respect to vocal timbre.<sup>44</sup> By "pushing [the Soul's] voice outside the normal soprano range and beyond the boundaries of language," Schoenberg ultimately gave voice to those

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<sup>43</sup> In 1912 Schoenberg wrote a letter to Wassily Kandinsky in which he claimed that his recently completed *Pierrot Lunaire* served as "a preparatory study for another work, which I now wish to begin: Balzac's *Seraphita*" (1984, 54). The central figure in the story (alternatively called *Séraphita/Séraphitus*), in preparation for a higher spiritual realm, is becoming transfigured into an angel. S/he is neither man nor woman or both man and woman.

<sup>44</sup> The Dying One, for instance, juxtaposes the soprano's deep chest register with *Sprechstimme* in a way that approximates what Michel Poizat calls a "transsexual" or beyond sexual" voice (2000, 67).

“aspects of a feminine soul enclosed within the psyche of the male artist-hero” (2000, 67). While she partly identifies this kind of vocalization with a conservative and old-fashioned representation of androgyny, Shaw suggests that the nontonal musical language (to which Schoenberg alluded in his *Harmonielehre*) most successfully embraced the radically asexual ideal. In other words, Shaw claims that the twelve-tone system aspired to the condition of an “asexual musical language...[that was] capable of overcoming the prejudices of [Schoenberg’s] musical heritage” (2000, 76).<sup>45</sup> In fact, as John Covach observes, the Balzacian idea of a unified realm in which there is no absolute up or down is a key concept in Schoenberg’s musical Idea (*musikalische Gedanke*) (1998, 23). Likewise, Berg’s interest in structural procedures involving mirror symmetries extends across his output, and seems to indicate an analogous conception of unified musical space.<sup>46</sup> I wish to draw attention to the affinity between this kind of thinking about musical language and the androgyny proposed by Webern’s third gender category,

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<sup>45</sup> In step with my argument, Shaw feels that those moments in Schoenberg’s twelve-tone music that exhibit certain “*tonal tropes*” are a betrayal of the “neutral Swedenborgian heaven” that is the androgynous ideal (*italics mine*, in Shaw, 2000, 83).

<sup>46</sup> The best known example of symmetrical writing is Berg’s *Chamber Concerto*, for which he supplied an analytic diagram that prominently figured the palindrome that occurs in the second movement. There are numerous studies that describe Berg’s interest in symmetries. See, for example, Robert Morgan’s “The Eternal Return. Retrograde and Circular Form in Berg,” (1991) Willi Reich’s *Alban Berg* (1965), Douglas Jarman’s *Alban Berg: Wozzeck* (1989), John Covach’s “Balzacian Mysticism, Palindromic Design, and Heavenly Time in Berg’s Music,” (1998), and David Schroeder’s “Berg’s *Kammerkonzert* and Franz Werfel’s *Spiegelmannsch*: Mirror Images in Music and Literature” (1998). Wolfgang Gratzner observes that Balzac’s *Séraphita* was much admired by Webern and Berg as well as Schoenberg (1993). Gratzner points out that, like Schoenberg, Berg had planned a musical setting of the climactic final scene of the novel (1993, 57-72).

which lay beyond music's traditional "double gender." This, in turn, closely resembled Ulrichs's "third sex," which incorporated both female and male components within a single person.

The relationship between music's androgynous ideal and the sociopolitical emancipation of women or the normalization of sexual inversion is difficult to gauge. At a time when national women's liberation movements began to organize in the Habsburg Empire, the desire for transcendent androgyny may have functioned as much as a barrier to social change as a catalyst for it.<sup>47</sup> There is certainly no direct link between the androgyny imagined by Webern and social equality between the sexes. Instead of functioning as an advocate for women becoming equal with men, such androgyny might have provided an imaginary solution to a perceived threatening social problem. By 1918, for example, the struggle for women's suffrage in Austria and Germany had finally been won. As the contemporary Viennese feminist Rosa Mayreder argued, the interest in androgyny "declares itself as a symptom of discordant conditions from which a new order can only be evolved by recognition of the new elements" (1913, 243). Webern's reference to an angelic higher race that was produced by the dissolution of major and minor in the new music may have reflected just such a desire for a new order. Schoenberg too was aware of art's role in social change and suggested that traditional beliefs about gender were outdated.<sup>48</sup> This advocacy of a new ideal

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<sup>47</sup> For accounts of contemporaneous women's movements in Germany and Austria, see Harriet Anderson's *Utopian Feminism: Women's Movements in Fin-de-Siècle Vienna* (1992), and Elaine Showalter's *Sexual Anarchy: Gender and Culture at the Fin-de-Siècle* (1990).

<sup>48</sup> Shortly after the passage about the asexuality of his musical ideals, Schoenberg wrote: "And even if our tonality is dissolving, it already contains within it the germ of the next artistic phenomenon. Nothing is definitive in culture; everything is only preparation for a higher stage of development, for a future which at the moment

that lay beyond gender should be assessed in at least two ways. Was it an artistic maneuver to imaginatively evacuate women from the political sphere? Or was it an effort to think social change— social equality between the sexes, the normalization of inversion, etc.— free from the fetters of sedimented attitudes and conventional beliefs? On the one hand, the androgyne symbolized an integration with divine being and primordial nature, and on the other, it symbolized gender parity and a deviant sexual orientation.<sup>49</sup> In assessing the politics of Webern's musical androgyny, it is important to keep this dual perspective in mind.

The point I wish to make here is that the gendered dimensions of Webern's music are not suggested by the traditional concerns of feminist and queer scholarship. Queer theory in musicology tends to focus on linguistic narrative (in the form of opera libretti, etc.) and on the non-structural dimensions of musical experience, and feminism in musicology tends to identify the abstraction of absolute music with suspicion and doubt.<sup>50</sup> In fact, the

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can only be imagined" (1978, 97). Schoenberg's model for progress is Hegelian, but his imagined dialectic is more positive than that of Adorno, for whom art can divulge truth only via negation. It is this positive aspect that leaves open the possibility that Schoenberg's solution is, in fact, more political than that of Adorno.

<sup>49</sup> These extremes may not be as oppositional as they seem. For instance, in Germany today, lesbians and gays frequently refer to themselves as *verzaubert* (bewitched/enchanted). Also, in his book *The Intermediate Sex*, Edward Carpenter associates androgyny with social equality between men and women (1918, 16).

<sup>50</sup> For example, Susan McClary exposes the "narrative agendas of absolute music" in her article on Brahms's Third Symphony (1993, 326). As is common in her work, McClary's "agendas" are identified as ideological. Generally speaking, it is disturbingly difficult to find a feminist account of absolute music that does not reach the same kind of negative conclusion. This resonates with a certain critical deafness of the new critical musicology at large. For example, Alan Street's discussion of Webern's interest in musical unity takes on the character of a self-evident dismissal (1998, 57-112). In this paradigm, it is no longer possible to make a claim about the aesthetic autonomy of music, for example, or about music's formal unity.

kind of abstraction found in Webern is regarded by an overwhelming number of commentators on the left today as reductively constraining social thought, as denying interpretative plurality, and as uncritically subscribing to the cerebral and detached fiction of ahistorical autonomy. It is as if talk of musical numbers, proportions, symmetrical arrangements, and mathematical relations has come automatically to indicate a state of music's political regression itself. Without abandoning this perspective altogether, I hope to have shown that such abstraction was less abstraction *per se* than it was a very peculiar engagement with social thought.<sup>51</sup> In fact, Webern encouraged us to engage such thought, calling for a listener "capable of imagining that music can have an idea, a thought, hidden in it" (1975, 14). Perhaps a close engagement with the embedded thought of symmetrical music, particularly in the context of the current figurations of modernism as abnormal, should give us pause.

Even though Webern, like Schoenberg and like many proponents of inversion theory in sexology, grounded his ideas in nature, we should not lose sight of either the cultural context in which such thinking took place or the historical terms available for resistance. In other words, it may be worthwhile to listen closely to the view of reality that their "laws of nature" purported to uphold. After all, could this not have been an affirmative

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<sup>51</sup> For example, I do not want to overlook the fact that the protagonists I discuss were all male, nor the fact that the project of obliterating gender can be recuperated in a patriarchal project, since the universal, or the failure to distinguish between male and female, historically may have served the interests of men. Luce Irigaray's call for "sexuate" culture in sexual difference feminism is an example of a very different kind of utopian project in relation to gender. My position tries to imagine a world without gender, or with radical gender parity, and thus takes a different route to reach the same place. Also, instead of underscoring the scope and authority of the patriarchal order, I have tried to read gender reversal as negatively constituent of, or in deconstructive supplement to, this order.

form of resistance?<sup>52</sup> Adorno's attempt to render positivism absolutely problematic becomes the problem here. In his essay on Bertolt Brecht, for instance, Adorno opposes the autonomous "atelic, hermetic works of art" to the "positivist subordination of meaning" (1977, 179). For Adorno, autonomous art, through its very "distance" from positivism, challenges its mode of "signification" (1977, 179). Thus, Adorno is committed to an opposition between science and art that Webern (and Schoenberg) did not uphold. More troubling, such a methodological commitment compels one to overlook the kind of emancipatory potential that I have identified in the work of Webern. Adorno's unshaken adherence to the argument that *all* "empathy and identification" is "illusory"—an illusion that can only be challenged by "distanced, thoughtful experiment" (1977, 182)—eliminates the possibility of a certain kind of politically progressive empathy and identification that, in turn, can jolt a different repressive signifying practice in the world.<sup>53</sup> In short, distanced, thoughtful experiment also has its critical limits, and the immediate identification of positivism with reactionary politics also has its illusions. This leads to a general problem with one aspect of Adorno's model for music criticism. By accrediting music with an intrinsic cognitive capacity, however dialectical in itself, Adorno risks shielding from earshot the

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<sup>52</sup> Fredric Jameson warns against the immediate identification of appeals to nature with the apolitical as such: "In different historical circumstances the idea of nature was once a subversive concept with a genuinely revolutionary function, and only the analysis of the concrete historical and cultural conjuncture can tell us whether, in the post-natural world of late capitalism, the categories of nature may not have acquired such a critical charge again" (1977, 207).

<sup>53</sup> This is not to say that the purely musical experience does not also disturb a habitual sense of temporal unfolding. On the contrary, by disrupting tonality's hierarchies, Webern's symmetrical structures suggest a quite different kind of world. I am trying to observe some of the gendered stakes involved in that disruption.

signifying potential of autonomous music that does not elaborate an immanent dialectic, as well as the potential political and social relevance of such music. Perhaps it could be argued that Adorno did not find social issues relating to gender disparity politically relevant enough to warrant close attention. Adorno's critique of Webern might, for example, make sense of his highly problematic take on homosexuality, which he reads largely through Freud.<sup>54</sup>

No doubt Adorno would find the sociological dialectic I am advancing here too crude, perhaps too Brechtian, and I do not want to claim that this orientation provides a solution in all problematic contexts. But to grant the symmetrical inversions in Webern's music a sonic quality that radically disorients the gendered accretions of habitual listening is also to unleash a new order of possibilities for ordering human life. While the price of Webern's vision of androgyny may have been undialectical myth and an overly strict regulative principle, the relations between tones also became radically negotiable with each new work, and one's listening ear became less assured in de-hierarchized musical space. After all, the latter was one reason why Webern and his fellow modernists were deemed unnatural and decadent. And the proximity of discursive cultures of musical and sexual thought—cultures whose participants and detractors had much in common—reveals some of the worldly stakes involved in their resistance. What was lost in the

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<sup>54</sup> In his *Political Inversions* (1996), Andrew Hewitt examines Adorno's homophobic Freudianism. Whether or not Adorno's critique of Webern is related to his sexual politics is difficult to discern. What does come to surface, however, is the potentially heterosexist bias of Adorno's brand of dialectics, which privileges an encounter between non-identical poles of an opposition. Again, the idea that identical symmetrical opposites may rupture different kinds of repression in the world is not considered a progressive option. This beckons the question: Has Adorno's "non-identity"—now obliged at every level of argument—become a formalism?

transition from the invert to the homosexual in sexology, for example, was the idea of symmetrical inversion and the promise of a certain reversibility. This is where a contemporaneous musical imagination usefully provided strategies for the undoing of oppositions.<sup>55</sup> The concept of symmetrical inversion, one of the constituting trajectories of Webern's twelve-tone compositions, produced a music that was asexual in terms of traditional gendered configurations. Having, knowingly and unknowingly, turned certain gendered conceptual categories and structuring principles upside-down and back-to-front, Webern's music became sexually androgynous (or produced a kind of "third" gender category). In such musical space there was no longer any "law of gravity" to keep things right-side-up. As Schoenberg wrote in *Style and Idea*: "In [musical] space, as in Swedenborg's heaven (described in Balzac's *Séraphita*) there is no absolute down, no right or left, forward or backward" (1975, 223).<sup>56</sup> The question is whether this musical space can be elaborated in a worldly one or not.

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<sup>55</sup> In other words, some late nineteenth-century music theories and various attendant musical compositions were able to utilize the concept of inversion to undo the gendered hierarchy of major and minor and instantiate symmetrical relations in a new musical language. Inversion in sexology was less successful, soon giving way to the lopsided homosexual/heterosexual binary in the figuring of sexuality, revealing a shift, rather than a displacement, of the masculine/feminine polarity, and unevenly doubling the telos of sexual subjectivity rather than interrogating teleological theories of sexuality.

<sup>56</sup> Again, it should be stressed that this thinking preceded Schoenberg in a paradoxical way. Schröder, the committed defender of diatonic music, wrote: "An

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inverted arabesque remains an arabesque... An inverted painted flower-piece remains a flower-piece and every single flower 'works' with equal charm.— The same applies to the inversion of simple melodies in music" (1902, 6). Schoenberg, defending "*the emancipation of the dissonance*" (1950, 105) in "Composition with Twelve Tones" produced an uncannily similar figuration: "Just as our mind always recognizes, for instance, a knife, a bottle or a watch, regardless of its position, and can reproduce it in the imagination in every possible position, even so a musical creator's mind can operate subconsciously with a row of tones, regardless of their direction, regardless of the way in which a mirror might show the mutual relations, which remain a given quantity" (1950, 113). Webern similarly imagined the relation between tones: "An ash-tray, seen from all sides, is always the same, and yet different" (1975, 53). Also, Schröder was perhaps the first theorist to talk about symmetrical inversions in terms of axes of inversion that could be either a single note or a dyad. Perhaps Schoenberg and Webern read Schröder's defense of diatonicism after all, albeit in a radically new way.

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