Rob Schultz

Melodic Contour, Musical Diachrony and the Paradigmatic/ Syntagmatic Divide in Frédéric Chopin's Waltz in B Minor

It is widely acknowledged that music is a temporal art. However, many of the most fundamental theoretical and analytical methodologies implicitly rely on an atemporal conception thereof. The pre-analytical "verticalization" of the musical foreground required for harmonic analysis in just about all of its various guises is perhaps the most familiar such instance. A more sinister example, however, can be found in melodic contour theory. Because contour segments, or csegs, by definition order contour pitches in time, they offer the illusory appearance of providing a full and accurate account of the temporal domain. However, the prerequisite ordering of pitches in register in fact employs this very same procedure. For instance, the main motive from the final movement of Mozart's Jupiter Symphony (c – d – f – e) is represented as a cseg by first numbering its pitches from low to high starting on 0; only then are these integers subsequently arranged from left to right based on their order of appearance, yielding the cseg <0132>.[1] In this way, the identity of these notes in contour space – that is, the integers to which each is assigned – is determined from a purely synchronic perspective.

However, melodies do not instantaneously appear in this fully formed state in the real-time listening experience. Rather, they unfold in successive stages as part of a diachronic process of becoming. That is, the aforementioned "Jupiter" motive appears first as the single note <c>, or the contour pitch <0>. It then emerges as the two-note ordered segment <c – d>, or <01>, and next, as the three-note segment <c – d – f>, or <012>; only then does it manifest the cseg <0132>. Traditional melodic contour theory does not implicitly account for this diachronic process, and a loss of crucial phenomenological information results.

In this paper, I propose a system of melodic contour relations that is founded upon this diachronic process of becoming. After describing the methodology in sufficient detail, I will apply it in an analysis of Frédéric Chopin's *Waltz in B minor* – more specifically, the work's earliest known source, an 1829 copy. The approach reveals an intriguing correlation between two distinct phenomenological types of contour relations and the work's paradigmatic and syntagmatic dimensions. I then conclude by briefly contextualizing these findings within Chopin's broader compositional practice.

1 Robert D. Morris: *Composition with Pitch-Classes. A Theory of Compositional Design*, New Haven, CT 1987, pp. 29–33.

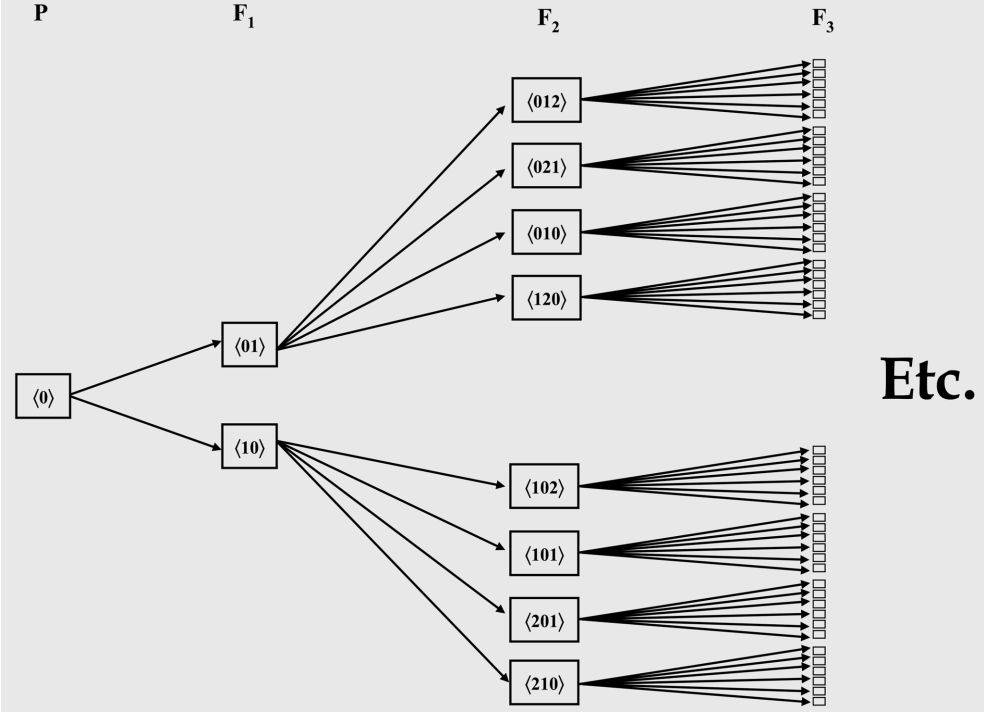

Figure 1 The Diachronic Musical Contour System

All melodies begin as a single note, which is represented as the cseg <0>, the lone member of the P, or parental generation in the diachronic contour system (see Figure 1). In contour space, the note that follows is identified only as being higher or lower than the first, and consecutive repeated notes are subsumed into a single contour pitch. Thus, the subsequent F_1, or first filial generation, contains only two possible csegs: <01> or <10>. If and when a third contour pitch emerges in the F_2 generation, <01> and <10> each produce one of four possible three-note csegs. These csegs are differentiated by the relative height of the new contour pitch with respect to *both* of the previous ones. Each of the eight F_2-generation csegs can spawn six four-note csegs in the F_2 generation, each of which in turn can generate eight five-note csegs in the F_4 generation, et cetera.

The resulting ancestry tree describes contour relations based solely on their diachronic properties. For instance, as seen in Figure 2, the most recent common ancestor shared between the csegs <0132> and <1230> is found in the F_2 generation – that is, they have the same parent, and are thus diachronic "siblings". The diachronic ancestry of the cseg <2310>, however, diverges from that of <0132> in the F_1 generation. Therefore, their most recent common ancestor is their "grandparent", <01>, making them diachronic "first cousins". The cseg <1023> is even more distantly related: its most recent common ancestor with <0132> is the P-generation "great-grandparent", <0>, rendering the two csegs diachronic "second cousins".

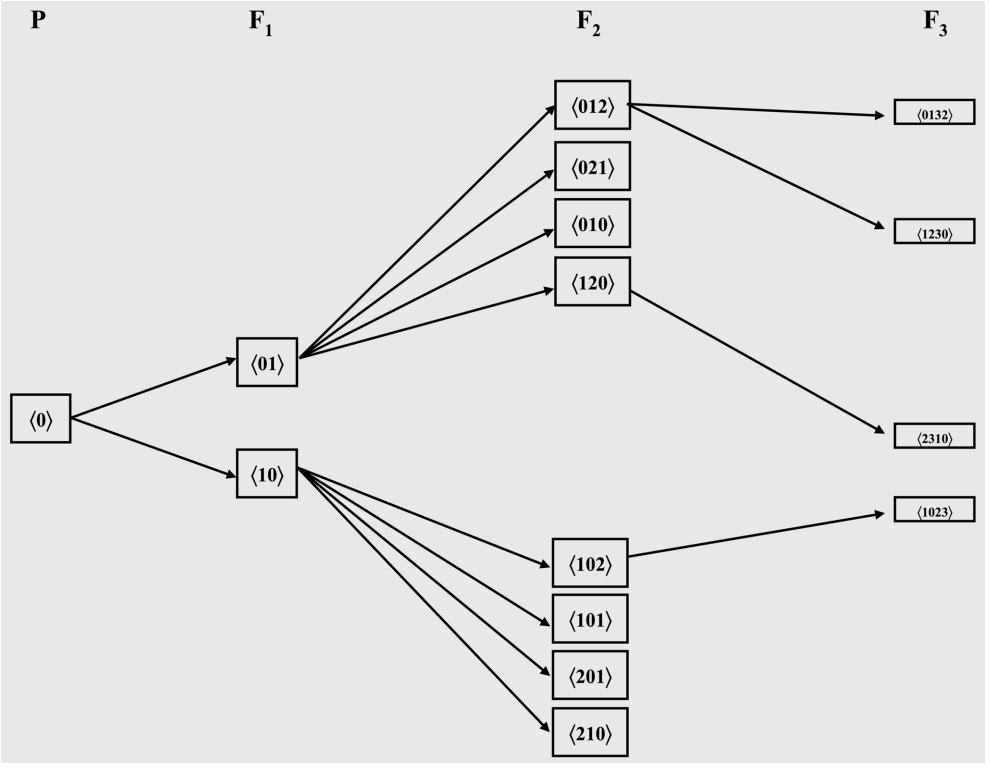

FIGURE 2 Diachronic relationships between four F_3-generation csegs

In summary, the closer the diachronic relationship, the longer the two csegs in question unfold identically to one another in their respective processes of becoming. Thus, the diachronic contour system is not based solely on the structural characteristics of csegs, but rather on the real-time phenomenological *experiences* that they induce.

Figure 3 displays the opening A section of the 1829 copy of Chopin's *Waltz in B Minor*, which consists of two eight-measure sentences that together form a compound period. The response repetition of the basic idea in measures 3–4, labeled REP[1], presents a cseg that differs from that of the basic idea itself, or BI[1].[2] Using diachronic terminology, the two csegs are first cousins, indicating that they share a common F_4-generation grandparent. REP[1] thus unfolds identically to BI[1] in contour space until the onset of its penultimate note.

The antecedent's continuation phrase begins in measure 5 with a second variant of the basic idea, labeled CONT[1]. BI[1] and CONT[1] are diachronic third cousins, but due to the discrepancy in cardinality, they are one generation removed. CONT[1] thus unfolds identi-

2 The formal terminology is from William E. Caplin: *Classical Form. A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*, New York 1998, pp. 9–12.

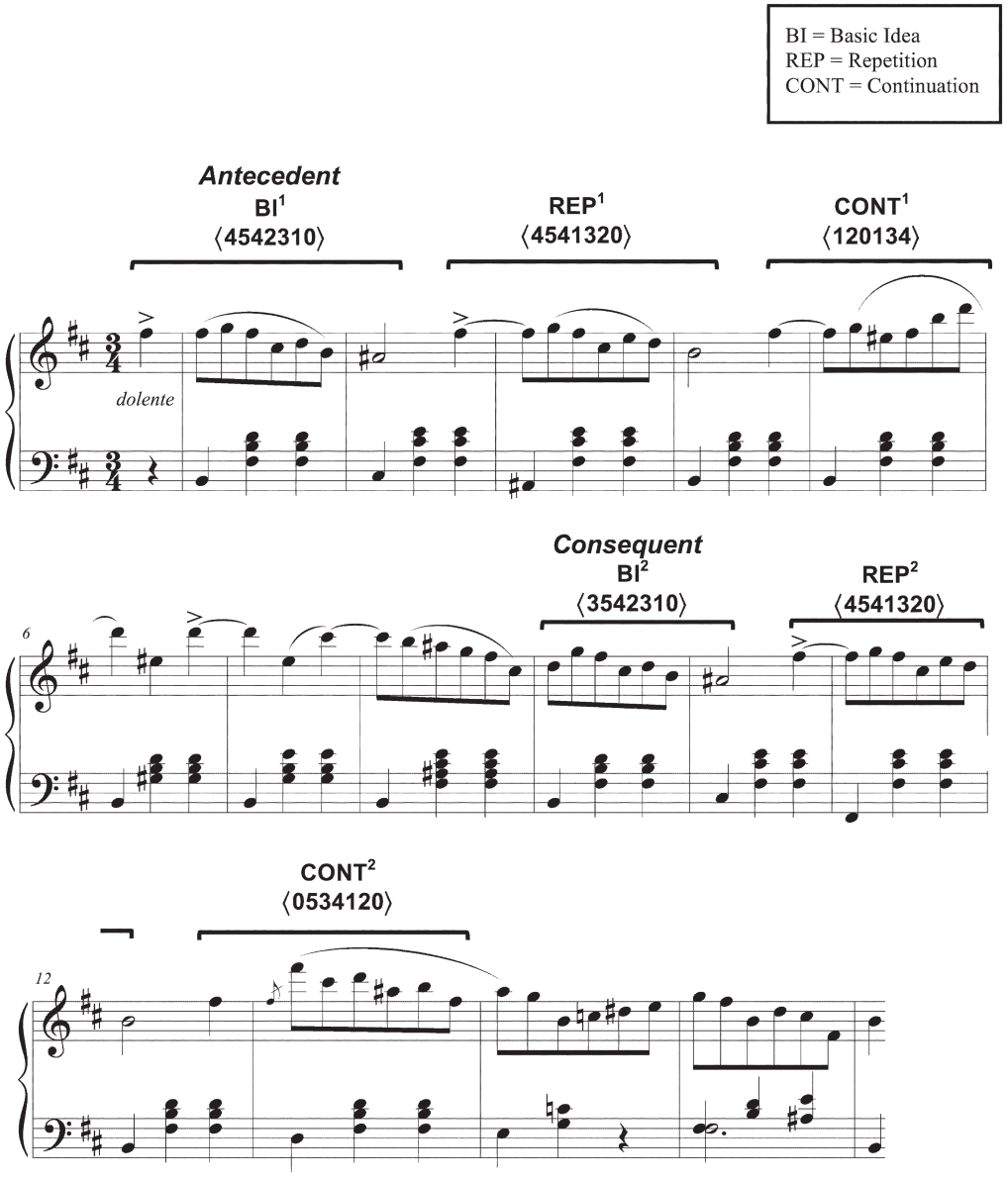

Figure 3 Frédéric Chopin: Waltz in B minor, measures 1–16 (from an 1829 copy attributed to W. Żywny)

cally to BI1 only until the F_2 generation, or the onset of its third note. The same relationship obtains between CONT1 and REP1.

The consequent phrase begins in measure 9 with BI2. This segment opens on a high d instead of an f sharp courtesy of its elision with the end of the antecedent. As a result, BI2 manifests yet another cseg variant of the basic idea. Although this opening pitch marks the only structural difference between the two, its occurrence at the very beginning of the segment renders BI2 merely BI1's diachronic fourth cousin.

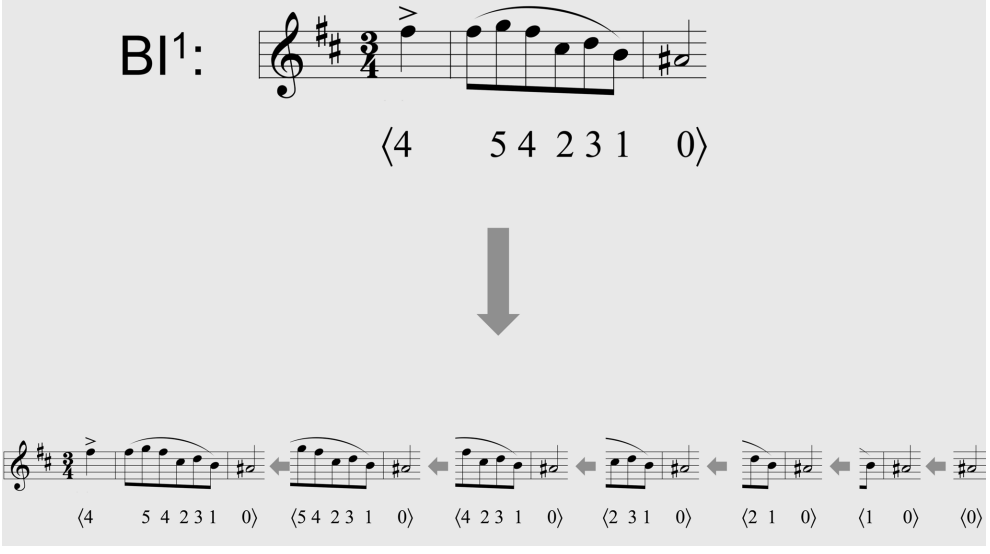

Figure 4 The *temporally proximal* ancestry of BI[1]

The close kinship that exists between these two segments therefore does not reside in their diachronic properties. Rather, it inhabits a different cognitive process – one that mirrors the diachronic process, but instead proceeds backward through a given cseg's most *temporally proximate* contour subsets, as demonstrated in Figure 4.

Under this rubric, BI[1] and BI[2] are not fourth cousins, but rather, siblings. Therefore, BI[2] emerges as distinct from BI[2] early in its process of becoming, as reflected in their rather distant diachronic cseg relationship. However, the two csegs do share an extensive number of temporally proximate subsets, and thus bear a very close relationship in that respect. In contrast, REP[1] is BI[1]'s diachronic first cousin, and as such, emerges as distinct significantly later in its diachronic unfolding. Its proximal identity to BI[1], however, extends back only three generations, rendering the two merely third cousins.

Figure 5(a) catalogs the diachronic and proximal cseg relationships that occur *within* the antecedent; that is, in the piece's *syntagmatic* dimension. Note that all three csegs are closer diachronic than proximal relatives. However, the relationship between BI[1] and BI[2], which occurs in the *paradigmatic* dimension, exhibits the opposite tendency: as seen in Figure 5(b), their csegs are closer proximal than diachronic relatives.

This correlation between the diachronic and syntagmatic, on the one hand, and the proximal and paradigmatic, on the other, is not convincingly borne out in the remainder of the consequent phrase. As also indicated in Figure 5(b), REP[2] is identical to REP[1], and thus exhibits mere neutrality in this regard. CONT[1] and CONT[2] are not identical, but their diachronic and proximal relationships also generate ambivalence. In the consequent phrase's syntagmatic dimension, BI[2]'s cseg relationships to REP[2] undermine the correlation, but its subsequent relationships to CONT[2] instantiate it to the same de-

a)

Syntagmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^1, REP^1:	1st	3rd
BI^1, $CONT^1$:	3rd (1)	4th (1)
REP^1, $CONT^1$:	3rd (1)	4th (1)

b)

Paradigmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^1, BI^2:	4th	Siblings
REP^1, REP^2:	=	=
$CONT^1$, $CONT^2$:	3rd (1)	3rd (1)

c)

Syntagmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^2, REP^2:	4th	3rd
BI^2, $CONT^2$:	3rd	4th
REP^2, $CONT^2$:	4th	4th

FIGURE 5 Syntagmatic and Paradigmatic relationships in the A section

gree. The relationships between REP^2 and $CONT^2$ offer only further ambivalence; see Figure 5(c).

The Waltz's A' section, found in measures 33–47, however, presents an ornamentally varied form of the antecedent that firmly re-establishes the pattern. As seen in Figure 6, all three of this antecedent's melodic units present new cseg variants that incorporate a short chromatic descent derived from the melodic link in measure 32. Here, not only are all three csegs still closer diachronic than proximal relatives, but the gulf between the two domains is even more pronounced than in the earlier antecedent, as seen in Figure 7(a).

The higher-order paradigmatic dimension between the A and A' sections once again instantiates this pattern of initially establishing the correlation, and then following with neutrality or ambivalence. As seen in Figure 8, between the two antecedents, all csegs exhibit a far closer proximal than diachronic relationship; even the continuation segments participate in this case. The same obviously does not hold for the two identical consequent phrases.

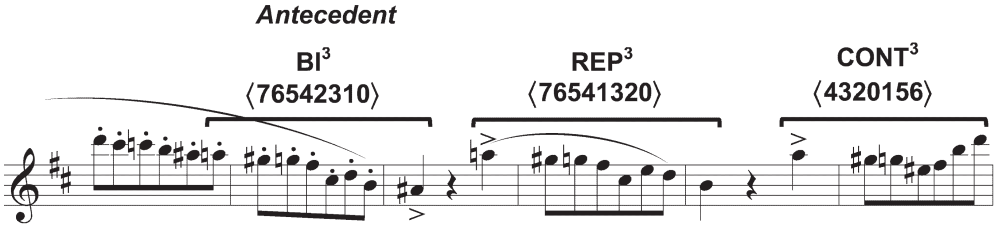

Figure 6 Frédéric Chopin: Waltz in B minor (1829), measures 32–37

a)

Syntagmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^3, REP^3:	1st	4th
BI^3, $CONT^3$:	2nd (1)	5th (1)
REP^3, $CONT^3$:	2nd (1)	5th (1)

b)

Syntagmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^4, REP^4:	4th	3rd
BI^4, $CONT^4$:	3rd	4th
REP^4, $CONT^4$:	4th	4th

c)

Paradigmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^3, BI^4:	5th (1)	Siblings (1)
REP^3, REP^4:	5th (1)	Siblings (1)
$CONT^3$, $CONT^4$:	5th	5th

Figure 7 Syntagmatic and Paradigmatic relationships in the A' section

The strict uniformity of the consequent phrases, however, manifests a different kind of closer proximal relationship within this higher-order paradigmatic dimension. If we conceive each melodic unit as a singular unified element, and the A and A' sections as ordered segments thereof, we can evaluate their diachronic and proximal ancestry in much the same manner as we have for csegs. Since BI^1 and BI^3 are distinct, the A and A' segments are merely diachronic fifth cousins. However, because their final three melodic units are identical, the A and A' sections are proximal second cousins, and thus instantiate

Antecedent (A) – Antecedent (A')

Paradigmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^1, BI^3:	5th (1)	Siblings (1)
REP^1, REP^3:	5th (1)	Siblings (1)
$CONT^1$, $CONT^3$:	4th (1)	Siblings (1)

Consequent (A) – Consequent (A')

Paradigmatic Segment Pairs	*Diachronic Relation*	*Proximal Relation*
BI^2, BI^4:	=	=
REP^2, REP^4:	=	=
$CONT^2$, $CONT^4$:	=	=

FIGURE 8 Paradigmatic relationships between the A and A' sections

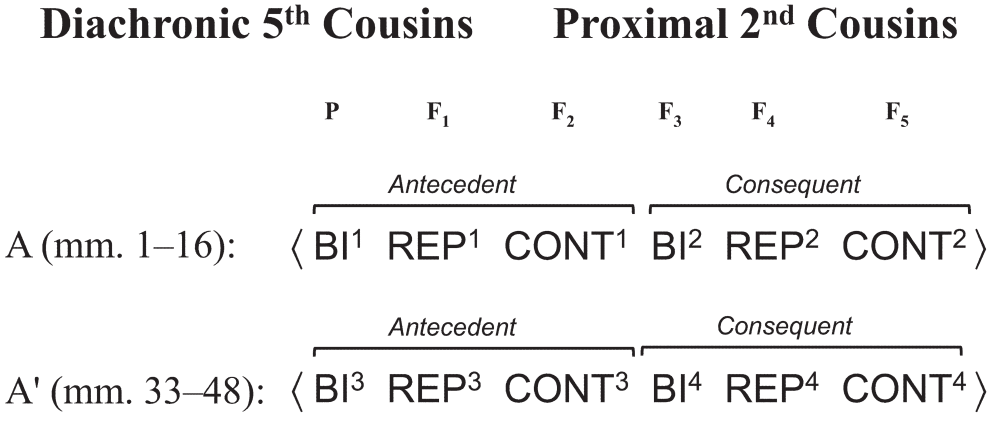

FIGURE 9 Diachronic and Proximal relationships between melodic units within the A and A' sections

the preference for closer proximal cseg relatives in the paradigmatic dimension in this way (see Figure 9).

Chopin's sketch for the *Berceuse*, Op. 57 – completed around 1843, some 14 or so years later – renders these findings even more significant. This sketch provides conclusive evidence of Chopin working explicitly in terms of the paradigmatic and syntagmatic dimensions, as it vertically aligns each four-measure phrase and numbers the rows in consecutive order. As Jim Samson has observed, Chopin may have stopped writing works in variation form shortly after moving to Paris in 1832, but as this sketch clearly demon-

strates, he never stopped working with variation *technique*.[3] Both Samson and Jeffrey Kallberg have also documented Chopin's penchant for mixing musical genres – writing, for instance, a Mazurka-esque Nocturne – as in Op. 15 number 3 – or a Nocturne-esque Mazurka – as in Op. 50 number 3.[4] The diachronic and proximal melodic contour relationships at work in the 1829 copy of the B minor Waltz thus reveal a nascent proclivity for both of these important hallmarks of Chopin's mature style.

3 Jim Samson: *Chopin*, New York 1996, p. 39.

4 Jeffrey Kallberg: *Chopin at the Boundaries. Sex, History, and Musical Genre*, Cambridge MA 1996.

Inhalt

Musiktheorie im 19. Jahrhundert

11. Jahreskongress der Gesellschaft für Musiktheorie in Bern 2011 • Herausgegeben von Martin Skamletz, Michael Lehner und Stephan Zirwes unter redaktioneller Mitarbeit von Daniel Allenbach

Musikforschung der
Hochschule der Künste Bern

Herausgegeben von Martin Skamletz
und Thomas Gartmann

Band 7

Dieses Buch ist im März 2017 in erster Auflage in der Edition Argus in Schliengen/Markgräflerland erschienen. Gestaltet und gesetzt wurde es im Verlag aus der *Seria* und der *SeriaSans*, die von Martin Majoor im Jahre 2000 gezeichnet wurden. Gedruckt wurde es auf *Alster*, einem holzfreien, säurefreien, chlorfreien und alterungsbeständigen Werkdruckpapier der Firma Geese in Hamburg. Ebenfalls aus Hamburg, von Igepa, stammt das Vorsatzpapier *Caribic cherry*. *Rives Tradition*, ein Recyclingpapier mit leichter Filznarbung, das für den Bezug des Umschlags verwendet wurde, stellt die Papierfabrik Arjo Wiggins in Issy-les-Moulineaux bei Paris her. Das Kapitalband mit rot-schwarzer Raupe lieferte die Firma Dr. Günther Kast aus Sonthofen im Oberallgäu, die auf technische Gewebe und Spezialfasererzeugnisse spezialisiert ist. Gedruckt und gebunden wurde das Buch von der Firma Bookstation im bayerischen Anzing. Im Internet finden Sie Informationen über das gesamte Verlagsprogramm unter www.editionargus.de. Zum Forschungsschwerpunkt Interpretation der Hochschule der Künste Bern finden Sie Informationen unter www.hkb.bfh.ch/interpretation und www.hkb-interpretation.ch. Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über www.dnb.de abrufbar. ISBN 978-3-931264-87-1