Kreuzspiel, *Louange à l'Éternité de Jésus*, and Mashups
Three Analytical Essays on Music from the Twentieth and Twenty-First Centuries

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CHAPTER 1:

Stockhausen's *Kreuzspiel* and its Connection to his *Oeuvre*

The figure of Karlheinz Stockhausen loomed over compositional and musical thought in the second half of the twentieth century and continues, to some extent, to do so even into the twenty-first. Despite (or perhaps because of) an abundance of interviews with Stockhausen, of essays and books about and by him, and of his compositional output, it remains difficult to find consistency in his underlying musico-philosophical thought.

Perhaps searching for a theory behind his *oeuvre* is an inappropriate objective. As noted by Alcedo Coenen, Stockhausen's writings "do not contain explicit theories, which may be the main reason why nobody has been inclined to consider them as such."[1] Coenen instead claims that Stockhausen's thoughts "should not be approached as music theory, but from a broader perspective in which philosophy, theory, and compositions have a place."[2] He couches his method in terms of Thomas Kuhn's paradigms in science, in which specific views or methodological truths provide the framework for the scientific community's investigation of nature. A shift to a new paradigm results from a radical change of *beliefs* of scientists, not from a change in nature itself. To Coenen, Stockhausen's underlying value of control over all his compositions remains constant throughout his career. Stockhausen's compositional attitude follows certain consistent assumptions and goals, despite the varying forms it takes. A single paradigm is present throughout.

While a thorough survey and analysis of this paradigm is well beyond the scope of this paper, I will focus on a few common musical issues that arise early in Stockhausen's career and that play a large role in his later works. Through a detailed analysis of *Kreuzspiel* (1951), I will

[1] Alcedo Coenen, "Stockhausen's Paradigm: A Survey of His Theories," *Perspectives of New Music* vol. 32, no. 2 (1994): 200-225. The issue of Coenen's "paradigm" will be visited towards the end of this chapter.
[2] Ibid., 221.

show that seeds for Stockhausen's compositional and music-theoretical attitudes had already been sown in this work, his first published. The dismissive explanations offered for the second and third sections of *Kreuzspiel* in previously published analyses neglect a complexity and convolution that poses questions about Stockhausen's early foray into serialism in relation to his later compositions.[3] A robust and technical exploration of those parts reveals not only an illuminating picture of the piece itself, but also sheds light onto the nascent stages both of Stockhausen's personal style and of serialism as a whole.

Following the analysis of the piece, I will focus on the following aspects that arise from a richer understanding of *Kreuzspiel*: (1) the use of ensemble, both "superficially" and for the superimposition of serial strands; (2) a move away from "pointillism"; and, most important, (3) the obfuscation and complication of symmetric, serial processes. Each of these points emerges as an essential issue tackled directly in Stockhausen's pre-"Moment-form" works and indeed generally, if less obviously, in his later intuitive works as well. As Coenen postulates, the rapid development of Stockhausen's compositional style results from "nothing more than a shift of attention in his paradigm from the technical side to the more philosophical side; but it still is the same paradigm**.**"[4] The above issues, I will argue, are related under the umbrella of Stockhausen's desire for control of his music and its presentation. This fundamental property of his paradigm can be seen in his earliest piece, *Kreuzspiel*.

[3] Richard Toop, "Messiaen/ Goeyvaerts, Fano/ Stockhausen, Boulez," *Perspectives of New Music* vol. 13, no. 1 (1974): 142-143; Jonathan Harvey, *The Music of Stockhausen: An Introduction* (Berkeley: University of California Press, 1975); Philip Keith Bracanin, "The Abstract System as Compositional Matrix: An Examination of Some Applications by Nono, Boulez, and Stockhausen," *Studies in Music* (Australia), vol. 5 (1971): 90-114.
[4] Coenen, "Stockhausen's Paradigm," 220.

1. *Kreuzspiel*

Stockhausen's *Kreuzspiel* provides an important and illuminating example of early serial techniques. The work is divided into three distinct sections or phases in which Stockhausen expresses his early "pointillist" style of serialism through the lens of crossplay: a registral crossing of the pitched instruments, a rhythmic crossing in the percussion instruments, and, most complexly, in the order crossing of each series. The first section's crossings have been generally described by Harvey, Toop, Bracanin, and others, but none delves into a rigorous or meaningful analysis of the second and third. These sections both develop and build upon these crossings in more notable ways than previously described. After using a fairly strict serial technique in the first section, Stockhausen often complicates and manipulates his crossplay design to a significant extant.

1.1 Background

In the summer of 1951, Karlheinz Stockhausen attended the Darmstadt Summer Course, an experience that led him to radically revise his compositional approach. Up until this time, Stockhausen's work had essentially been classically dodecaphonic.[5] After hearing Olivier Messiaen's *Mode de valeurs et d'intensités* and becoming familiar with Karel Goeyvaerts's *Sonata for Two Pianos* in Darmstadt, Stockhausen adopted a "pointillist," serial style for *Kreuzspiel*, written in the autumn of the same year. *Kreuzspiel* owes many of its traits and techniques to these works of Messiaen and Goeyvaerts.

Kreuzspiel is written for a unique ensemble of six instrumentalists playing: piano with lid removed, oboe, bass clarinet, tom-toms, tumbas, cymbals, and a woodblock. Stockhausen

[5] See Robin Maconie, *The Works of Karlheinz Stockhausen* (Oxford: Clarendon Press, 1990), pages 6-13 for a brief introduction to Stockhausen's student works: *Chöre für Doris* (1950)*, Drei Lieder* (1950), *Choral* (1950), and *Sonatine* (1951).

includes extremely specific directions for the set-up and arrangement of the ensemble, including microphone placements and seating heights. Such a meticulous treatment of logistics hints at a systematic, serial construction of the music and obviously reflects Stockhausen's controlling attitude towards his compositions and their performances. Throughout his career, he showed an often authoritarian disposition, wishing to, as Morgan notes, "control his performers, to tune them like radio receivers."[6] I will return to his controlling approach to music later.

1.2 First Section

In the first phase, measures 14 to 91, for the pitched instruments, piano, oboe, and bass clarinet, Stockhausen employs a series inspired by the example of *Mode de valeurs*, in which he integrates pitch classes, dynamics, and durations. In other words, each pitch class has a unique duration and linked dynamic marking which it carries throughout the first section. (See EXAMPLE 1.1) Duration in this piece is defined as the number of rhythmic units between attacks, not as the total held content of a note, a possible predecessor of Babbitt's later time-point system. Like Messiaen's piece, and Boulez's *Structures*, Stockhausen employs an additive, or "chromatic" series of durations, from 1 to 12 units, sixteenth note triplets in the case of the first phase. For example, any E♭ in the first phase is 11 triplet sixteenths long, while any C is 6 long. Duration and dynamics are also related, inversely proportional to each other: with ascending duration, Stockhausen attaches generally softer dynamics. PCs, on the other hand, are laid out in neighboring dyad pairs (eg. 1 and 2, or 11 and 10), but this aspect of the mode seems to have little consequence for organization in the piece.

[6] Robert P. Morgan, "Stockhausen's Writings on Music," *The Musical Quarterly* vol. 61, no. 1 (1975): 15. As I briefly discuss later (Sections 3 and 4), in relation to a comment in Robin Maconie's preface to *The Works of Karlheinz Stockhausen*, the seeming diametrical tendencies of Stockhausen either to set a rigid plan or to allow intuition to reign are really two sides of the same coin of Stockhausen's controlling nature.

Duration	PC	Dynamic
1	11	*ff*
2	10	*ff*
3	6	*f*
4	7	*f*
5	1	*mf*
6	0	*mf*
7	9	*mp*
8	8	*mp*
9	2	*p*
10	4	*p*
11	3	*sfz*
12	5	*pp*

EXAMPLE 1.1. Phase 1 pitched instruments.

Duration	Tom	Dynamic
1	I	*sfz*
2	III	*f*
3	II	*f*
4	I	*f*
5	III	*p*
6	II	*p*
7	I	*p*
8	II	*pp*
9	III	*pp*
10	IV	*pp*
11	IV	*p*
12	IV	*f*

EXAMPLE 1.2. Phase 1 tom-toms.

Duration and dynamics are similarly integrated into a mode in the percussion instruments. Whereas the PCs move around between instruments, each percussive voice is responsible for specific values of the mode. (EXAMPLE 1.2)

To understand the serial construction of the first phase, one can take Stockhausen's own explanation as a starting point:

> In the first phase (2'40") the piano begins in the extreme outer registers and progressively brings into play—through crossing—6 notes "from above" and 6 notes "from below"; the middle four octaves (the joint range of oboe and bass clarinet) are employed more and more fully, and at the moment where an even distribution of pitches throughout the entire range has been achieved, the series governing durations and dynamics have been crossed in such a way that the initially aperiodic series are converted into a regularly shortened series in the case of durations, and a regularly louder series in the case of dynamics (i.e., accelerando and crescendo); this series is marked by the woodblock. The whole process then runs backwards in mirror form so that by the end of the phase we are again left with notes in the extreme registers of the piano; as a result of the crossing process, however, the 6 "top" notes are now at the bottom, and vice versa.[7]

[7] As quoted in Toop, "Messiaen/Goeyvaerts," 159.

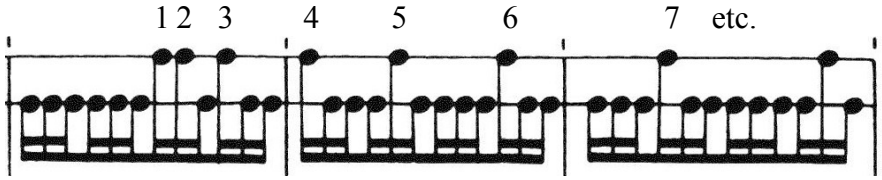
After a brief introduction, Stockhausen introduces a 12-note set in measure 14 in the piano. The pitched series begins with half of the notes of the series in the left hand of the piano, the other half in the right hand, played at the extreme registers of the instrument. With the addition of the bass clarinet and oboe in measures 28 and 32 respectively, the notes of the series begin a registral rotation, described accurately by Harvey as (7254361).[8] Here is the first instance of crossplay in the piece. Pitch classes that start in the seventh octave of the piano in the right hand move eventually to the second octave in the piano left hand, then to the fifth octave in the oboe, etc. If a note starts in the left hand, it proceeds through this rotation in reverse. In EXAMPLE 1.3, we can see this progress, accompanied by linked dynamics.

F	1pp	6p	3p	4pp	5p	2pp	7sfz	7sfz	7sfz	7sfz	7sfz	7sfz
E	7p	7p	7mf	7p	7p	7p	2p	5p	4p	3p	6p	1p
E♭	7sfz	7sfz	7sfz	7sfz	2pp	5pp	4pp	3pp	6pp	1pp	1pp	1pp
D	7p	7p	2p	5p	4p	3p	6p	6p	1p	1p	1p	1p
D♭	1mf	1mf	6mf	3mf	4mf	5mf	2mf	7mf	7mf	7mf	7mf	7mf
C	1mf	1mf	1mf	1mp	6mf	3mf	4mf	5mf	2mf	7mf	7mf	7mf
B	1ff	1ff	1ff	1ff	1ff	6ff	3ff	4ff	5ff	1ff	7ff	7ff
B♭	1ff	1ff	1ff	6ff	3ff	4ff	5ff	2ff	7ff	7ff	7ff	7ff
A	7mp	2mp	5mp	4mp	2mp	6mp	1mp	1mp	1mp	1mp	1mp	1mp
A♭	7mp	7mp	7mp	7mp	7mp	2mp	5mp	4mp	3mp	6mp	1mp	1mp
G	7f	7f	7f	2f	5f	4f	3f	6f	1f	1f	1f	1f
G♭	1f	1f	1f	1f	1f	1f	6f	3f	4f	5f	3f	7f

EXAMPLE 1.3. Registral rotation with linked pitches in measures 14-91.
Note the basic progression (7254361).[9]

[8] Harvey, "Music of Stockhausen," 18. These octaves correspond to the octaves on a piano (eg. pitch class A at octave 1 would be the lowest note on the piano, while pitch class C at octave 4 would correspond to middle C.)
[9] Toop, "Messiaen/Goeyvaerts," 161. One notices a few irregularities in the patterns, such as two (3f) occurrences in the latter half of G♭'s row. These are divergences from Stockhausen's serial treatment, which will be discussed later in this chapter.

Besides this registral crossing, the series of both the percussion and pitched instruments move through an internal crossing. The tumbas show the basic method quite clearly. Beginning in measure 7, they tap out a chromatic series of durations from one to twelve sixteenth note triplets. Unlike the other durations in the piece, the tumbas' duration values are the number of units between high tumba accents, as seen in EXAMPLE 1.4.



EXAMPLE 1.4. Tumbas part from measures 7-9, with duration values above. [10]

→ 1	2	3	4	5	6	7	8	9	10	11	12
2	3	4	5	6	12	1	7	8	9	10	11
3	4	5	6	12	11	2	1	7	8	9	10
4	5	6	12	11	10	3	2	1	7	8	9
5	6	12	11	10	9	4	3	2	1	7	8
6	12	11	10	9	8	5	4	3	2	1	7
12	11	10	9	8	7	6	5	4	3	2	1 ←
11	10	9	8	7	1	12	6	5	4	3	2
10	9	8	7	1	2	11	12	6	5	4	3
9	8	7	1	2	3	10	11	12	6	5	4
8	7	1	2	3	4	9	10	11	12	6	5
7	1	2	3	4	5	8	9	10	11	12	6

EXAMPLE 1.5. Phase 1 tumba duration series, measures 7-85.
Arrows indicate the prime and retrograde forms. [11]

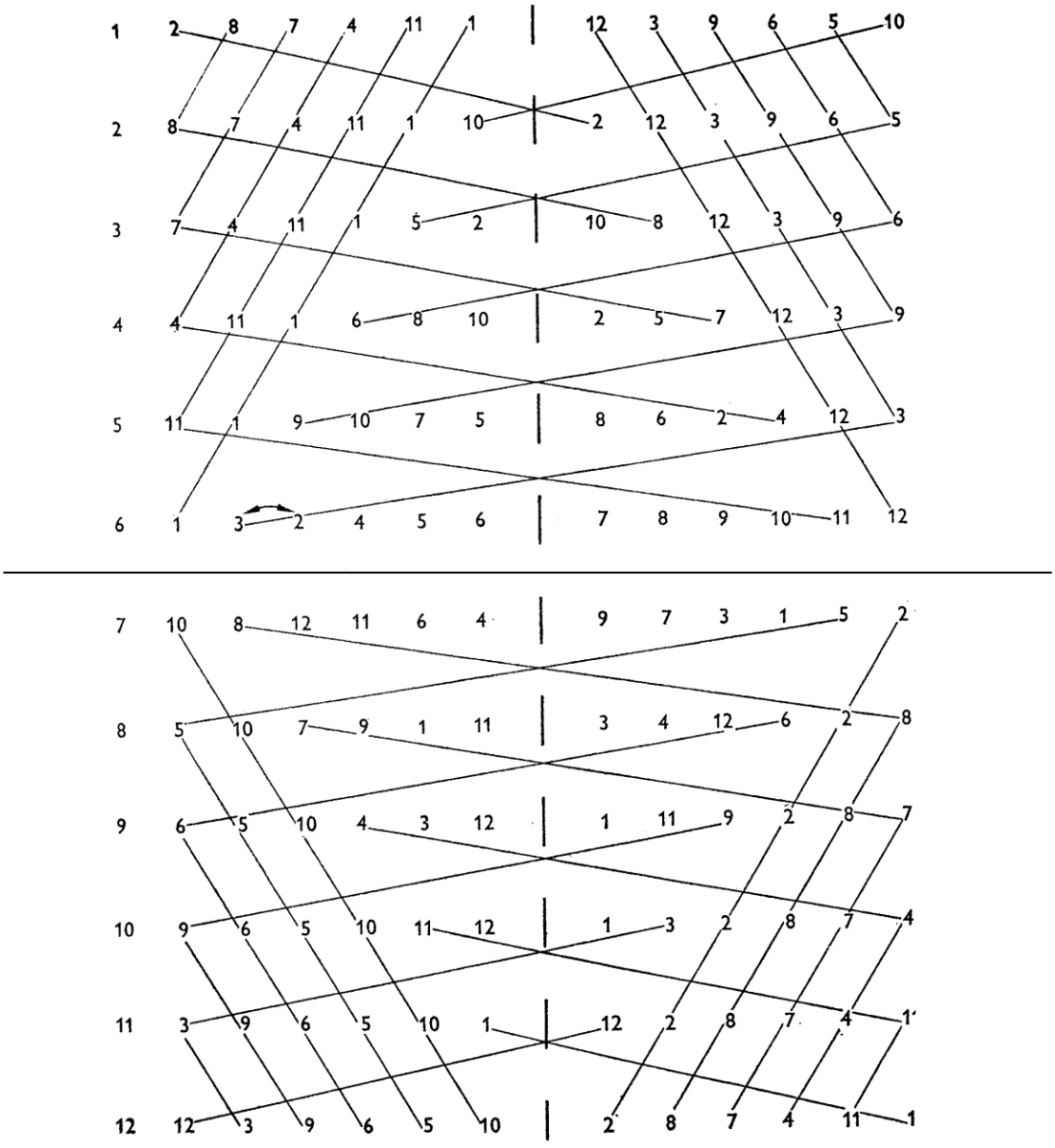
[10] All score excerpts from Karlheinz Stockhausen, *Kreuzspiel*, London: Universal Edition, 1960.
[11] Toop, "Messiaen/Goeyvaerts," 162, with arrows and boxes added. Note that the next iteration of the process would produce the original series.

Stockhausen employs a method similar to Messiaen's *des extrêmes au centre*, in which he takes the first and final values of the series and places them in the middle in the next permutation. (See the circled and boxed numbers in EXAMPLE 1.5.) By bringing the outermost durations to the middle of the series, rotated around the center axis of symmetry, Stockhausen eventually arrives at the retrograde series of durations after six run-throughs in measures 41 to 52, just after the horizontal line in EXAMPLE 1.5.

The fullest registral saturation of pitched instruments also occurs here. This central moment of the first phase is demarcated by the entrance of a woodblock, which Stockhausen uses to blatantly indicate its structural importance. The *des extrêmes au centre* technique is continued until measure 84, when we get the original tumba series in its prime, ascending chromatic form. This marks the end of the first phase.

This crossing technique is obvious enough in the tumbas, but it takes on a new level of complexity in the pitched instruments and the tom-toms. (See EXAMPLE 1.6.) The basic technique is the same as in the tumbas for the first six repetitions, but the inner material is treated more freely. Instead of bringing the extreme values to the middle each time, Stockhausen moves them inward, but further from the axis of symmetry in consecutive statements of the series. There is no apparent system that governs the movement of items once in the middle of the series, although Stockhausen takes care to keep dyads which have moved to the center at the same time linked in symmetry around the central axis. The process is reversed after the sixth repetition, the same time that the woodblock marks the retrograde version of the tumba series. A new series is chosen in the seventh aggregate statement which, through this mirrored process, results finally in the same two hexachords as the initial series, but in reversed places. The pitched instruments'

series, in addition to its registral rotation, is given the exact same treatment as the tom-toms. The process gives an ascending, chromatic series of dynamics in the sixth series repetition, marked by the woodblock, and ends with the same hexachordal swapping as the tom-toms.[12]



EXAMPLE 1.6. The serial treatment of the tom-toms in Phase 1. Numbers represent duration.[13]

[12] See Harvey, "Music of Stockhausen," 17, Example 1 for a full description.
[13] Harvey, "Music of Stockhausen," 19. It is also worth noting that the original row's two hexachords are Z-related in Fortean set class theory terms, meaning they share a common interval vector. The two hexachords are 6-Z50

1.3 Sections 2 and 3

The second and third sections of *Kreuzspiel* offer more difficult analytical landscapes. Stockhausen explains, "in the second phase (measures 99-140) this same formal process is carried out from the centre outwards."[14] To Harvey, "the second section does the same thing [as the first] inside out."[15] Bracanin thought that after the first phase, the rest of the work is "freely chromatic."[16] Toop, after analyzing the first phase, neglected to go into the rest of the piece at all, claiming the work is "relatively well known."[17] None of these analyses or descriptions offers a detailed explanation of this section. By elaborating on Stockhausen's explanation, I will show how the various details of the "centre outwards" process of the second section bring to light techniques and complexities not previously acknowledged. In doing so, I hope to provide a satisfactory and rigorous account that has implications for understanding *Kreuzspiel* in its place in Stockhausen's *oeuvre*.

To begin with, Stockhausen derives new integrated modes for the second phase. (See EXAMPLES 1.7 and 1.8.) Each facet seems to be freely associated, without the somewhat systematic ordering of duration and dynamic in the mode of the first phase. Similarly, the dynamics display a more limited range. This limitation and freer treatment of the modes is analogously represented in the more ambiguously serial, "centre outwards" method of the second phase overall, which I will describe later.

(014679) and 6-Z29 (013689), respectively. After the midway point, the two hexachords that begin the mirrored process are both 6-22 (012468). While not expounded upon, the "symmetry" of the initial row was at least noticed by Borio and Garda (1991), who noted that the intervallic content of a row permuted in this way would be lost.

[14] Toop, "Messiaen/Goeyvaerts," 159.

[15] Harvey, "Music of Stockhausen," 118.

[16] Bracanin, "Abstract System," 111.

[17] Toop, "Messiaen/Goeyvaerts," 162.

Duration	PC	Dynamic
1	2	*pp*
2	0	*p*
3	8	*mp*
4	7	*p*
5	9	*f*
6	11	*f*
7	3	*mp*
8	1	*f*
9	4	*p*(*p*)
10	5	*mp*
11	10	*p*
12	6	*p*

EXAMPLE 1.7. Phase two pitched mode.

Duration	PC	Dynamic
1	2	*pp*
2	0	*p*
3	8	*mp*
4	7	*p*
5	9	*f*
6	11	*f*
7	3	*mp*
8	1	*f*
9	4	*p*(*p*)
10	5	*mp*
11	10	*p*
12	6	*p*

E**XAMPLE 1.8**. Phase two percussion mode.

The registral process of the first phase is essentially reversed in the second section. The series begins first in the middle register, 4, of the oboe and bass clarinet, and moves towards the extremes. After a brief visit to the outer registers of the piano, the pitch classes move back to the middle of the texture, following an order of registers of either (43617254) or its reverse. The opposition to the original sequence of (7254361) is clear:

First phase: 7 2 5 **4** 3 6 1
Second phase: **4** 3 6 1 7 2 5 **4**

Here is another instance of crossplay. In addition to the mirrored motion of PCs from the first phase (moving outwards then back inwards), the two outer "trichords" of the first phase's rotation series are swapped in the second phase, with the central octave **4** moved to the extremes.

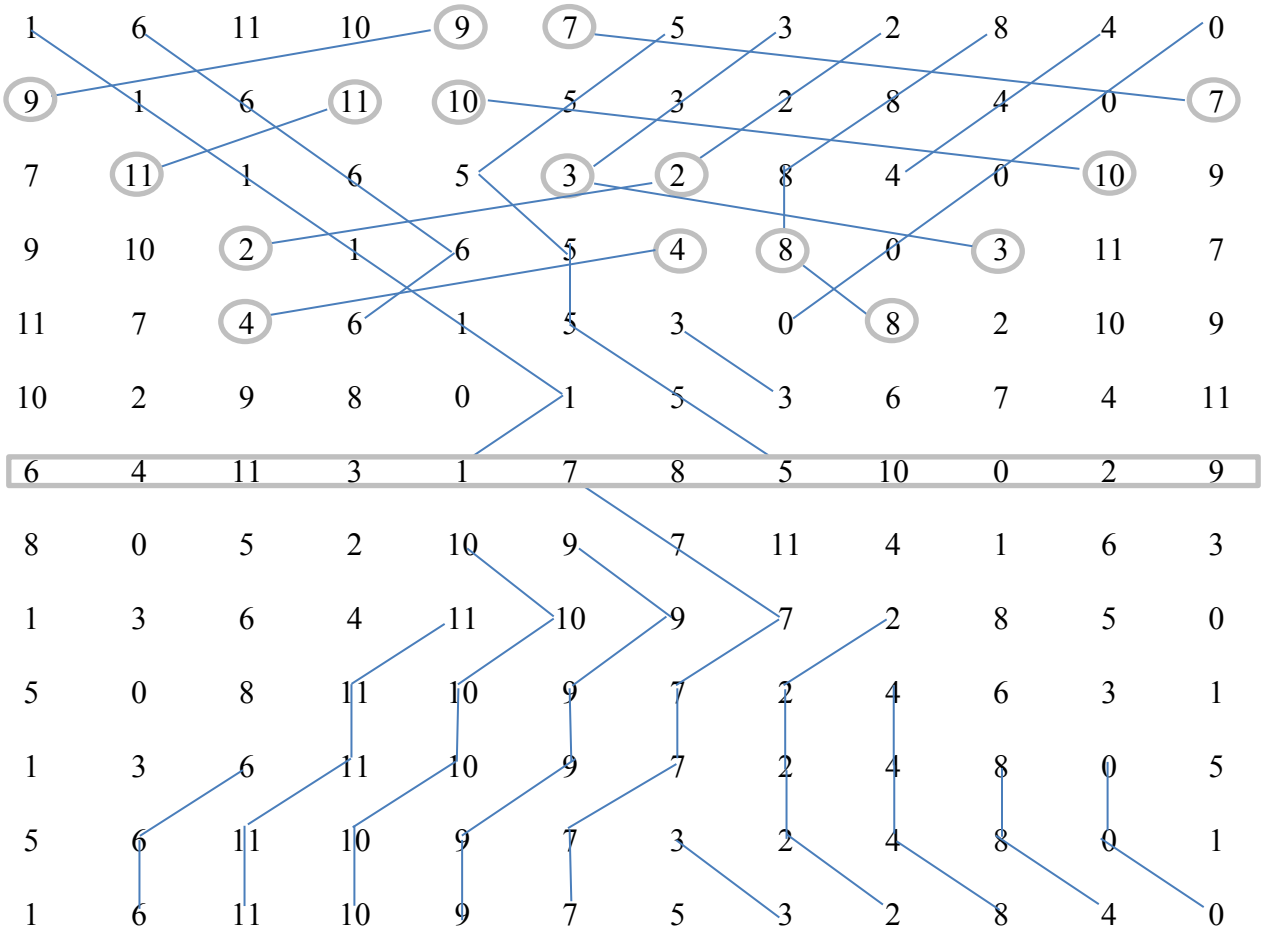
The *du centre aux extrêmes* internal process of the second phase is more complicated and far less regular than the *des extrêmes au centre* method in the first phase. Consider first the pattern of the pitched instruments. From EXAMPLE 1.9, it is immediately clear that Stockhausen

was not concerned with hexachordal symmetry in the second phase.[18] The first PCs that get moved "inside out," 9 and 7, both lie within the first hexachord of the initial series. (See circled pitches in EXAMPLE 1.9.) PCs 11 and 10 get permuted from the second to third statement, but do not occupy positions analogous to those of 9 and 7 in the first statement. The other dyads that get moved from the center outwards are drawn from different locations in the middle of the series. This procedure contrasts with the regularity of the first phase's permutation, where only PCs at the extremes were moved.

Like the motion of subsequent PCs to spots farther from the center in phase one, succeeding values of PCs are moved farther from the edges in phase two. Also similar to phase one, there is no apparent overarching systematic treatment of PCs once they have been subjected to a permutation. One notices, however, that Stockhausen moves pairs of pitch classes that are contiguous in the initial statement of the series (9 7, 11 10, 3 2, 8 4), unlike the first phase in which pairs were made up of PCs located at the extremes. He treats such dyads somewhat symmetrically, but since the main axis of permutation is not clearly defined, there is greater ambiguity in dyad coherence during the first half of the second phase.

After six "inside-out" permutations of the series, there is a new series in measure 118 (the boxed row in EXAMPLE 1.9), seemingly unrelated to the original series. This new series is permuted analogously to method applied to the first half of the second phase, but instead of having central notes move to the extremes in subsequent statements, the PCs move gradually towards the extremes in a somewhat unpredictable manner. In measure 138, the technique

[18] Jerome Kohl argues that duration elements "determine the structure" in the first section while "pitch elements assume dominance" in the second section. He then considers various exchanges of pitch material between hexachords in the second section. I believe this is a somewhat limited and misguided interpretation mainly because the inside-out technique displays little evidence of hexachordal considerations during the compositional process. Also, the inclusion of percussion instruments in serial thinking contradicts a pitch-based understanding of the material if the two instrumental groups (pitched and non-pitched) are treated somewhat analogously, as they clearly were in the first section. See Kohl, "Serial and Non-Serial Techniques in the Music of Karlheinz Stockhausen from 1962-1968," (PhD diss., University of Washington, 1981): 18.

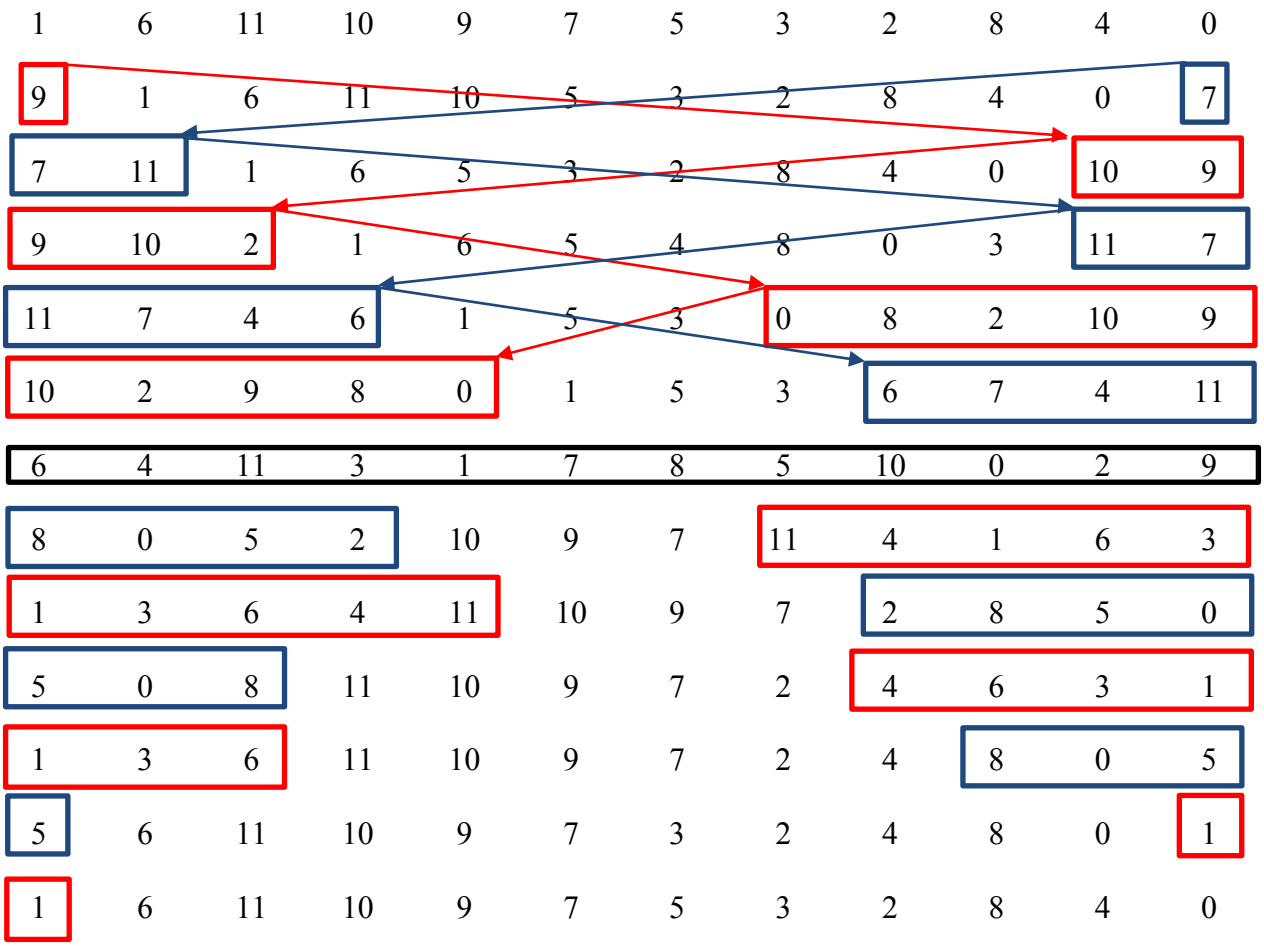


EXAMPLE 1.9. Pitched instruments section II.

culminates in a prime statement of the initial series of the second phase. It seems possible that Stockhausen was more concerned with the end product than the actual method in this second phase. His apparently relaxed treatment of the second phase material is unexpected, considering the rigidity and specificity of other aspects of the piece, like the stage setup for instance. Borio and Garda noticed this departure from serially derived structure. They noted that, beyond the large scale crossing of registers, "musical form [in the second section] is not necessarily deducible from the serial organization,"[19] but gave no further explanation.

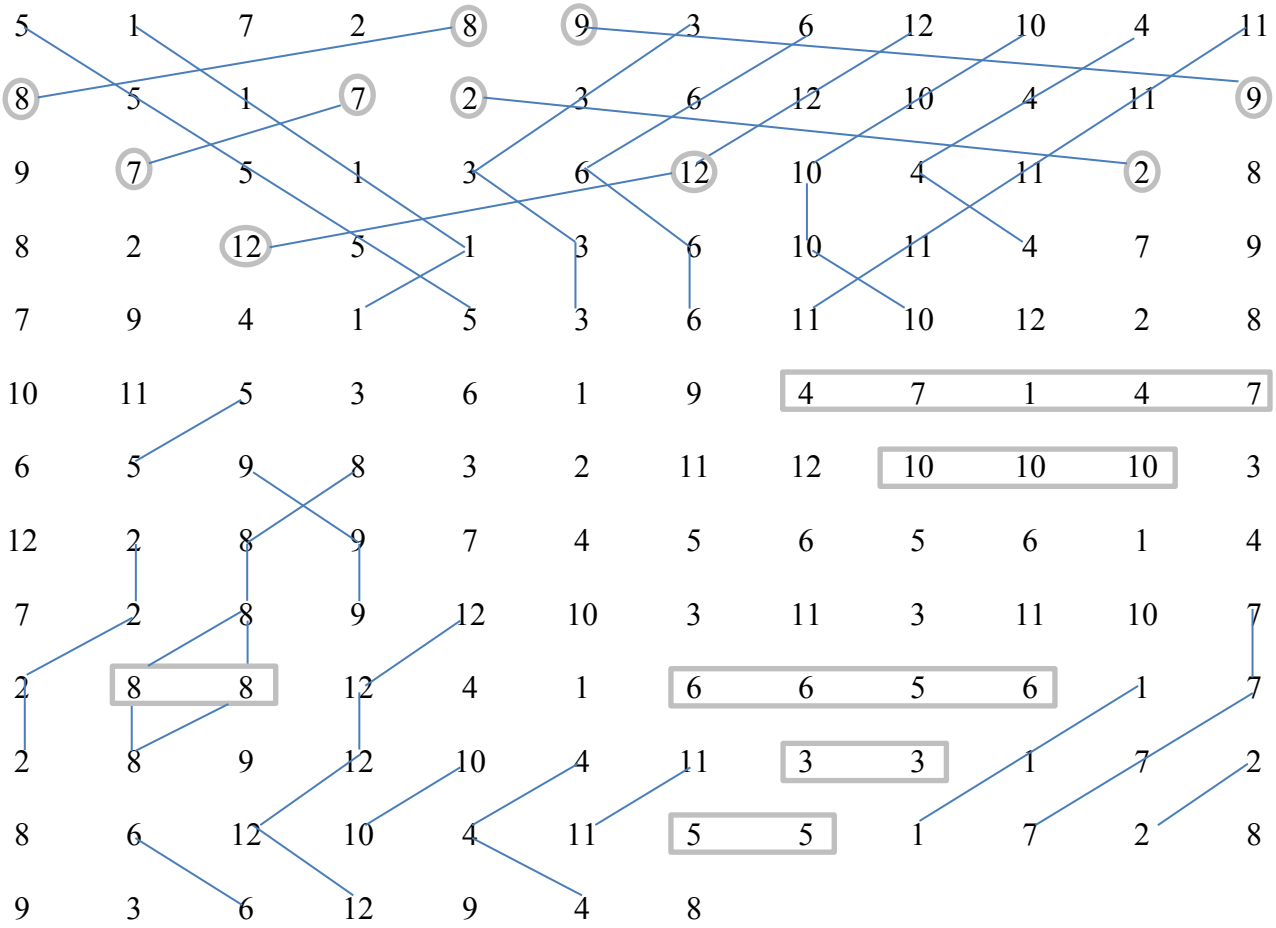
[19] Gianmario Borio and Michela Garda, "*Problemi d'analisi della musica seriale:* Kreuzspiel *di Karlheinz Stockhausen*," in *L'analisi musicale: Atti del convegno di Reggio Emilia, 16-19 marzo 1989*, Milan: Unicopli (1991): 158.

An important point of departure from the first phase not previously described is outlined in EXAMPLE 1.10. Here, one can see a slightly larger scope of Stockhausen's crossing plans in the pitched instrument series. Instead of pursuing a purely "pointillist" approach, Stockhausen has started to think in terms of groups. Notice the swapping of segments from the outermost edges across the axis of symmetry. By grouping pitch classes (and thus the other musical domains as well), Stockhausen has indeed shifted his compositional approach. While this may not initially appear very radical, this methodology has far-reaching implications for his later compositions, which will be explored later in this chapter.



EXAMPLE 1.10. Segmental grouping in pitched instruments in section II.

The percussion is given a similar treatment in the second phase. The "pointillist" series seems to follow the same basic asymmetrical, inside-out treatment as the pitched instruments, but irregularities abound. (See EXAMPLE 1.11.) There appears to be some pattern very much like that of EXAMPLE 1.9 but the second half especially seems jumbled and resists analytical penetration. The simplistic twelve-count method that worked well for each prior series falls apart in the sixth permutation. Later, I will compare these cymbals to the percussion in the third section to derive a coherent explanation. For now, it is sufficient to note the basic similarity in compositional methodology between the percussion and pitched instruments.



EXAMPLE 1.11. Cymbals in section II.[20]

[20] The two hexachords of the initial row here are Z-related, like the hexachords of the toms in phase 1 (EXAMPLE 1.6). The first hexachord in this case is the all-trichord hexachord, Forte number 6-Z17 (012478); the second is 6-Z43 (012568).

Comparisons between the second and third sections will provide some more appropriate insights into this dilemma. "The third phase (mm. 146-198)," according to Stockhausen, "combines the two processes" from the first and second phases.[21] Harvey succinctly explained the intricate combination of the pitched processes:

> The final section combines the preceding processes in a rather complex way. The piano and winds proceed through the 12 sets backwards with the same registral dispositions and the same notes in each instrument as in section one but added to this is a superimposition of the second section around a central axis. This reaches a maximum point half way, then fades out, so that we are left with music similar to the beginning of section three and similar to the beginning of the work.[22]

This summary is accurate, but again, more detail is needed here for a satisfying explanation. First of all, the integrated modes from the first two sections are replicated almost exactly in their third phase guises, leading to a structural connection between the sections. The rhythmic units of the first two sections are swapped in the third phase: the retrograde first section material now uses straight sixteenth notes in the third phase, while the superimposed second section material uses sixteenth note triplets. This switch marks yet another instance of crossplay.

Harvey also neglects to note that the second section's pitched instrument series superimposition proceeds in reverse in the third phase as well (read EXAMPLE 1.9 in retrograde), but remains only in the piano, leaving the oboe and bass clarinet to the material from phase one. The octave rotation of the second section is treated more freely, as it seems to be generally subordinate to the first-section material, confined to only one instrument. The PCs generally follow the same (43617254) motion or its retrograde, as in phase two, but occasionally skip or repeat an octave. Again, the more relaxed treatment of the serial system from the second phase is reiterated. I will revisit this idea following the analysis.

[21] Quoted in Toop, "Messiaen/Goeyvaerts," 159.
[22] Harvey, "Music of Stockhausen," 18.

The second section material enters in measure 153, seven measures after the entrance of the first section statement. As the piano material from section one moves towards the central registers of the winds, the second section material occupies more and more of the piano's range, until the halfway point in measure 174. It then becomes more confined to the center, as the extreme registers get become more occupied with the phase one material. By measure 190, the phase two material is finished, and the listener is left with only the extreme piano registers playing phase one material.

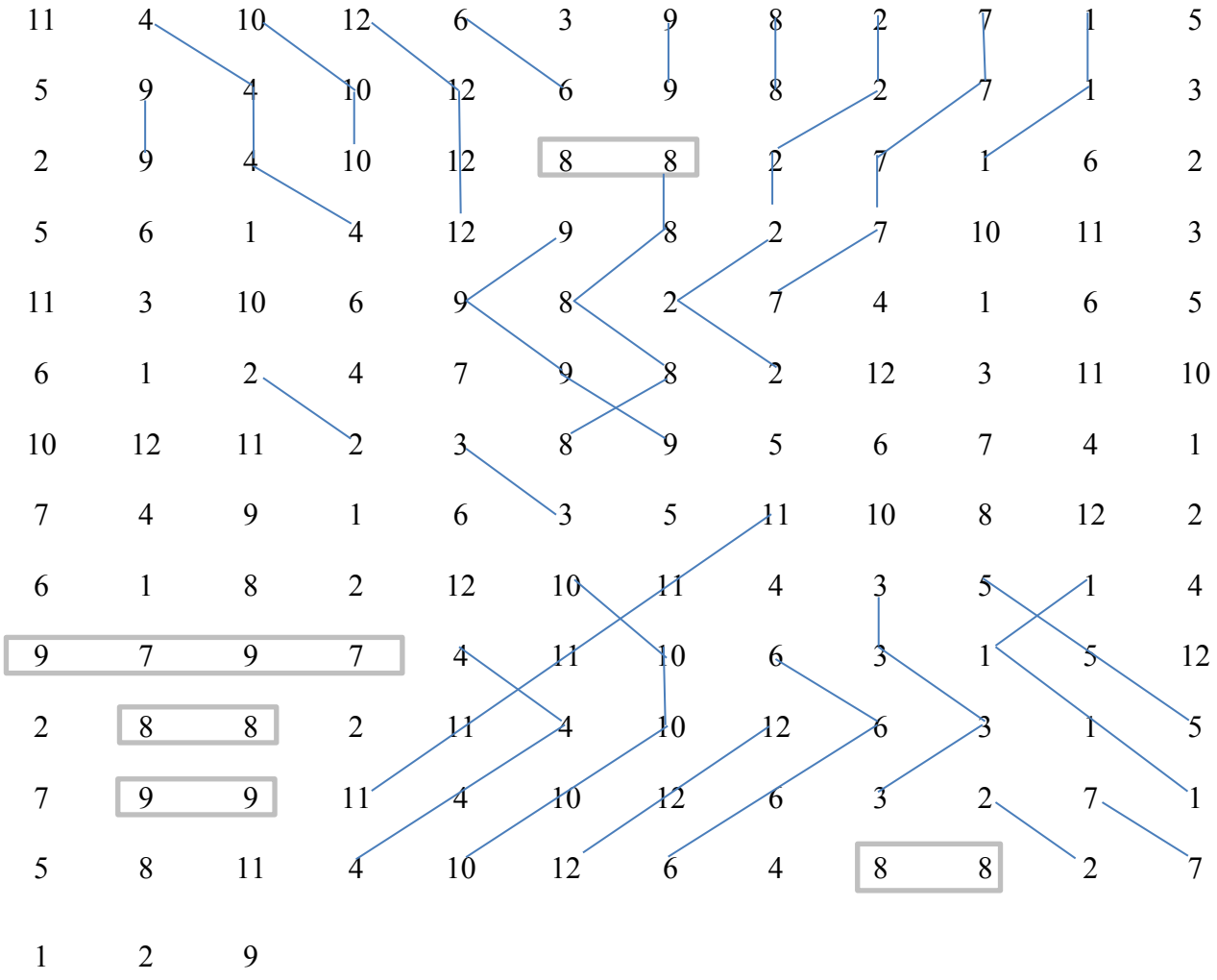
The percussion gets a similarly complex treatment in the third phase, more so than Harvey's curt description indicates: "The percussion is likewise a combination of sections one and two in that tom-toms and cymbals play together."[23] Indeed they do, but they are superimposed and played in retrograde like the pitched instruments' earlier material.

The tom-toms begin with the piano in measure 146 and similarly trade their durational unit of the first phase, triplets, for the straight sixteenths of the second phase. Then, like their pitched counterpart, the tom-toms progress backwards through the first section material, with minor changes when the eventual and inevitable overlaps with cymbal durations occur. In measures 172-176 there is a retrograde, descending chromatic series of durations in the tom-toms, similar to the woodblock section of the first phase. This is clearly demarcated by the cymbals, which are struck by the wooden handle to signify the important structural midpoint. In opposition to the first phase, the tom-toms finish the piece in the ascending, chromatic statement of their mode.

At this juncture, it is possible to reengage the irregularities of the cymbals, which begin their third phase in measure 153 with the phase two material in the middle piano register. (See EXAMPLE 1.12.) Once again, there is a rhythmic durational unit swap, from straight sixteenths in

[23] Harvey, "Music of Stockhausen," 18.

phase two to sixteenth triplets in the final phase. Comparing the other serial strands of the third section, one might expect a progression backwards through the material of the second section. With this in mind, one can see that the final five permutations of the phase three cymbals match the first five series of section two very closely. Similarly, the initial seven of phase three match with the final seven of phase two. Neither section makes sense on its own, but, by comparing the two, it becomes clear that repetitions of durations that occur within a single permutation can be easily reconciled. Take, for instance, the string of three 10s in the seventh and eighth permutations from the second phase (EXAMPLE 1.11). By comparing them to the third section's



EXAMPLE 1.12. Cymbals in section III.

sixth and seventh permutations, one can see that the final 10 "should" be an 11, according to the systematized plan of the third section.

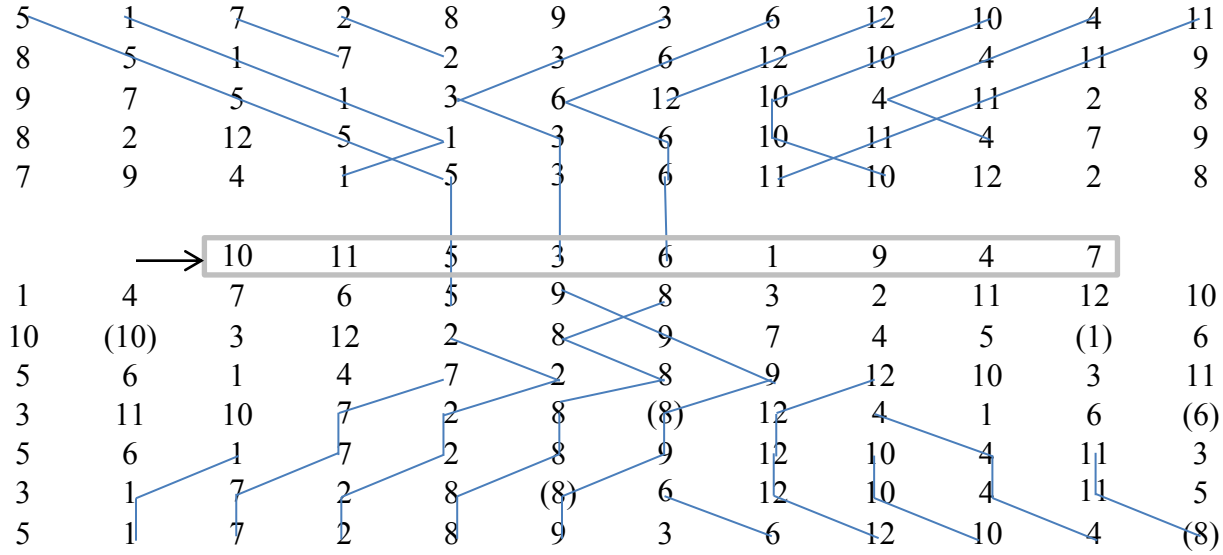
One can similarly settle other discrepancies, like the entire final permutation of the third phase (with its multiple 4s and 8s), by comparing the two sections. When Stockhausen uses a different duration than the order suggests, he takes care to employ the rest of the correct dimensions from his mode. For example, the final parenthetical 8 in the third phase, in EXAMPLE 1.13, "should be" a 9 to match its phase two counterpart. And, despite the incorrect duration, Stockhausen employs the correct dynamic (p) in the correct cymbal voice (mid.) Indeed, by comparing the middle of both cymbal sections, one can sort out a coherent picture. As seen in EXAMPLES 1.13 and 1.14, the problem is resolved by isolating a single, incomplete permutation. In each instance, the aggregate is not fully saturated, and, in the case of phase 3, Stockhausen includes additional material. It is here, in measures 172-176, that Stockhausen incorporates the wooden handle signification of the middle structural moment mentioned above. The incomplete permutation in the cymbals acts as an additional structural marker. While it may be difficult, or even impossible, to hear the permutational techniques sufficiently to perceive the marker's truncated row, its placement makes an obvious turning point in this structural analysis.

But the question of why the minor deviations from the system (those parenthesized numbers) occur remains unanswered. Stockhausen offers a hint in his description of the first section of the piece:

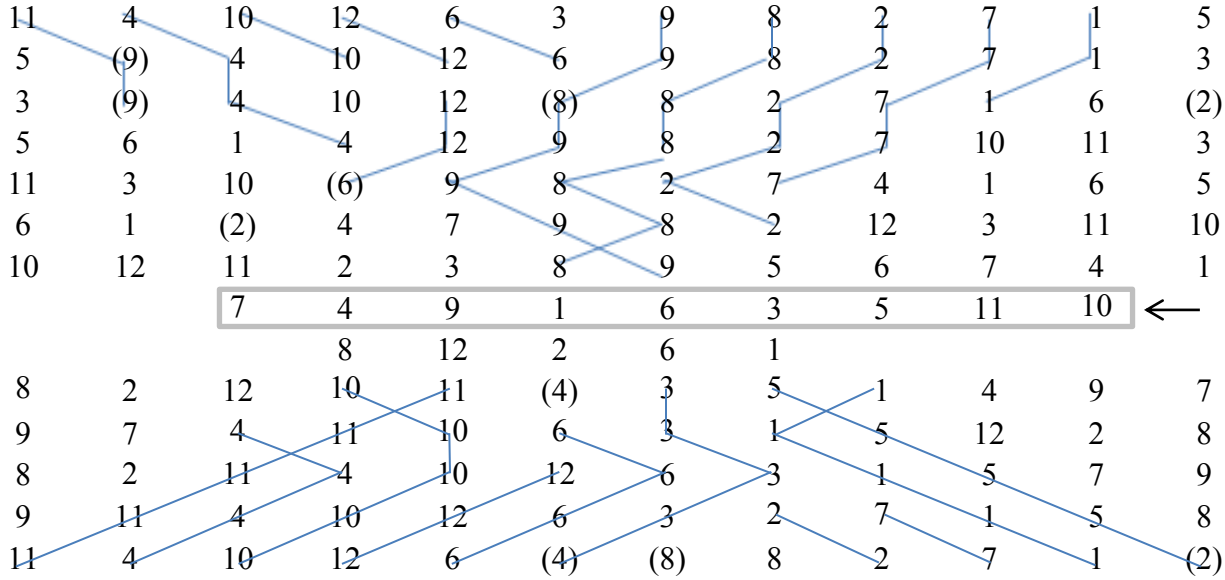
> When pitches and noises occur together, and this happens fairly often, there is a tendency away from systematized formal procedures: a note occurs in the wrong register, its duration or dynamic deviates from the series etc.[24]

His aversion to the overlap of pitched instruments and percussion instruments is ostensibly the problem, but his solution is somewhat uncreative. Instead of permuting the series to avoid

[24] As quoted in Toop, "Messiaen/Goeyvaerts," 159.



EXAMPLE 1.13. Reinterpreted section II cymbals.[25]



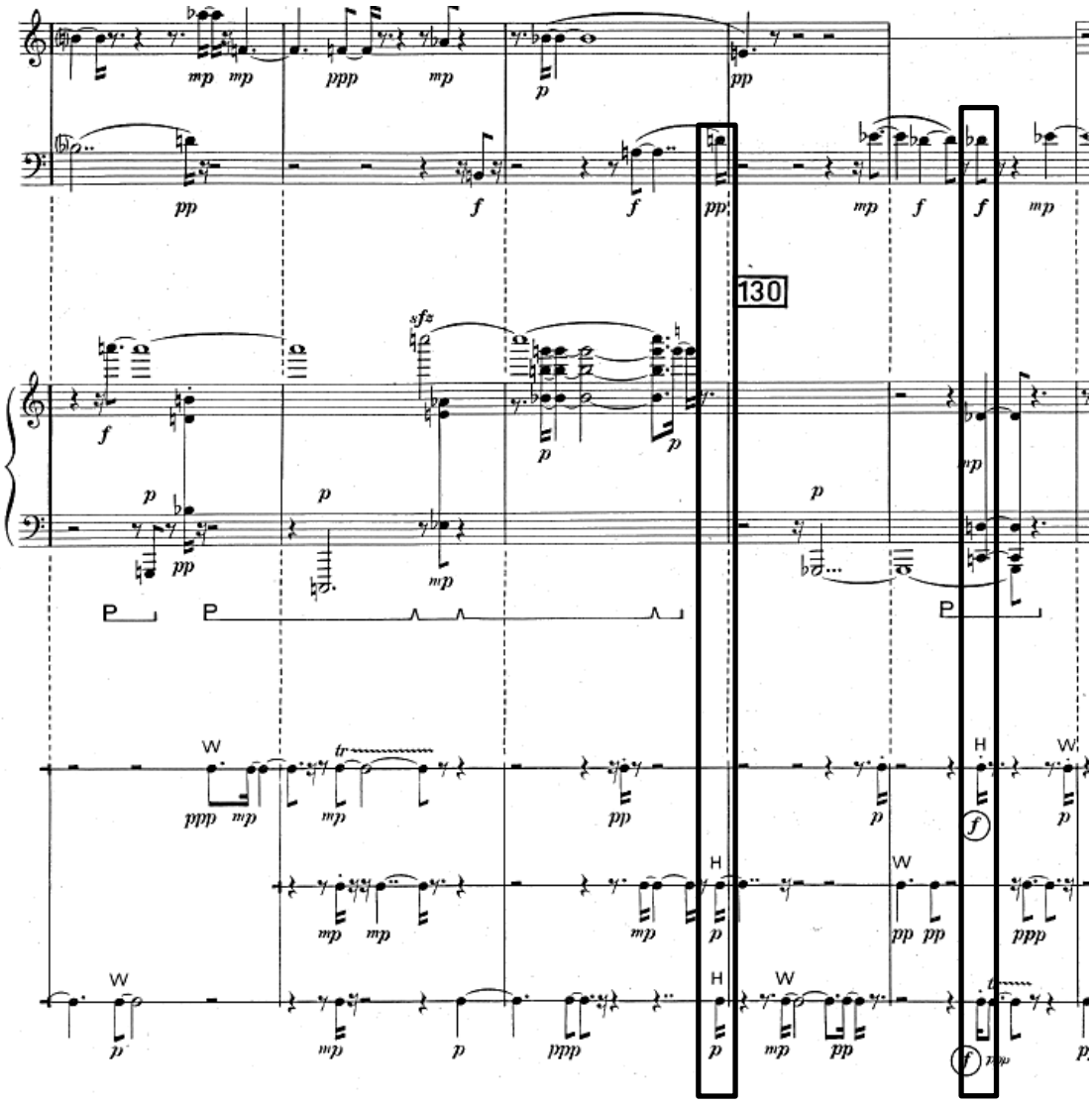
EXAMPLE 1.14. Reinterpreted phase 3 cymbals.

[25] The boxed "key" segment displays some interesting properties in set-class terms. The first six durations make up the 6-Z26 hexachord (013578), while the final six durations (with overlapping values) constitute 6-Z23 (023568). While these two do not share an interval vector, they do share the transpositional levels at which they are combinatorial.

simultaneities or altering the duration of one of the notes to avoid overlap of attacks between pitched and percussive instruments, Stockhausen simply changes a domain for one of the offending notes. A clear example of this deviation from the series occurs in measure 129, seen in EXAMPLE 1.15. These correspond to the tenth iteration of the pitched instruments series in EXAMPLE 1.9 and the fourth iteration after the incomplete aggregate of the cymbals in EXAMPLE 1.13.[26] The D (PC 2 in the series) of the bass clarinet on the last sixteenth of measure 129 lines up exactly with the attack of the middle and lower cymbals (8) in that series. Instead of changing a duration to negate this alignment, Stockhausen changes the value of the cymbal's duration whose attack occurs with the sixteenth note D, from 9 to 8 sixteenth notes long. He also couples the middle and lower cymbals together on this attack, differentiating it from the "usual" middle cymbal used for durations of 8 and 9. Doing so does not positively or negatively affect any later alignments; in fact, the last duration of the cymbal series is changed from 5 to 6, which causes an alignment with *forte* dynamics at the beginning of the next series in both serial strands. If he had stuck to the series, both alignments would have occurred anyway (since the replacement durations sum to the same total duration as the original durations [9+5=8+6]).

The motivation for altering the system on such a small scale appears arbitrary; but when taken in connection with the large-scale complication of the crossing pattern in the second and third sections, the reasoning can be understood as twofold. First, it suggests dissatisfaction with the contemporary pointillist style of serialism, which is supported by the segmental swapping noted earlier, and further corroborated by the move away from the straightforward crossing of the first phase. This could also suggest a wariness of integral serialism generally. Second, the alteration of musical parameters shows Stockhausen's concern for the temporal aspects of the

[26] These series are: PCs for the pitched instruments: [5,0,8,11,10,9,7,**2**,4,6,3,1]; and durations for the cymbals [3,11,10,7,2,8,(8),12,4,1,6, (6)]



EXAMPLE 1.15. Overlaps in measures 127-131 of *Kreuzspiel*. The staves are, in order from top to bottom: Oboe, Bass Clarinet, Piano, High Cymbal, Medium Cymbal, and Low Cymbal. The two simultaneous attacks are boxed.

piece, made obvious here by his tendency to subtly manipulate notes of different serial strands that occur simultaneously (but not always). Stockhausen's interest in musical time will be discussed briefly in Section 3. Additionally, some of the "errors" in the system could have arisen during the new publication of *Kreuzspiel* in 1959. With so many detailed rhythms and specified

parameters, a few copying errors leading to simultaneities, overlaps, and discrepancies in other aspects of the modes would not be completely unexpected.[27]

1.4 Analysis Summary

Stockhausen segregates his unique instrumentation into separate serial ensembles, each of which is assigned a Messiaen-inspired mode integrating multiple dimensions of music. *Kreuzspiel* is divided into three distinct sections. The first phase carries out one basic serial process, *des extrêmes au centre*, in three different formal strands, demarcated by different instrumental groupings: the pitched instruments, the tom-toms, and the tumbas. The pitched instruments also follow a registral permutation from extremes of the piano inwards to the bass clarinet and oboe, then back out again. The second section carries out an opposite process, moving values out from the center during permutations, but in a much freer manner. The registral revolution is similarly opposed to the first section, with PCs moving from the central oboe and bass clarinet outward to the extremes of the piano, then back into the center. In this second phase, Stockhausen also concerns himself with the combination of groups of points that move together across the central axis of symmetry of the 12-tone chart. The third section essentially superimposes the reverse of each serial strand from sections one and two (except for the tumbas from phase one), trading durational units between first and second phases.

Additionally, one should note that each serial strand ends in a permutation that bears significant resemblance to its initial prime form. For instance, the cymbals in section two begin and end in the prime form; the pitched instruments in the first section swap hexachords from the

[27] Even different printings from the same publisher reveal inconsistencies. The above excerpts come from the 1960 Universal Edition. In EXAMPLE 1.15, the *f* dynamic for the boxed bass clarinet note in measure 131 actually appears as *mp* in the 1990 Universal Edition.

prime form in their final statement. These structural bookends help hold the piece together and provide a fundamental unity.

2. *Kreuzspiel*'s Connection

Now that the complexities of the second and third section have been more thoroughly explained, I will explore how *Kreuzspiel* can be understood in its place in Stockhausen's *oeuvre* and within the development of his compositional approach. *Kreuzspiel*'s ensemble, Stockhausen's serial treatment of segments and groups, and his straying from strict serial structure in his manipulation of various parameters in *Kreuzspiel* represent significant aspects of Stockhausen's later compositions.

2.1 Ensemble and its implication for serial strands and timbre

Kreuzspiel's ensemble is its most obvious and superficial departure from the early serial works of Goeyvaerts, Boulez, and Messiaen which employed the piano exclusively. As Boulez explained, "The piano was chosen as the instrumental sound source, not so much on account of its direct qualities as for its lack of failings."[28] *Structures*, *Mode de valeurs*, and *Sonata for Two Pianos* seem to be more concerned with structural content than timbre; composing for piano alone avoided the distraction of timbre. Stockhausen's deliberate use of wind and percussion instruments helped pave the way for later serial ensembles. To Toop, the prominent role of percussion in *Kreuzspiel* is its most important serial development:

> Whereas the dodecaphonic composers had been almost embarrassed by the presence of unpitched percussion (Webern avoids it completely in the two purely orchestral works-the Variations and the Symphony) and usually used them to reinforce (rather, to betray) stylized conventional gestures, in *Kreuzspiel* the

[28] As quoted in Toop, "Messiaen/Goeyvaerts," 162.

> percussion are as well able to carry serial organization as the pitched instruments.[29]

In the first section, the pitched instruments are all involved in a single serial process, while the tumbas and toms each have their own serial strand. Indeed, the straightforward tumbas help elucidate Stockhausen's technique quite clearly. The third section treats both the percussion and pitched instruments equally, placing comparable importance on each. As I will explain later, the importance of unpitched instruments in *Kreuzspiel* highlights a fundamental progression in Stockhausen's serial approach: by using percussion, Stockhausen attempts to control seemingly unrelated musical domains (pitch, timbre, and duration) by synthesizing them into a single parameter.[30]

Along those same lines, it should also be noted that the timbre of the enlarged ensemble provided a new domain for Stockhausen to control with his serial techniques. For early post-war serialists grappling with the system itself, timbre often remained neglected (as noted above). In his next published composition, *Kontra-Punkte* (1952), Stockhausen places additional emphasis on timbre. As in *Kreuzspiel*, the instruments are lumped together into somewhat independent units.[31] Stockhausen controls the timbre of the piece by planning a ratio-based system for durational lengths of each instrumental group's music, and the piano grows to prominence as the rest of the instruments drop out. In Stockhausen's words, the instruments "merge into a single

[29] Toop, "Messiaen/Goeyvaerts," 163. Though pieces such as Messiaen's *Turangalîla Symphonie* (1948) preceded *Kreuzspiel* in its serial treatment of rhythm and percussion instruments, Stockhausen had not heard it. According to Michael Kurtz, Stockhausen's only experience with Messiaen's music before arriving at Darmstadt was a performance of *Trois petites liturgies* (1944) in 1950. Only after hearing *Mode de valeurs* did Stockhausen begin to incorporate Messiaen's techniques into his own music. For more on this relationship, see Michael Kurtz, *Stockhausen: A Biography,* trans. by Richard Toop (London and Boston: Faber and Faber, 1992), 27-37.

[30] Of interest here is Stockhausen's understanding of the development of the different parameters in Western music. Chronologically, melody was developed first, followed by rhythm and then dynamics. Only with Schoenberg's *Klangfarbenmelodie* was timbre incorporated as an integral part of music. This attitude is summarized in Jonathan Cott, *Stockhausen: Conversations with the Composer* (NY: Simon and Schuster, 1973), 90.

[31] For instance, flute with bassoon or trumpet with trombone. These are analogous to the pitched and non-pitched instruments in *Kreuzspiel.*

timbre: that of the piano (struck strings)."[32] This immediately brings to mind the result of the crossing pattern in *Kreuzspiel*, where the piano, playing at the extreme registers, ends as the lone pitched instrument, the culmination of the piece. Although the connection to *Kreuzspiel* may seem superficial, this treatment of the piano shows a similar, yet slightly more sophisticated technique in timbral control. For Harvey, this dropping out (or merging) of instruments and its effect on timbre is one of the more important aspects of *Kontra-Punkte*, showing "another example of Stockhausen's careful attention to dimensions of form not normally systematized." [33]

Stockhausen moved into the electronic studio shortly thereafter. From 1952 to 1954, he composed three experimental works that explored different aspects of timbral control.[34] In his *Konkrete Etüde* (1952), Stockhausen serially combined basic recorded samples from the attacks of damped piano strings. A year later, his *Elektronische Studie I* (1953) represented a more fundamental goal of timbral control; individual, pure sine tones were superimposed to create sounds "which are totally still, but out of which individual partials emerge into the foreground one after another at predetermined times."[35] However, the generative method of creating new electronic sounds with sine waves is somewhat deficient, since it is, as noted by Maconie, "virtually restricted to the production of complexes of unnaturally few partials."[36] In his *Elektronische Studie II* (1954), Stockhausen chose to incorporate filtered sounds as well, employing subtractive techniques in addition to the additive ones of his former electronic piece. Both pieces highlight Stockhausen's general approach to the electronic medium. As summarized

[32] As quoted in Karl Heinrich Wörner, *Stockhausen: Life and Work*, trans. and ed. by Bill Hopkins, Berkeley and LA: University of California Press (1973), 31.
[33] See Harvey, *Music of Stockhausen*, 21-22 for a detailed analysis of *Kontra-Punkte*.
[34] See Maconie, *Works of Stockhausen*, 48-57, for a more detailed explanation and analysis of his initial studies in the new electronic medium. I focus merely on the use of the electronic medium for timbral control here. These pieces also represent interesting steps in Stockhausen's serial thought processes, utilizing "magic squares" and innovative notation.
[35] As quoted in Maconie, *Works of Stockhausen*, 51.
[36] Ibid., 54.

by Decroupet and Ungeheuer, this approach can be seen in contrast to Boulez's early *Etudes concrètes*:

> [The] bases [of Boulez's early electronic pieces] are significantly different from those of the *Konkrete Etüde* that Stockhausen undertook in December 1952. Boulez abides by the natural facts of the materials used…and applies to them a quantified system of the serial type, whereas what Stockhausen is seeking, as early as the first phase of work, is to constitute a malleable material which can, without restrictions, undergo a whole series of transformations—and this independently of its starting nature.[37]

By treating the electronic sound as a "malleable material" which can be transformed, Stockhausen clearly sought to bring timbre into the same controllable realm as other domains of music. Like his addition of winds and percussion to *Kreuzspiel*'s ensemble, this malleable material allowed Stockhausen to manipulate and systematize his music's timbre in novel ways.

After his early electronic studies, Stockhausen applied his techniques of serial control and timbre manipulation in *Gesang der Jünglinge* (1954). The work has been praised as one of his early masterpieces, which no doubt arises not just from its (incomplete) end result,[38] but also from Stockhausen's compositional objective. According to his notes on the piece, *Gesang* "proceeded from the idea of bringing together into a single sound both sung notes and electronically produced ones: their speed, length, loudness, softness, density and complexity, the width and narrowness of pitch intervals and differentiations of timbre *could all be made audible exactly as I imagined them*, independent of the physical limitations of any singer."[39] It is abundantly clear by now that Stockhausen sought to bring these formerly disparate musical domains under the rule of a single system. An analysis of *Gesang* lies beyond the purview of this

[37] Pascal Decroupet and Elena Ungeheuer, "Through the Sensory Looking-Glass: The Aesthetic and Serial Foundations of *Gesang der Jünglinge*," *Perspectives of New Music*, vol. 36 no. 1 (1998): 98.
[38] As noted by Maconie, the deadline for composition of *Gesang* resulted in the omission of a planned final section. Maconie, *Works of Stockhausen*, 61.
[39] Wörner, *Stockhausen*, 40-41, italics added.

paper, but two basic compositional elements should be highlighted.[40] First, the creation and control of timbres is an integral part of the structure of the piece, while the manipulation and serialization of the voice provides another novel technique. Second, Stockhausen most clearly sought to command an additional, generally overlooked domain in *Gesang*: space. The piece is written for five speakers surrounding the audience, placing the listeners within the sound. As Stockhausen explained: "here for the first time the direction and movement of sounds in space was shaped by the composer and made available as a new dimension in musical experience."[41] Perhaps this could be understood as an extension of *Kreuzspiel*'s meticulous stage arrangement noted earlier. With the position of every instrument and performer carefully planned, Stockhausen seems very concerned with the spatial dimension even in his first published work.

The same impulse to control space materializes via traditional instruments in *Gruppen für drei Orchester* (1955-57). This massive, dense work calls for three separate orchestras, placed in a horseshoe shape around the audience. Composed concurrently with *Gesang*, *Gruppen* foregrounds the concept of space as musical parameter, but, as noted by Imke Misch, "the movement of sound through space does not stand as a matter of priority at the center of the conception of the work."[42] Instead, it is the superficial manifestation of the inner system. As in *Kreuzspiel* and *Kontra-Punkte*, different instrumental groups are able to carry out distinct serial strands. To Misch, "the various spatial dispositions of the sounding bodies enable first and foremost a synchronous realization of up to three musical processes, each of which elapses at its own speed."[43] Stockhausen's employment of spatial dimensions and instrumental groups reflects

[40] These are further expanded in Decroupet and Ungeheuer, "Sensory Looking-Glass."
[41] As quoted in Wörner, *Stockhausen*, 41.
[42] Imke Misch, "On the Serial Shaping of Stockhausen's *Gruppen für drei Orchester*," *Perspectives of New Music*, vol. 36, no. 1 (1998): 143.
[43] Ibid. The issue of tempo and speed in *Gruppen* will be discussed later.

another, more basic compositional evolution that began in *Kreuzspiel*: the move away from pointillism.

2.2 A move away from pointillism

The instrumental groups of *Gruppen* represent the underlying conception of serial treatment of segments or groups of musical parameters that was first highlighted in the preceding analysis of *Kreuzspiel*. As noted above, the second section of *Kreuzspiel* displays segments or *groups* of points that move together across the central axis of symmetry of the 12-tone chart, as opposed to the manipulation of individual notes. (See EXAMPLE 1.10, for example.) One senses a certain amount of apprehension in the construction and employment of these groups in *Kreuzspiel*. They are not systematically treated, and they appear to be used only in support of the underlying cross permutations. Groups of notes immediately come to the fore in his next published work, *Kontra-Punkte*, as well as in the long-neglected *Formel* (originally composed as part of *Spiel*, but only later published). Of *Formel*, Stockhausen wrote that "instead of the very precisely formed single notes there are little complexes…it is these little crystalline blooms that pass through a register form."[44] The little complexes, or *Glieder*, are marked by their use of different musical domains: dynamics, tempo, instrumentation, etc.[45]

Stockhausen turns even more clearly towards segmental thinking in *Kontra-Punkte*, which is organized, as Harvey explains, not around single notes, "but includes many other factors such as elaborate strings of notes, big chords, real 'groups' and lengthy tempo-defined sections. In short, what is perceived as a unit becomes larger and more like what is normally understood to

[44] Kurtz, *Stockhausen,* 43.
[45] See Maconie, *Works of Stockhausen*, 23-26 for a fuller analysis.

be a musical idea—several components making up one entity of unified character."[46] These larger units spell the end of Stockhausen's pointillist phase of composition, according to Maconie, indicated by "a wider matrix of organizational categories increasingly sensitive to aural perceptions."[47] This is an important point; in *Kreuzspiel*, the groups remained secondary to the basic pointillist crossing scheme, and indeed remained aurally obscure. In *Kontra-Punkte*, they become more obvious, and provide the basic malleable material.

Gruppen most clearly displays Stockhausen's serial treatment of complexes of notes, distinct strands, ensemble partitions, and time. Indeed, it can be seen as the culmination of his preoccupation with a move away from pointillist serialism, begun already in *Kreuzspiel*. *Gruppen* has been amply analyzed elsewhere,[48] but two important concepts underpin the work:

> In constructing and combining the…series [used in *Gruppen*], Stockhausen was guided firstly by the idea, decisive for his musical thinking at that time, of unity and perfection, inasmuch as "everything is coherently related": almost all organizational fundamentals and forms are, so to speak, developed out of or derived from a single, small but at the same time exceedingly complex and versatile, adaptable core element. Secondly, Stockhausen carried the idea of groups over to the large-scale formal structure by joining the individual groups together—according to serial principles, but independently of the twelve-element units of the all-interval rows—into larger "group formations."[49]

Both of these ideas will be discussed briefly below. The unity, coherence, and relation of domains from a single element and the growing scale of groups and groups of groups led Stockhausen to new and interesting frontiers of composition.

[46] Harvey, *Music of Stockhausen*, 21.
[47] Maconie, *Works of Stockhausen*, 44.
[48] Misch, "Serial Shaping," 143-187. Also Harvey, *Music of Stockhausen*, 55-76.
[49] Misch, "Serial Shaping," 160.

2.3. Time and Unity

As shown in the above analysis of *Kreuzspiel,* Stockhausen was at least somewhat concerned with the overlaps of pitched instrument notes and percussion impulses. When these occurred, he occasionally changed a parameter from what it "should have been" in his given crossing system. Similarly, *Kreuzspiel*'s use of percussion brought the durational aspect of his integrated modes to the fore. Both of these highlight Stockhausen's interest in the relationship between the musical domains of pitch and rhythm. In his famous and oft-cited essay "…how time passes…,"[50] Stockhausen arrived at the conclusion that pitch and duration differ not in kind, but by degree. By gradually decreasing the length of a "phase," or the time interval between two impulses, Stockhausen noted that impulses become less distinguishable and indeed are perceived as pitch.[51] By foregrounding duration and the relationship between pitch and rhythms, Stockhausen really sought to incorporate a fundamental understanding of musical time into his works. In doing so, he proposes that the modes of duration in *Kreuzspiel* adapted from *Mode de valeurs* were no longer appropriate. These scales of twelve durations, "arrived at by the *multiplication of a smallest unit,*" resulted in a preordained hierarchy in which "the long values devoured the short ones" and in which "the result was a slow average speed."[52] To combat the last of these criticisms, multiple series of proportions were "simply piled on top of one another" to increase the average speed, or the whole duration series was "transposed" by a change of tempo.[53] Nothing, really, could be done to address the former issue of long values dominating over short ones without a revision in method. To Stockhausen, these issues were unacceptable. "Our

[50] Stockhausen, "…how time passes…," trans. by Cornelius Cardew, *Die Reihe* 3 (1959): 10-40.
[51] Ibid., 10.
[52] Ibid., 12-13. Stockhausen also analogizes the multiplicative form of the early serial durational scale with the subharmonic series of proportions.
[53] Ibid., 14.

musical perception," he claimed, "reiterated that something was not in order in the work being done on time-structures, and the mistake was sought in the compositional method."[54]

These issues are seen in *Kreuzspiel* and in Stockhausen's complication of its serial structure. The layering of multiple serial strands, with their independent durational modes, in the third phase especially, resulted in a need to change certain elements during overlaps. The initial phase's regularity of serial construction was disturbed in the later two sections, and its tempo was "transposed" in the manner mentioned above. The inadequacy of the compositional method was remedied by abandoning it briefly instead of investigating the root of the problem. Not until *Gruppen*, when the concepts of space and time were treated in tandem, did it occur to anyone, as Stockhausen put it, "to return to the elements, to duration-proportions themselves—to ask whether perhaps the contradiction lay in the basic tenets, in primary scale-relationships."[55]

Stockhausen's conflation of pitch and duration led him to a fundamental investigation of these basic tenets. Instead of creating modes and series of durations based on the multiplication of a fundamental unit (sixteenth notes or sixteenth note triplets for *Kreuzspiel*, for instance), Stockhausen decided a logarithmic scale analogous to the division of the pitch scale would be appropriate. This led to a radical reinterpretation of the basic domains of music: as noted above, pitch and duration were directly related, and, analogously, timbre and rhythm were also. As timbre is the spectrum of the overtone series of a given fundamental tone, so is rhythm, to Stockhausen, the spectrum of the divisions of a single fundamental duration results in the rhythm. As summarized by Misch, "within the framework of Stockhausen's new duration conception, space and time are elements of a structural continuum, which was elevated to a

[54] Stockhausen, "…how time passes…," 15.
[55] Ibid.

principle for the serial shaping of time in *Gruppen*…and was combined with the idea of group composition."[56] The precedents for both of these ideas can be easily traced to *Kreuzspiel.*

The other result of Stockhausen's theorizing in "…how time passes…" was the introduction of statistical components and aleatory processes in his music. With the logarithmic scale of durations, a certain amount of rhythmic uncertainty could be assumed in a live performance on real instruments (as opposed to pre-recorded electronic pieces.) In this way, compositions of tempi and durations could be more flexible. Stockhausen noted this towards the end of his article, in which he considered the possibility of composing in terms of *fields*, where the "rightness" of a performer's realization is checked against itself, rather than against the time-notation of the score.[57] He pondered this idea alongside the possibility of compositional procedures that he would use in his "Moment-Form" pieces like *Zyklus* (1959), in which a percussionist, surrounded by sixteen pages of graphically-notated music, is instructed to pick a starting point and play around the circle in either direction. Stockhausen would continue to grant additional aleatory tasks to the performer, culminating in his intuitive pieces like *Aus den Sieben Tagen* (1963), which give the performer vague, non-musical instructions.

Additionally, the thought processes in "…how time passes…" led Stockhausen to the incorporation of statistical methodologies in his compositions. The superposition of many different groups fosters aural ambiguity on the level of individual notes, which could lead, in Stockhausen's terms, "to a complete suspension of recognizable phase-relationships—to structured 'noise.'"[58]

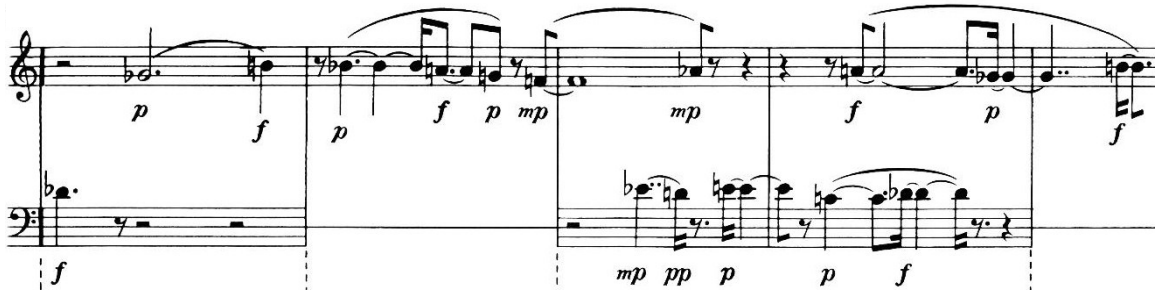
Both his "structured noise" and the aleatory possibilities in the moment-form works can find precedence in *Kreuzspiel.* The statistical effect, the overall aural understanding of the

[56] Misch, "Serial Shaping," 158-159.
[57] Stockhausen, "…how time passes…," 37.
[58] Ibid., 15.

registral crossing pattern clearly reveals itself above the other pointillistic crossing patterns. Aleatory indeterminacy gives birth to unique and often unforeseen musical outcomes. In *Kreuzspiel*, the registral crossing pattern also generates an often overlooked result:

> …I'd like to make it clear that no one up to today has ever recognized that in the middle of the first movement [of *Kreuzspiel*], at the beginning and the end of the second, and in the middle of the third, there's a very singable episode contained within the interval of an octave. People tend not to take note of the process of coming towards, of preparation for, melody: the musical texture goes on, in fact, without any deviations until it arrives just one time at the moment of song…And here, in fact, there's a brief interlude for woodblock, just to point up the shapely appearance of the melody, an easy, singable melody…To look for singability in the entire course of a composition is absurd. The moment reserved for song must always be very mysterious…In this sense there is in every one of my compositions the moment in which I sing my song too…All the rest is just preparation for that moment.[59]

Maconie has noticed this as well, describing the revelation more generally: "in using sustaining wind instruments to highlight pitches as they pass through the mid-range, Stockhausen has brought about a situation in which melodic formulations are spontaneously generated. These melodies are not serially ordered, though they are produced as a consequence of serial operations."[60] This provides a nice link between Stockhausen's aleatory pieces and his initial foray into serialism; both are consequences of meticulous planning and intense compositional



EXAMPLE 1.16. A "singable melody" Stockhausen notes at the beginning of the second section of *Kreuzspiel* in measures 99-103. Staves correspond to oboe (top) and bass clarinet (bottom).

[59] Mya Tannenbaum, *Conversations with Stockhausen*, trans by David Butchart (Oxford: Clarendon Press, 1987): 72.
[60] Maconie, *Works of Stockhausen*, 23.

control, but both can ultimately surprise the listener in their results. A single, unifying musical attitude remains below the seemingly disparate methods of composing.

In describing his compositional methodology, Stockhausen explains his degree of technical perfectionism:

> The checking and the chiseling, once things are done, concern details, while the plan of an entire work is there, in front of me, right from the very beginning of every large-scale work. A plan, which, above all, fixes for me all the proportions, the duration, the dynamics, the sound quality, the ranges, the harmonies…From the time of *Kreuzspiel* onwards, I've planned the structure of all my works, from the number of movements to the evolution of single parameters to the analysis of the particles of sound or groups of sound to be used.[61]

This careful planning of all musical aspects, even the basic tenets of music, coalesces in Stockhausen's search for unity. In his equation of duration and pitch, and his combination of time and space, Stockhausen found, "for the first time, ways to bring all properties under a single control."[62] Through this control, he was able to push the boundaries of musical composition throughout the rest of his career, able to invent systems of notation, create spaces for unique performances, and write some of the most influential music of the twentieth century.

3. Conclusion

Stockhausen's *Kreuzspiel*, his first published piece, presents some fundamental elements of his underlying compositional philosophy. Through a rigorous investigation of *Kreuzspiel,* I contend that Stockhausen's use of ensemble, his move away from "pointillism," and his obfuscation and complication of symmetric, serial processes—all important issues tackled in his later compositions—can be seen active factors in this early work, not just as latent curiosities. Further,

[61] Tannenbaum, *Conversations with Stockhausen,* 17.
[62] As quoted in Michael Clarke, "Extending Contacts: The Concept of Unity in Computer Music," *Perspectives of New Music* vol. 36, no. 1 (1991): 222.

a connection can easily be made between his early serial works and his later pieces that investigate and reengage the basic domains of music as described in "…how time passes…" As Coenen describes:

> In his earlier years Stockhausen emphasized technical details, explained his working material and construction principles explicitly. Later he concentrates more on the fundamental assumptions and working principles, which are not different from the ones he had before, but are only stressed more. It is clear that the "big shift" in the early seventies in Stockhausen's writings is nothing more than a shift of attention in his paradigm from the technical side to the more philosophical side; but it still is the same paradigm.[63]

Maconie suggests a similar connection between Stockhausen's serial works and his later aleatory ones: "There are powerful opposing forces at work in [Stockhausen's] music: the one an overwhelming tendency to organize everything according to some master plan, the other an equally powerful readiness to change everything in a moment of impulse…To ask which is to ask the wrong question: the mix, the humour, is all."[64] *Kreuzspiel*, with its strictly organzed first section and its manipulated and distorted second and third sections, summarizes the humor and beauty of Stockhausen's music. I hope that, through this analysis, *Kreuzspiel* can be understood more fully as an important initial exploration and investigation of early serial and general compositional issues that Stockhausen would continue to pursue throughout his career.

[63] Coenen, "Stockhausen's Paradigm," 22.
[64] Maconie, *The Works of Stockhausen*, ix-x

CHAPTER 2:
Harmonic Development and The Theme of Eternity
In Messiaen's *Louange à l'Éternité de Jésus*

1. Background

According to Paul Griffiths, the premiere of Olivier Messiaen's *Quatuor pour la fin du temps* has become, along with the inaugural performance of Stravinsky's *Rite of Spring*, "one of the great stories of twentieth-century music."[1] Given before an audience of prisoners and guards in German-occupied Poland on a cold January day in 1941, the Quartet surely provided a gratifyingly liberating experience for its listeners, however transient it may have been. Messiaen recalled that his works have never "been heard with as much attention and understanding" as at this concert, claiming that the audience numbered in the thousands.[2]

Rebecca Rischin has shown the audience was much smaller than Messiaen claimed; and further, it is hard to believe that a heterogeneous, international crowd of listeners could possibly understand the technical achievements of the piece.[3] But despite Messiaen's challenging and progressive harmonic writing, the Quartet was received and contemplated in silence. "Even if these people knew nothing about music," Messiaen commented, "they readily understood that this was something special."[4] What was that something special? As has been noted, Messiaen claimed that the piece was not necessarily inspired by his time as a prisoner.[5] Rather, the Quartet was motivated and conceived largely in biblical terms, as the prefatory quotation from the Book of Revelation attests, and more generally as a meditation on time and eternity. The piece, an investigation of something larger, of something outside of time, represented the unknown to the

[1] Paul Griffiths, *Olivier Messiaen and the Music of Time* (London: Faber and Faber, 1985), 90.
[2] Ibid.
[3] Rebecca Rischin, *For the End of Time: The Story of the Messiaen Quartet* (Ithaca, NY: Cornell University Press, 2003), 61-70.
[4] As quoted in Rischin, *For the End of Time*, 69.
[5] Robert Sherlaw Johnson, *Messiaen* (Berkeley: University of California Press, 1989), 61-62.

prisoners, a revelation of hope to ponder. As two musicians of the premiere, E.T. Pasquier and J. Le Boulaire, wrote in their dedications to Messiaen on a program, the piece provided an escape from the prison, a voyage to Paradise, or at least a notion of something grand.[6] Surely this is what captivated the prisoners during the concert: a glimpse of something awesome beyond the walls, of something incomprehensible worth imagining.

Messiaen pronounces a premise of eternity unequivocally in the preface to the fifth movement, *Louange à l'Éternité de Jésus*:

> Jesus is here considered as the Word. A long phrase for the cello, infinitely slow, magnifies with love and reverence the eternity of this powerful and gentle Word, "which the years can never efface." Majestically, the melody unfolds in a kind of tender and supreme distance. "In the beginning was the Word, and the Word was in God, and the Word was God."[7]

This movement and the eighth movement, *Louange à l'Immortalité de Jésus,* display generally homophonic textures. From 1935 until the composition of the *Quatuor*, Messiaen wrote chiefly for a solo instrument or solo voice accompanied by the piano; as Robert Sherlaw Johnson notes, the two musical entities were often "virtually treated as one instrument," rhythmically interdependent.[8] Unsurprisingly then, the two slow *Louange* movements of the Quartet in this same style were actually lifted or adapted from earlier works.[9] The rest of the quartet was written during Messiaen's time in the prison, and was thus contemporary with his *Technique de mon Langage Musical*.[10]

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[6] As noted in Rischin, *For the End of Time*, 70.
[7] Messiaen's preface to the movement, as translated by and quoted in Anthony Pople, *Messiaen*: *Quatuor pour la fin du Temps* (Cambridge: Cambridge University Press, 2003), 53.
[8] Johnson, *Messiaen*, 62.
[9] Griffiths, *Music of Time*, 101.
[10] I will refer to the authoritative English translation: Olivier Messiaen, *Technique of my Musical Language*, trans. by John Satterfield (Paris: Alphonse Leduc, 1956).

This treatise is, as Paul Griffiths notes, "very much more concerned with how the music is put together than with how it sounds and is heard."[11] In *Technique*, Messiaen spells out some of the thought processes and techniques, almost like ingredients in a recipe, that govern his use of rhythm, harmony, and melody during this phase of his compositional career. Since it was transcribed from a work written before Messiaen's *Technique*, the fifth movement engages with processes and ideas from *Technique* in interesting and often convoluted ways, as opposed to other movements composed concurrently with *Technique* that clearly investigate the ideas explained in his book.

Louange à l'Éternité de Jésus, situated between two predominantly monophonic, rhythmically intense movements in fast tempi, provides a distinct contrast in compositional approach and affect. This "infinitely slow" cello solo, accompanied by a chordal three-voice piano texture, provides an unobstructed sonic space, aurally emphasizing each chord and sonority. As such, the most striking feature of the fifth movement, to this author at least, is Messiaen's use of harmonic language in the vertical dimension. Anthony Pople, whose impressive analysis of the Quartet I will compare to my own, agrees that the harmonic and tonal facets of the movement provide rewarding analytical material.[12] "The tonal architecture of this movement," he explains, "repays further analysis, not least because it emerges that the relationship with Messiaen's modes is less straightforward [than in the other movements of the piece.]"[13]

[11] Griffiths, *Music of Time*, 93.
[12] Although our analyses are very similar, I consulted Pople's only after completion of my original analysis. The differences that arise provide starting points and motivation for further discussion and engagement with the music. I will show, in the discussion of section **IIb**, how the differences that arise lead to a unique interpretation of formal elements.
[13] Pople, *Messiaen*, 57.

My analysis will thus take an in-depth look at the progress of harmonies and pitch-class collections used throughout the movement, with an emphasis on the relation between Messiaen's modes of limited transposition from his *Technique* and more traditional tonalities.[14] In doing so, I challenge Messiaen's own analysis of the music, which stems from his belief that melody guides form.[15] He states this viewpoint generally and clearly in the opening chapter of *Technique*:

> The melody is the point of departure. May it remain sovereign! And whatever may be the complexities of our rhythms and our harmonies, they shall not draw it along in their wake, but, on the contrary, shall obey it as faithful servants; the harmony especially shall always remain "true," which exists in a latent state in the melody, has always been the outcome of it.[16]

Though Messiaen's thinking and analysis are geared towards a melodic formulation, I believe that the underlying harmonic framework and its development provide an illuminating and refined explanation of the movement's perceptual structure. Recall Griffiths's claim above, that Messiaen is more concerned in his *Technique* "with how the music is put together than with how it…is heard." Given the extremely slow tempo, with harmonic motion coming at an average rate of six changes of chord per minute,[17] each shift of modality or tonality becomes massively important and audibly apparent. Also, I believe that this interaction between traditional tonality and less conventional modalities would have made this movement especially accessible and compelling to those present at the premiere. Surely this aspect of the *Louange* affected the natural understanding Messiaen apparently observed in its initial audience.

In addition to a harmonic analysis of the *Louange*, I will provide some brief insight into the motivic development of the cello line. The lyrical and poignant melody is truly sublime, and

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[14] See Johnson, *Messiaen*, 16 for a full list of these modes.
[15] As Johnson points out, this was Messiaen's mindset at least up to the time of the *Technique* (Johnson, *Messiaen,* 22). Messiaen certainly altered this conception of structure and musical generation by the late 1940s, concerned more with new experimental rhythmic and modal systems in pieces such as *Cantéodjayâ* (1949) and *Études de Rythme* (1949-50).
[16] Messiaen, *Technique*, 13.
[17] Diane Luchese, "Olivier Messiaen's Slow Music: Glimpses of Eternity in Time," (PhD diss., Northwestern University, 1998), 91.

one can only imagine the effect it had on the POWs. I hope that my analysis will shed some light onto the more technical aspects of Messiaen's treatment of the descant, as motivic development does play a role in the structure of the piece. Such development, as will be shown, reinforces the harmonic evolution of the movement at times while challenging it at others. In both of these roles, it serves to support the structural divisions I propose. During my analysis, I will compare the results to Messiaen's ideas of form in his *Technique*. Finally, I will briefly engage with the theme of eternity in the movement, and will suggest a harmonic, rather than melodic, interpretation of the structure leads to a satisfying understanding of the relationship between this *Louange* and Messiaen's investigations of timelessness.

2. Analysis

Louange à l'Éternité de Jésus can be broken down into three large sections, as summarized in EXAMPLE 2.1, which I will label **I**, **II**, and **III** so as not to confuse them with the rehearsal markings of **A**, **B**, **C**, and **D** to which this paper shall also refer. Section **I**, an exposition-like opening, lasts from measure 1 through measure 12, ending at rehearsal **B**. Section **II**, which develops material from section I, runs from rehearsal **B** to measure 23, at which point there is a four bar tension-building, climactic transition, which I label "Transition." Section **III**, which acts like a recapitulation, begins at **D** (measure 27), and lasts until measure 33, where a coda ends the movement. Though I hesitate to call this a literal sonata form, my three main structural divisions imply just such an interpretation, and I will show that the movement loosely follows that archetype.

In his *Technique*, Messiaen uses this movement as his illustration of "song-sentence," a melodically oriented musical form. "The musical sentence," he describes, "is a succession of

periods. The theme is the synthesis of the elements contained in the sentence, of which it generally constitutes the first period."[18] The song-sentence is in three "periods" or sections: **I**. theme (with antecedent and consequent); **II**. middle period, "inflected toward the dominant; and **III**. final period, an issue of the theme."[19] This sentence, essentially an ABA' form, generally comports with my sonata-form hypothesis above. The main difference lies in Messiaen's explanations of harmony, which he describes in standard tonal vocabulary. A more sophisticated explanation of a tonal/modal interaction that considers his modes of limited transposition leads to a nuanced and convincing understanding of the movement's structure.

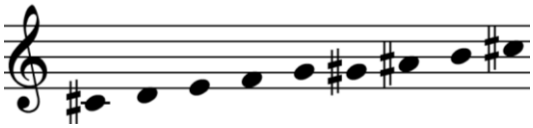
Measures	Section	Function
1-6	Ia	Exposition
7-12	Ib	Varied Repeat
13-16	IIa	Development
17-18	II "Transition"	
19-22	IIb	
23-26	Transition	Climax
27-33	III	Recapitulation
34-35	Coda	Resolution

EXAMPLE 2.1. Basic structural divisions of *Louange à l'Éternité de Jésus*.

Section I – Measures 1-12

Ia – Section **I** is divided into two halves, **Ia** and **Ib**, each six measures long. **Ia** introduces primary motivic material and, more important to this analysis, presents the primary harmonic language of the piece. The preceding movement, *Intermède*, ends quite unequivocally in E major.[20] With this harmony still in the listener's mind, the cello's initial minor third between B

[18] Messiaen, *Technique*, 37.
[19] Ibid.
[20] As noted by Pople, *Intermède* conspicuously uses "regular rhythms and phrasing; and also—whilst it makes considerable use of Messiaen's modes—[has a] clear tonal orientation and formal layout." Pople, *Messiaen,* 47.



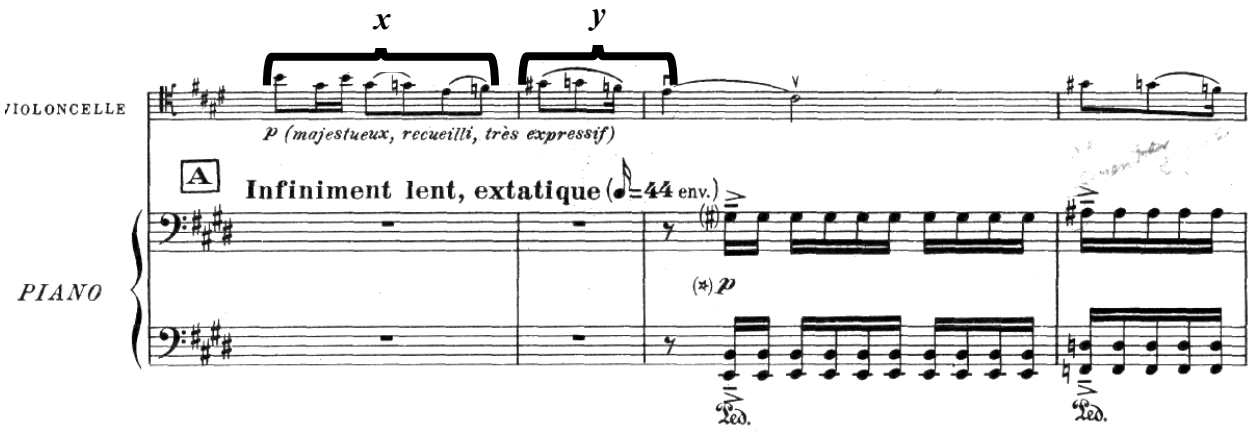
EXAMPLE 2.2. Messiaen's second mode of limited transposition, in its second transposition. Mode 2.2.

and G♯ in *Louange* seems to reinforce such a tonality. But the subsequent chromatic pitches of G♮ and F♮ immediately suggest a different harmonic structure. Similarly, the entrance of the piano on a root-position E major triad in the third measure alludes to a continuation of the key from the prior movement. But, the next triad of the piano in measure 4, enharmonically equivalent to A♯ major, coupled with the G♮ and F♮ of the cello, now sets the listener firmly outside of E major proper. With a little inspection, one can see that section **Ia** clearly states an octatonic collection based on E, the second transposition of Messiaen's second mode of limited transposition.[21] From here out, I label this mode 2.2. This mode, with its many chromatic half steps shown in EXAMPLE 2.2, superficially suggests a dissonant aesthetic, but Messiaen's deft employment of major triads displays the consonant aspects of the octatonic collection.

The main motivic materials of the movement are introduced in the first two measures, as shown in EXAMPLE 2.3. Though I will explain their development in section **II** later, I would like to draw attention to the different contours and rhythms. I propose that these two motivic units act much like the two different themes in a standard sonata-allegro form. Though not as diametrically opposed as the stereotypical heroic/lyrical theme binary of the 18th century sonata, these contours are independently mutated in the development section of this movement and

[21] I will refer to the transpositions of this mode as follows:
2.1. Half step between C and C♯
2.2. Half step between C♯ and D
2.3. Half step between D and D♯

represent distinct musical entities. Certainly, the exposition in Messiaen's *Louange* accomplishes this motivically and, as will be shown, harmonically as well.



EXAMPLE 2.3. The first four measures of the movement, showing motivic units ***x*** and ***y***.[22]

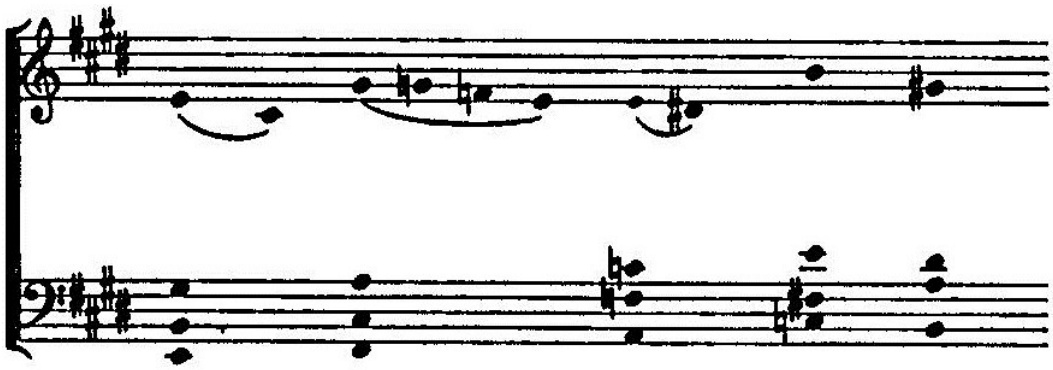
Ib – Section **Ib** repeats **Ia**, acting a bit like the repeat sign in a classic sonata movement, but Messiaen adds some harmonic development in the measures before section **II**. Measures 7-9 restate the initial material from measures 1-3 exactly, but there is a change of harmony in measure 10. There, the piano plays a root-position F♯ minor triad, the first minor harmony of the piece thus far. Additionally, both F♯ and A lie outside of mode 2.2, expanding the available harmonic language. One possible reading of these notes is a shift back towards the E major tonality from the prior movement, with the cello's persistent octatonic melody initially in opposition. In the very next measure (11), however, the piano moves to an F major triad, while the cello proceeds down to D♯, the first melodic departure from **Ia**. What is happening here? The cello's D♯ seems to assume the role of E major support, while the F chord muddles the harmonic space. The F chord possibly comes from a new transposition of the octatonic collection, the third transposition (mode 2.3), which, as it turns out, will arrive in full force during the *Transition*. For

[22] All score excerpts from Messiaen, *Quatuor pour la Fin du Temps*, Paris: Editions Durand & Cie., 1942.

now, the F major triad can be seen as a foreshadowing, adding some chromaticism and confusing the harmonic landscape, complicating the tension between E diatonicism and the octatonicism from **Ia**. These measures also presage more complicated interactions between the cello and piano in terms of harmonic content.

In measure 12, Messiaen introduces his first non-triadic trichord in the piano, C-F♯-E. Like the previous F major chord, this collection does not fit neatly into either of this movement's established harmonic realms. In this case, however, the voice leading of the outer piano notes suggest a preparatory function, setting up the trichord in the second part of measure 12, B-A-D♯. This harmony looks and sounds a lot like a dominant seventh chord in E, missing the traditionally unnecessary fifth. The cello's G♯ above acts as an added-sixth, possibly even an appoggiatura. Griffiths sees Messiaen's use of added-sixth chords throughout the *Quatuor*, as well as diminished chords, as structurally important, often appearing at crucial moments. The given instance in measure 12 strongly supports this assertion. Here the added-sixth chord serves as a transition into section **II**, emphasized with a crescendo, the first dynamic instruction since the opening *piano* markings. The weight given to this chord, sustained for a full 2 beats with crescendo, again suggests a move to a more traditional E major harmony for section **II**. The harmonic motion from measures 9-12 is given in a reduction in EXAMPLE 2.4, borrowed from Pople's analysis. [23]

[23] Pople, *Messiaen,* 60.



EXAMPLE 2.4. Pople's reduction of measures 9-12.

To sum up the exposition, section **Ia** provides motivic material in the cello and introduces an octatonic pitch-class collection, the second transposition of Messiaen's second mode of limited transposition. In section **Ib**, Messiaen writes a varied repeat of section **Ia** with some new chromatic alterations outside of the initial mode, possibly suggesting a move towards a diatonic collection in E major. The two motivic units presented in the beginning and the two emphasized harmonic realms support an interpretation based on an archetypal sonata exposition. As will be seen in section **II**, the ambiguity in tonality or modality plays a key role in Messiaen's development both of harmonic space and of the initial melodic material.

Section II – Measures 13-22

IIa – Section **II** acts as much like the development section of a sonata form in that Messiaen elaborates, varies, and indeed develops both his harmonic language and his motivic material from the first section. Like section **I**, section **II** will be divided into two parts: **IIa** is from rehearsal **B**, measure 13, to measure 16, with a two bar transition into **IIb**, which begins at rehearsal **C**, measure 19, and ends at measure 23. As will become clear in my following analysis, this division is motivated by the disparate harmonic collections employed and by the different motivic material from section **Ia** that is developed in each part.

The B dominant seventh with added sixth from measure 12 is followed with an A major chord in the piano, with D♯ and B above in the cello in first beat of measure 13. Messiaen avoids a traditional cadence, but he does plant the music squarely in an E tonality here. Concentrating first on the progression of the bass through measure 16, diatonicism clearly provides a harmonic foundation during **IIa**. Each bass note is a member of E major, and a root position triad is built upon each. By providing consistent, open voicing of each chord, Messiaen noticeably references the analogous initial E major triad in measure 3, the primary harmonic theme area from the exposition. He varies the modality while holding the spacing constant from the piano in **Ia**.

The octatonic collection struggles to continue during **IIa**, nearly succumbing to the functional pull of diatonicism. For two full measures in the piano, E major reigns. But major triads built on D♯ and C♯ in measures 15 and 16 suggest a mixing these two pitch collections, with the F𝄪, E♯, and A♯ all coming from mode 2.2. Additionally, the cello line hovers between diatonicism and modality; the first half of measure 13 is clearly in E major, while the second half introduces the G♮ and F♮ of mode 2.2. Measures 14 through 16 continue this trend, with more chromaticism and an occasional pitch class C, which lies outside of the given harmonic binary. I will highlight the importance of C in the *Transition*.

In addition to the harmonic developments during **IIa**, the cello line also expands its initial motivic material, namely the opening melody from the first measure defined as ***x*** in EXAMPLE 2.2. The rhythm of eighth plus two sixteenth notes from the first beat of the piece, spanning an interval of a third is repeated in the first beat of each measure of section **IIa**. Even a cursory glance at the piece reveals that, outside of this development section, this rhythm occurs only in the first measure of the piece, the first measure of the exposition repeat in **Ib**, and in the first

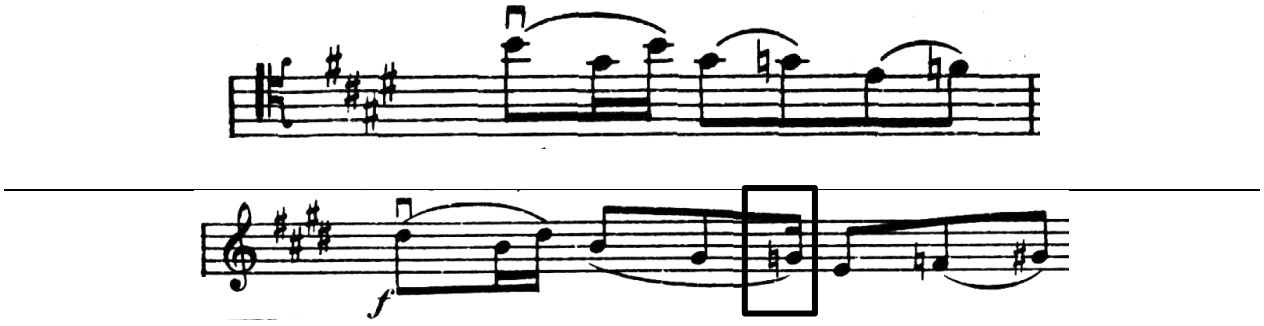
measure of section **III**, the recapitulation. Upon further inspection, the intervallic content is very similar to measure one as well, as shown in EXAMPLE 2.5, and follows the same contour as ***x***.

Measure	Duration	Linear Intervallic Content							
1	12	-3	+3	-3		-1	-3	+1	
13	**15**	-4	+4	-4	**-3**	-1	-3	+1	**+3**
14	**15**	-3	+3	-3	**-3**	-2	-2	+1	**+2**
15	**9**	-3	+3	-3		-1	-3		
16	**9**	-3	+3	-3		-1	-3		

EXAMPLE 2.5. The duration (in sixteenth notes) and linear interval content of measure 1 and section **IIb**, with additions in bold and differences underlined.

There are a few things to note here. First, Messiaen employs added values during these measures, simply defined by the composer as short values, "added to any rhythm whatsoever, whether by a note, or by a rest, or by the dot."[24] Compare measures 1 and 13, for instance. The added values in **IIa**, a sixteenth note addition in each measure, introduce mode 2.2 in each case. Messiaen employs this technique to provide harmonic interest in the melodic line. These additions obviously expand the thematic material while enhancing the tonal-modal tension.

One also notices that the supplementary intervals (in bold in EXAMPLE 2.5) of measures 13 and 14 augment the total durational content, from 12 sixteenth notes in measure 1 to 15 sixteenth notes in length, which also serves to slow the harmonic motion. This deceleration



EXAMPLE 2.6. Cello line from measures 1 (above) and 13 (below). Note the boxed added-value, which also re-introduces mode 2.2.

[24] Messiaen, *Technique*, 16.

highlights the harmonic implications of the melody while providing a moment of stasis, seemingly freezing the listener somewhere between E major and mode 2.2. Measures 15 and 16, conversely, speed up the harmonic motion drastically, not only by truncating the opening contour by leaving off the final ascending motion, but also by changing harmony every four sixteenth notes, instead of every fifteen. Messiaen uses such motion to jolt the listener away from the stasis created in the prior two measures. The increase in harmonic motion, further expanding the harmonic language, is accelerated in the transition to **IIb**.

Before moving on to the transition, I compare my interpretation of this section with Pople's. Though Pople concedes that a complete tonal and modal analysis of this section and those following lies beyond the scope of his book's focus, he does give an overview of the modal interaction here. He notes that the bass line is a part of both E major and mode 2.1, reinforced by the "characteristic mode 2 harmony of a major triad with superimposed augmented fourth" in the opening sonority of **IIa**.[25] Pople emphasizes an interpretation of E major and mode 2.1 working in tandem, since the bass line utilizes the notes shared between the two harmonic spaces. He also claims a "third constituent in the network of collections" is in the mix, mode 3.2, evidenced by the first bar of the period which is derived completely from it.[26]

To Pople, this third mode has been latent in the music all along, "scarcely audible" in the cello's opening melody, which contains pitches shared by 2.2 and 3.2.[27] Though I argue for a reading of 3.2 during the large transition section later, I find Pople's search for multiple modes a bit too cumbersome analytically, and more important, find it perceptually difficult. At the end of **Ib**, I suggested Messiaen's incorporation of notes outside of mode 2.2 created a move towards E major, a clear instance of the tension between tonality and modality. Pople finds the presence of

[25] Pople, *Messiaen*, 61.
[26] Ibid.
[27] Ibid., 59.

modes 2.3 and 3.1 here in addition to E major. He uses this reading to suggest that Messiaen's "inflection to the dominant" is already underway, while I will propose the end of **IIb** to be a more natural turning point toward the dominant.

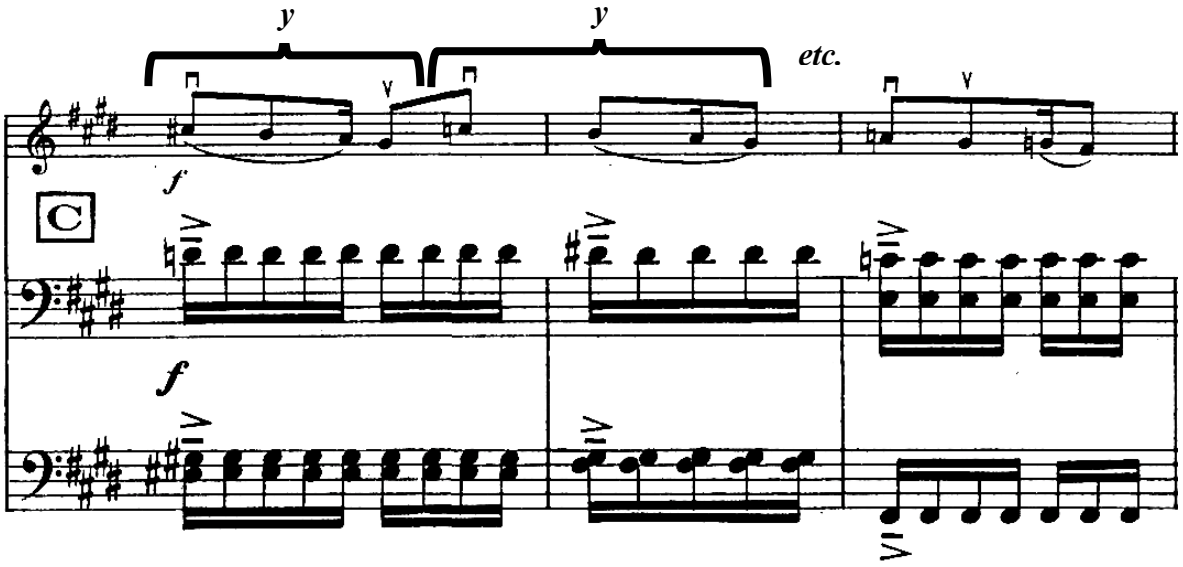
Jonathan Bernard, in his investigation of Messiaen's synaesthesia, noted that "especially in [Messiaen's] early music, we may expect tonal or key-oriented identity to merge with modal identity in many situations, resulting in various degrees of divergence from the literal contents of the modal collection."[28] I believe that this viewpoint bolsters my argument for the interaction between mode 2.2 and E major, rather than Pople's more taxonomic endeavor. There is a merger, at times, between these harmonic realms. So rather than investigate the modal makeup of each measure or verticality, I provide a more basic understanding of a simpler interaction between mode 2.2 and E major. Pople and I agree that the modal-tonal contact is a salient feature of the movement, in this section especially. However, I think that my simpler explanation provides a clearer guide towards the perceptible sonata form.

Section II Transition – After the piano E major and F♯ minor chords in measure 18, Messiaen employs a chromatic ascent of diminished triads in the piano with the quickest harmonic motion of the piece thus far. This two bar transition introduces a full chromatic saturation, providing utmost harmonic ambiguity. Just like the earlier added-sixth chord, the diminished triads come at a crucial part of the section, reinforcing Griffiths's claim about their importance. While the piano moves through this chromaticism, the cello recalls the opening minor third in its pitches, albeit in retrograde and in dotted quarter notes. The cello also remains in E major during its ascent during these two measures, save C♮. Again, this pitch class strikes at an important moment, obscuring

[28] Jonathan Bernard, "Messiaen's Synaethesia: The Correspondence between Color and Sound Structure in His Music," *Music Perception: An Interdisciplinary Journal*, vol. 4, no. 4 (1986): 67.

the E major triad in measure 17. The relationship between tonality and the original octatonic transposition, mode 2.2, is further confused during the section **II** transition.

IIb –While **IIa** develops motive ***x*** and the piano triads from the entrance, **IIb** focuses on the motivic material, ***y***, from measure 2 in the cello while the piano modulates through non-triadic trichords, much like those in **Ib**.[29] To start, the diminished triad motion from the transition is continued in measure 19 in the piano, where Messiaen employs a chord entirely from mode 2.2. The cello line reinforces this modality, containing pitches from the same collection until its C♮ at the end of the measure. Messiaen's bowing indication here suggests that the C could perhaps be read as an anticipation or incomplete upper neighbor to the B in measure 20, associated with the pitch-class collection of that measure instead of that in measure 19. This leads to a reading of a sequence of four-note descents in the melody, obviously harvested from motive ***y***, as shown in EXAMPLE 2.7.

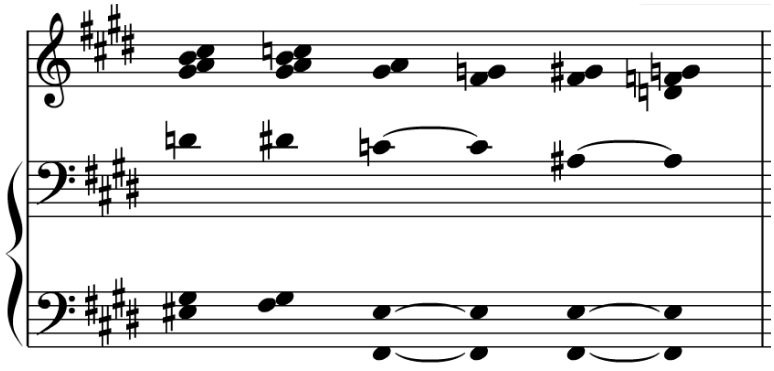


EXAMPLE 2.7. Development of motive ***y*** in **IIb** (measures 19-21).

[29] Note that the piano harmonies in **IIb** all suggest seventh chords of various qualities.

In measure 20, the added sixth B dominant chord reappears with the seventh as a passing tone in the cello. Like its transitional role at the end of **Ib**, this chord serves an important purpose. While it acted to reinforce a motion to E major at the end of section I, here it begins a modulation towards a new modality. The subsequent root-position half-diminished seventh chord on the downbeat of measure 21, accented by the largest leap thus far in the bass (an octave), is quite striking. In common-practice tonality, half-diminished chords often function as predominants, and the example in measure 21 can be analyzed analogously. On the third beat of the next measure, Messiaen spells out an F♯ dominant seventh chord with added sixth.

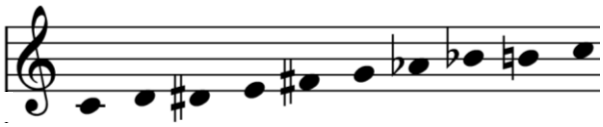
During **IIb**, Messiaen finally makes a strong move to a new harmonic transposition instead of continuing the tension between the original mode 2.2 and E major. Recall his definition of the song-sentence form, wherein the middle period is "inflected toward the dominant." The F♯ dominant seventh in measure 22 clearly recalls the B dominant seventh at the end of **Ia**, but is now transposed by a fifth to the dominant. Similarly, and as was hinted at in the discussion of **Ia**, a new transposition of Messiaen's second mode of limited transposition is emphasized. Messiaen shifts from mode 2.2 to mode 2.3 in measures 19-23, providing contrast to the B major inflection, and he essentially inflects the entire modal-tonal interaction toward the dominant.



EXAMPLE 2.8. Reduction of **IIb,** measures 19-22.
Each change of harmony in the piano part represents one measure.

Transition – Measures 23-26

The first beat of the *Transition* is an obvious G♯ minor chord, a classic deceptive cadence from the prior F♯ dominant. If there had been any question of the dominant inflection in the section **II**, this classic tonal progression removes that doubt. From here Messiaen ascends by minor thirds through mode 2.3, a collection that, naturally, contains PCs from both the original octatonic collection, (mode 2.2) as well as E major, but lacks the E so central to the movement thus far. There is an increasing frequency of C in the piano, a note that prominently appeared in the end of **Ib** during that section's harmonic expansion and is a distinguishing feature of mode 2.3. When the cello lands on it in measure 24, C is sustained for a full twelve sixteenth notes, the longest duration of the movement outside of the coda. With the piano accompaniment, there is yet another added-sixth chord, but the considerable weight and emphasis seem to indicate something new. Indeed, the mode from measures 24-26 is understood most easily as the first transposition of Messiaen's third mode of limited transposition, mode 3.1. Messiaen aurally emphasizes mode 3.1's distinguishing, generative set of 3 half steps, as well as the prominence of possible augmented triads.



EXAMPLE 2.9. Mode 3.1.
The first transposition of Messiaen's third mode of limited transposition.

Indeed, this modality dominates the harmonic landscape, revealing C as a sort of pivot note in the transition, a common tone between mode 2.3 and mode 3.1. There is semblance of neither E nor B major here; Messiaen's modal language rules the *Transition*. The varied repeats of measure 24 in measures 25-26 intensify the climactic transition out of a dominant inflection and away from tonality, similar in effect to the brief chromatic transition in section **II**. In

measure 26, the obvious climax of the whole movement, a straight augmented triad underpins the melodic motion of the cello, played well above *ff*, complete with pounding accents in the piano. The chord is from mode 3.1, and the augmented triad comes to the fore rather than the half steps as in measures 24-25. Contrary to his tendency to avoid or conceal augmented triads when part of a whole tone scale, here Messiaen states one clearly and distinctly.[30] The *Transition's* contrast with the overarching dichotomy between diatonicism and octatonicism is aurally obvious, and Messiaen uses this augmented triad to great effect for his climax. His technique of juxtaposition is summarized in his conversation with Claude Samuel during their exchange concerning Messiaen's conception of colors in music:

> For me, certain sonorities are linked to certain complexes of colors, and I use them like colors, juxtaposing them and putting them in relief one against the other, as a painter enhances one color with its complement.[31]

Indeed, this point of greatest tension, highlighted by the hammering piano chords, serves to enhance the recapitulation in the next section by putting it into relief against the more highly chromatic mode of the *Transition*.

Section III – Measures 27-32

The recapitulation begins straight away at rehearsal D, the beginning of section **III**, with a *subito ppp* dynamic marking, starkly and severely underscoring the contrast with the *Transition*. Section **III** opens with the same minor third from measure 1, with the same rhythm, but it is transposed up a perfect fourth to E and C♯. This motion, over a second inversion E major

[30] Johnson, *Messiaen*, 16. In Messiaen's own words, "We shall carefully avoid making use of [the whole-tone scale], unless it is concealed in a superposition of modes which renders it unrecognizable." Messiaen, *Technique*, 59. As noted throughout this chapter, this movement's source was composed prior to his *Technique*, meaning Messiaen's attitude towards the whole-tone scale may not yet have been firmly ensconced in his compositional approach.
[31] Claude Samuel, *Music and Color*, trans. E Thomas Glasow (Portland, OR: Amadeus Press, 1994), 41.

triad in the bass, appears to steer the harmonic texture towards diatonicism, an analogous move to the repetition of exposition material in the tonic key in a classic sonata, confidently stripping away the modal, augmented triad from the listener's ears. But the unstable second-inversion E major harmony, the C♮ later in measure 27, and the truncated, slightly modified transposition of the initial motive ***x***, betrays this finality. Indeed, as the music moves through measure 28 and into 29, the original octatonic collection takes hold, with pitch classes D♮ and A♯ in the piano, and G♮ and F♮ in the cello line as the climactic C fades away. The A♯ and G major triads from section **Ia** return in measure 30, although in new inversions, reinforcing mode 2.2.

Coda – Measures 33-35

The coda underlines the prevalence of the octatonic collection, mode 2.2, by incorporating material from the first measure of the large *Transition* between sections **II** and **III** that began with an ascending statement of mode 2.3. While the ascending minor thirds are replicated in the cello, the piano instead descends along the octatonic scale, reversing the effect of the transition further by decreasing in dynamics to *ppp*. The piano now lands on an E major triad in root position, adding on its lowest E to the original spacing in measure 3. Messiaen finally gives the listener an E in the cello as the piano chord repeats in three groups of decreasing repetitions of sixteenth notes, fading to *pppp* with the direction of "*en se perdant*," roughly translated as "losing itself" or "dying away." Here the music seems to have arrived somewhere near the end of time, or at least near the end of a visit to eternity, with the decrescendo of the E major chord continuing on, ever quieter, fading into infinity. The tonal-modal tension disappears along with it. Whether one hears E major or mode 2.2 in the end, the listener realizes that it is the interaction between these harmonic realms that structured the movement and gave it meaning.

The final chord reduces out their differences, a sublime and comforting resolution in the face of ambiguity.

3. Conclusion

The lack of a singular harmonic language in *Louange* might strike some conservative or untrained listeners, as most of those at the premiere likely were, as unsettling. On the other hand, Griffiths notes that some of Messiaen's "stoutest adherents…have found [this movement] regrettable or else passed over [it] in silence," citing the vulgarity and sweetness of both this *Louange* and its partner movement, *Louange à l'Immortalité de Jésus*.[32] The implication here, obviously, is that these two slow movements lack the sophistication of the rest of the Quartet. Messiaen, however, refuted the charge of overt saccharinity, claiming "they are simply noble, bare, austere."[33]

Aesthetic arguments aside, I believe none of these viewpoints do the movement justice. By investigating the harmonic evolution of *Louange à l'Éternité de Jésus* instead of considering the sectionalized melody as Messiaen does in his *Technique*, I have shown Messiaen's nuanced elaboration of a tonal-modal binary.[34] Indeed, as the preceding analysis demonstrates, Messiaen's development of harmonic space structures the movement, giving it coherence and movement while keeping E as a basic tonal center through changes of modality. The movement compares favorably to a traditional sonata-allegro form, following a familiar organic construction: two main thematic areas and harmonic spaces are introduced in an expository

[32] Griffiths, *Music of Time*, 101.
[33] Ibid., 102.
[34] In both of these sentences, I challenge Messiaen's own views. As he himself claims in the preface to *Technique*, "It is always dangerous to speak of oneself," and later on, that the *Technique* is "not a treatise on composition."(Messiaen, *Technique*, 7). Both of these prompt Griffiths to write: "Nor is there any need to give any great authority even to an author's preface. Messiaen the annotator is not Messiaen the composer, and there may be respects in which the comments misrepresent the music as much as, perhaps, the music misrepresents the vision." Griffiths, *Music of Time,* 105.

period; a development section elaborates, contorts, and transposes both the melodic materials and the harmonic foundations of the exposition, leading to a climactic swell in a mode derived from the initial two harmonic contexts; a recapitulation brings the music back to the original modal-tonal interaction. Though the conflict remains unresolved, the end of the coda results in a feeling of finality and closure while paradoxically leaving a sense of something beyond the end of the movement.[35]

The teleological, temporal interpretation of the form and the view of an atemporal eternity beyond the piece appear together in the coda. Griffiths writes of these two separate temporal perceptions in the larger scheme of the *Quatuor*:

> Once one knows how the work is going to end in fact, the cello movement comes to seem like a finale, with all the rest taking place after the work is over. Alternatively, the potential remains for more movements and more finales, since the work has demonstrated that an apparent conclusion need not in fact be the end. This is just one of the larger ways in which the *Quatuor* is an image of the end of time, the end of any logic to temporal succession.[36]

Diane Luchese has tracked the theme of eternity through the slow movements of Messiaen's works in her dissertation, engaging with the music itself. She also notices this dual nature of eternity in his music more generally. "These compositions manifest a paradox," she explains. "The music gives an impression of changelessness while also allowing the listener to experience

[35] Messiaen explains that "all free instrumental forms are derived more or less from the four movements of the sonata. The sonata-allegro synthesizes that whole sonata." Messiaen, *Technique*, 40. He then goes on to explain a few forms based loosely on the sonata-allegro, each of which retains the development, the most important part for Messiaen. Based on this, Johnson postulates that Messiaen "is thinking of the sonata sectionally rather than organically, and, as a result, the forms which he derives from it have very little to do with its real spirit. The nature of the sonata is such that one could not detach parts of it in the way he does and still remain the essential element of organic growth and development." (Johnson, *Messiaen,* 22-23.) In support of my own understanding of organicism in this movement, I provide two brief arguments against a sectionalized reading here: first, this movement was adapted from an older piece, as mentioned earlier, so it is possible Messiaen's sectionalized understanding of sonata composition may not have yet fully developed; second, Messiaen also claims that the recapitulation of the form has become obsolete by the time he wrote the *Technique*. Messiaen, *Technique*, 40. Recapitulations find their way into his song-sentence and ternary sentence structures, and an analysis that misses a recapitulation in the movement in question would certainly raise some eyebrows.

[36] Griffiths, 101.

directed motion."[37] The slowness of the *Louange* and the pulsing piano give the music a static, almost atemporal quality while the harmonic progression offers perceptibly organic growth and development.

Benedict Taylor finds a similar binary in Messiaen's stated and written views on time, their relationship to his music, and to other, later interpretations of his music.[38] He also distinguishes between two general definitions of eternity, which are relevant to mention here:

> First, eternity may imply infinity of time, everlasting duration, something without beginning or end. This may be contrasted with timeless, unchanging extra-temporal being, something outside and not measurable by time. Despite the etymological root of the term eternity implying the first concept (*aevum*, time or age), the term "sempiternity" is often used to distinguish the former notion of infinite duration from the second one of timeless eternity. This second definition of eternity is characteristic especially of religious and mystical thought, and is that with which Messiaen concerns himself.[39]

Taylor goes on to conclude that Messiaen's two separate conceptions of temporality are accurately explained as Time, which has a beginning and an end, and God, something outside of time, something separate. This movement and its structure represent this binary of Messiaen's concept of time rather well, progressing through time while revealing something beyond it.

Johnson's assessment of Messiaen's harmonic language, with tonality absorbed into a broader conception of modality, advances a relationship between eternity and harmony. The idea of ambiguous overall harmonic tendencies with distinct sections of different modalities, he says,

> …lends (Messiaen's) music a static rather than a dynamic quality, his harmony existing in a state which is neither tension nor relaxation – the mood of the moment is captured and transfixed in a timelessness which is implied by the structure of the music itself…The suspension of psychological time in his music is particularly apt for the works which involve religious symbolism.[40]

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[37] Luchese, "Olivier Messiaen's Slow Music," 181.
[38] Benedict Taylor, "On Time and Eternity in Messiaen," in *Olivier Messiaen: The Centenary Papers,* ed. Judith Crispin (Cambridge: Cambridge Scholars Publishing, 2010), 256.
[39] Taylor, "On Time," 257-258.
[40] Johnson, *Messiaen*, 13.

While I hope to have exposed some dynamic quality in the harmonies in this piece with the juxtaposition and interaction of pitch-class collections, the "timelessness … implied by the structure" gives an impression of changelessness amidst the continual change, however slow. Surely this glimpse of eternity and divine beauty would have been an unforgettable experience for those at the premiere, imprisoned yet surrounded by immediate and radical change, with no idea of what might happen to them, or when.

CHAPTER 3:

Meaning and Structure in Mashups

Borrowing and quotation are longstanding traditions in Western music history. *Quodlibets* of the Renaissance and Baroque; various settings of chant or hymn melodies; Berlioz's *Dies Irae;* Berg's use of Bach in his *Violin Concerto*; Ives's juxtaposition of American and Continental sources; Berio's *Sinfonia*; Stockhausen's *Hymnen*: these well-known examples of literal borrowing, distinct from general notions of imitation or emulation, from the historical gamut of classical art music hint at the prevalence of truly recycled material in the Western canon.[1] And although terms like authenticity and originality are frustratingly difficult to wield or define, critics would be hard-pressed to proclaim definitively that any of the aforementioned examples lack either. But in popular music, from Tin Pan Alley adaptations of Stephen Foster songs to the overwhelming abundance of sampling in hip-hop, musical borrowing foregrounds issues of newness.

Nowhere is this more prevalent than in today's genre of the mashup. Totally composed of existing musical samples, mashups blur the already hazy boundaries of an original/copy binary. The mashup, a love child of pop music and recording technology, supports Michael Serazio's claim that "hybridization, recycling, and irony" constitute the "holy trinity of pop culture today."[2] In recent documentaries like "Everything is a Remix"[3]and investigative books like "Retromania,"[4] current Western popular culture's infatuation with and appropriation of the past comes under close scrutiny. Aram Sinnreich approaches the issue of our newly

[1] For a brief overview of borrowing in the Western music canon, see J. Peter Burkholder, "The Uses of Existing Music: Musical Borrowing as a Field," *Notes*, second series, vol. 50, no. 3 (1994): 851-870.
[2] Michael Serazio, "The Apolitical Irony of Generation Mashup: A Cultural Case Study in Popular Music," *Popular Music and Society* Vol. 31, No. 1 (2008): 79.
[3] Kirby Ferguson, *Everything is a Remix*, 2011.<http://www.everythingisaremix.info/watch-the-series/.>
[4] Simon Reynolds, *Retromania: Pop Culture's Addiction to Its Own Past* (NY: Faber and Faber, Inc., 2011).

"configurable culture" from the interdisciplinary viewpoint of "critical information studies," and he suggests that pervasive remixing is the result of "a reciprocal interdependence between communication technology and culture" that has reached a "point of symbiosis."[5] While his methodology is obviously non-musical, it highlights the connection between our increasingly digitized art and our increasingly chaotic world. Indeed, when pop music is considered in tandem with modern technology (with every site and screen personalizable and marketable to an unprecedented degree), definitions of authenticity and newness have important aesthetic, ontological, and, more practically, very real legal ramifications.

With these issues in mind, I will first provide an overview of the mashup's academic terrain. Next, I will incorporate an approach based on semiotics to focus more specifically on referentiality in mashups. Lastly, I will provide a few analytical case studies to show how borrowing affects form and structure in mashup, and also to show how creative and artistic this unique musical outlet can be. In doing so, I hope to lay a foundation for future study of mashups' role in Western popular culture.

1. Background

The mashup comes in a variety of guises that coalesce around one common characteristic. Mashups are entirely composed of existing recorded material, typically commercial pop tracks. Artists in the genre mix two or more songs together in a more complete fashion than is done in basic sampling. Sampling adds in a single, specific component of a song, such as a bass line, drum beat, or brief vocalization, to an otherwise original work. While some pieces rely heavily on samples for structure, mood, or effect, mashups take this notion of dependence to an extreme.

[5] Aram Sinnreich, *Mashed Up: Music, Technology, and the Rise of Configurable Culture* (Amherst and Boston: University of Massachusetts Press, 2010), 70.

They are entirely reliant on the sources from which they pull musical material. As noted by David Gunkel, "there is, strictly speaking, nothing original or authentic in the material of a mashup. Everything…is derived and taken from another source."[6] The legal ramifications and ontological legitimacy of mashups are already brought into question just by their very nature.

Up until very recently, mashups have been analyzed in terms of intellectual property and copyright concerns, while the actual musical material has avoided inspection. A more comprehensive literature review can be found in Liam McGranahan's 2010 ethnographic study of mashups[7] and in Anthony Cushing's 2013 dissertation,[8] but I will provide a brief overview. As noted by Cushing, two distinct camps have emerged in the academic literature:[9] one opposes the illegal and derivative mashup on grounds of illegitimacy or mere pastiche; the other champions the genre as a subversive political statement that challenges the hegemony of the music industry (and in turn that of any other cultural authority.)

The first camp's stance is summarized by the works of Michael Serazio and David Gunkel, who both question the authenticity of a genre composed of reused materials. In two articles concerning the metaphysics of sound recording and the status of authorship respectively, Gunkel takes an approach to mashup's legitimacy based on a teleological understanding of the metaphysics of recordings in general; the result is not good for mashup creators. Due to their "derivative, illegitimate, and monstrous nature," Gunkel claims, "mashups cannot be said to innovate anything. Instead, they only plunder, reuse and remix" innovations already present.[10]

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[6] David Gunkel, "What does it Matter Who is Speaking? Authorship, Authority, and the Mashup," *Popular Music and Society*, vol. 35, no. 1 (2012): 81.
[7] Liam McGranahan, "Mashnography: Creativity, Consumption, and Copyright in the Mashup Community," (PhD diss., Brown University, 2010).
[8] Anthony Cushing, "Three Solitudes and a DJ: A Mashed-up Study of Counterpoint in a Digital Realm," (PhD diss., University of Western Ontario, 2013).
[9] Ibid., 16-20.
[10] Gunkel, "Rethinking Digital Remix: Mashups and the Metaphysics of Sound Recording," *Popular Music and Society*, vol. 31, no. 4 (2008), 503.

Gunkel further states that the subversive and antiauthoritarian potential of mashups is undermined by their exceeding and unapologetic redundancy; in attempting to challenge the music industry's sterility, the mashups have become sterile and unoriginal themselves.[11] For Gunkel, the illegality of mashups' musical borrowing only lowers their status as art and as ontologically unique entities.

Serazio offers less condemnatory language, but his viewpoint is still one of mockery and derision.

> The question remains, however: To what end is such culture jamming useful, other than its own self-indulgent referentiality? In this "ultimate expression of remix culture," this "highest form of recontextualization," does the mashup aesthetic and movement amount to anything more than "in-jokes for music geeks?" Is there a real cause here, beyond irony—a genuine call to arms toward something rather than a simple winkwink, tongue-in-cheek prank about nothing? I would argue that the mashup is *bricolage* for its own sake; as a definitive generational statement, it hesitates to [offer] anything more than detached, wry commentary, which actually may be apropos.[12]

Though mashup artists might aim for innovation or derision, their resulting music remains bland and overly conceived in irony or subversion to Serazio, offering nothing of merit besides a bit of shrewd mockery.

The second camp takes a much friendlier view, occasionally approaching a utopian vision for mashups and their pillaging nature. Aram Sinnreich lays out a set of binaries that define, in his words, "the modern discursive framework…an elaborate and robust system of thought, which has remained dominant during the last two centuries."[13] These binaries are challenged and redefined,[14] by way of outlets such as mashups, in our postmodern society in "a continuing effort to craft aesthetic and ethical codes that simultaneously encompass *both* evaluative criteria *and*

[11] Gunkel, "Rethinking," 499.
[12] Serazio, "Apolitical Irony," 87.
[13] Sinnreich, *Configurable Culture,* 43.
[14] The six binaries are art/craft, artist/audience, original/copy, performance/composition, figure/ground, and materials/tools.

social inclusion, *both* individual accomplishment *and* collective endeavor."[15] Radical and rapid technological innovations "threaten to undermine the very foundations of the modern framework…despite two hundred years of institutional entrenchment and cultural inertia."[16] The mashup serves perhaps not as a call-to-arms, but as a general sign of the times, more than mere *bricolage* for its own sake.

William Levay's ideas comport well with Sinnreich's notion.[17] He legitimizes mashup as art by comparing it to earlier sculpture and visual arts, especially Marcel Duchamp's *Bicycle Wheel* (1913). "Just as early-twentieth-century visual art critics were forced to amend their aesthetic paradigm to accommodate the appeal of Marcel Duchamp's *Bicycle Wheel*, so should music critics recognize the mashup as a viable twenty-first-century popular music form."[18] The problem, though, lies in the music industry's control over the commodification of popular music. Indeed, major record labels began releasing commercially licensed mashups in the mid-2000s, giving credence to Levay's pessimistically Adornian view of art in capitalistic societies. At the end of his article, Levay casts an ominous light on mashup as a "viable" popular music form:

> Any form that is poised to undermine the culture industry's hegemony, especially if it's potentially marketable pop music, will be sanitized and brought into the fold. Pop music consumers in the cut 'n' mix school will surely continue to remix and mash up old songs to create genre-bending new ones. But the industry's appropriation of the mashup means listeners won't hear it as the sound of dissatisfied consumers from the no-longer-mute periphery. Marketed to an audience exponentially greater than what the underground remixer could have hoped to reach, the potentially subversive art is reproduced and bar-coded, turned into a harmless fad or a profitable industry formula, and we all pay for it.[19]

[15] Sinnreich, *Configurable Culture,* 208.
[16] Ibid., 69.
[17] William J. Levay. "The Art of Making Music in the Age of Mechanical Reproduction: The Culture Industry Remixed." *Anemesa* (2005): 22.
[18] Ibid.
[19] Ibid., 36.

Three more recent studies have provided novel approaches to mashups. Since I will engage with each in the ensuing pages, I provide a short summary here. Liam McGranahan's 2010 dissertation engages in an in-depth ethnographic study of the mashup community, which is centered around online message boards, blogs, and forums. Ragnhild Brøvig-Hanssen and Paul Harkins treat the humorous aspects of mashups in their 2012 article.[20] Finally, Anthony Cushing's 2013 dissertation is the first to investigate the actual musical aspects of mashups as they relate to a general notion of digital contrapuntal space.

Two main issues arise in these studies. First, as mentioned earlier, the actual music often remains untouched, mainly because many previous mashup scholars have training in fields such as communication or information studies, philosophy, journalism, and ethnography. As a result, these summaries of mashups' merits simply evaluate two basic types of mashup: the direct, unadulterated layering of parts from two songs on top of each other, commonly juxtaposing the vocal content from one track with the instrumentals of another; and jam-packed dance albums like those of Girl Talk, whose legitimacy as a mashup artist is questioned within the mashup community.[21] His music relates more to turntablism, the live mixing of numerous samples in a short period of time, with many abrupt jumps to new material to create a sectionalized work, than to the song-oriented mashups. By ignoring other types of mashups, these authors limit their effectiveness in describing the genre as a whole and indeed neglect most of the genre's artistic capacity.

Second, the studies reveal a lack of awareness of prior work done on musical borrowing and quotation in Western music. One finds passing mentions of Peter Burkholder's seminal work

[20] Ragnhild Brøvig-Hanssen and Paul Harkins, "Contextual Incongruity and Musical Congruity: The Aesthetics and Humour of Mashups," *Popular Music*, vol. 31, no. 01 (2012): 87-104.
[21] McGranahan, "Mashnography," 14.

on Ives and casual nods to semiotic theories and postmodern collage, but little else.[22] To understand even these basic forms of mashups better, I first provide a semiotic interpretation below, based mainly on Robert Hatten's work on meaning and borrowing in music.[23] By drawing on work on borrowing by Burkholder and by authors interested in post-war collage, I hope to provide a more comprehensive understanding of mashups as distinct from other Western traditions of quotation.

2. Semiotic approach to referentiality in mashups

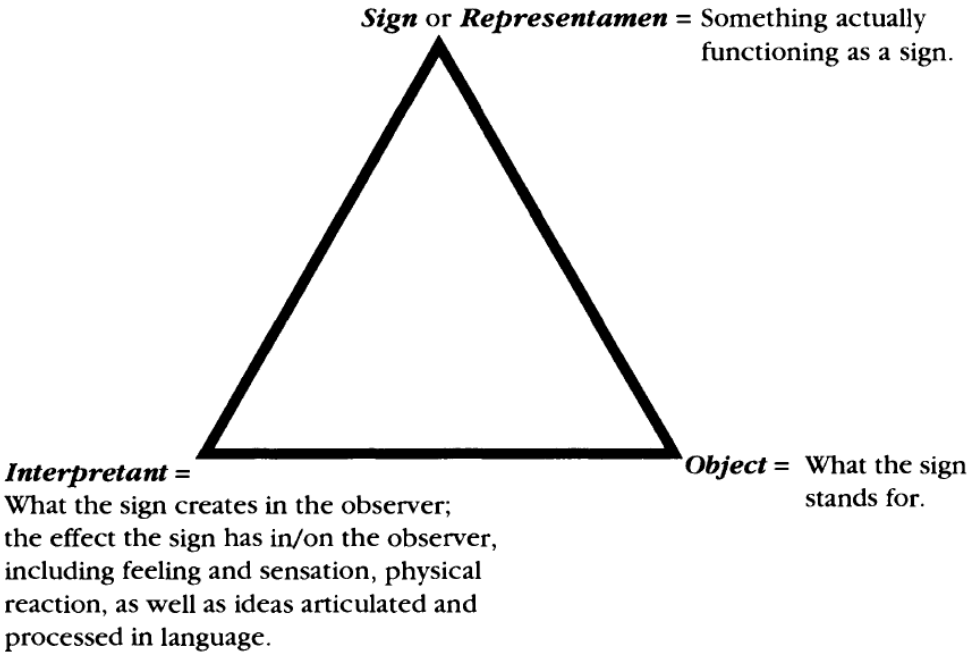
Semiotic studies of Western music have typically focused on classic art music, specifically that of the 18th and 19th centuries.[24] Authors from Ratner to Rumph and Allanbrook to Agawu have appropriated linguistic theory in unique ways and have applied them to Classic and Romantic music with varying success.[25] Seeking a historically informed understanding of the music, each author incorporates musical signs and their signified objects into analyses of various works. Semiotics and topic theory offer an interpretation of how Mozart, Beethoven, and Brahms tinkered and played with the sonic sources and the musical genres at their disposal. The mashup provides an obvious, contemporary analogue. I have chosen to incorporate a semiotic

[22] See note 1 of this chapter.
[23] At least one other author interested in quotation makes use of Hatten's work, comparing his approach with Berio's own thoughts on quotation and meaning and also comparing it to works by more technically oriented theorists, such as Losada (2004) and David Osmond Smith (1981): John Flinn, "Reconstructive Postmodernism, Quotation, and Musical Analysis: A Methodology with Reference to the Third Movement of Luciano Berio's *Sinfonia*," (PhD diss., University of Cincinnati, 2011): 32-35.
[24] A notable exception is Horace Maxile's investigation of topics in African American music: "Signs, Symphonies, Signifyin(G): African-American Cultural Topics as Analytical Approach to the Music of Black Composers," *Black Music Research Journal*, vol. 28, no. 1 (2008): 123-138. Articles like Louise Meintjes's impressive investigation of indexical meaning in *Graceland* rely on semiotics to understand peoples' relationships with music, but do little to explore the music itself. "Paul Simon's Graceland, South Africa, and the Mediation of Musical Meaning," *Ethnomusicology*, vol. 34, no. 1 (1990): 37-73.
[25] Both Ratner (1980) and Rumph (2011) will be discussed later in this chapter. For pioneering semiotic analyses of 17th and 18th centuries, see: Wye Jamison Allanbrook, *Rhythmic Gesture in Mozart: "Le nozze di Figaro" and "Don Giovanni"* (Chicago: University of Chicago Press, 1983); and Kofi Agawu, *Playing with Signs: A Semiotic Interpretation of Classic Music* (Princeton: Princeton University Press, 1991.)

interpretation because of the general rigor and success of the field in engaging with musical meaning in other genres. I feel that the mashup literature could use an injection of formal language when discussing meaning, and semiotics have a proven track record of doing just that.

2.1 Background and Definitions

Peirce's semiotic theory provides an appropriate tool for the investigation of meaning in popular music. As explained by Turino, Peirce's tripartite understanding of semiotics consists of three nodes of a triangle that represent the sign, the object, and the interpretant, respectively (EXAMPLE 3.1). The sign is the thing that is present, the object is what the sign points to, and the interpretant is the mediator that allows one to understand the relationship. When one encounters a sign, s/he relies on an interpretant, based on prior experience, acculturation, or associations, in



EXAMPLE 3.1. Peirce's semiotic triangle, as given by Turino.[26]

[26] Thomas Turino, "Signs of Imagination, Identity, and Experience: A Peircian Semiotic Theory for Music," *Ethnomusicology*, vol. 43, no. 2 (1999): 223. This is opposed to a Sausserian binary understanding of semiotics, in which each sign is either married to a specific object or is completely unmoored in a Platonist fashion.

order to understand the sign's relationship to an object. The interpretant is a way to facilitate the perception of the original sign. A sign can relate to its object in three ways: as an icon, an index, or a symbol.[27] These basically increase in order of abstraction: an icon represents its object rather literally (eg. the banging of a bass drum to represent thunder or the literal [or even vague] quotation of "Taps" in a piece); an index relies on the co-occurrence of sign and object in actual experience (Turino's examples include a V^7- I cadence as an index of musical closure in European societies and a TV show's theme song as an index of that program); and symbols are "related to [their objects] through the use of language rather than being fully dependent on iconicity or indexicality…the meanings of symbols are relatively fixed through social agreement."[28] Symbolic meaning is mediated by language and is understood intellectually. The affective power of music creates its meaning for Turino; for this reason, he believes that "musical sounds that function as signs operate at the iconic and indexical levels," rather than as symbols.[29]

In this understanding of musical semiotics, any musical parameter—pitch, scale type, timbre, rhythmic motion, tempo, melodic shape, meter, dynamics, harmony (where applicable), specific melodies, quotes, genres—any of these "can and often do function as discrete…signs which may be meaningfully combined to produce a *macrolevel sign*."[30] For a pop song, the sign (the song itself or any of its constituent parts) can indexically signify different objects to different listeners, depending on their interpretants.[31] While Turino's summary emphasizes the individual's interpretant, I will focus on shared, relatively common objects of pop songs. Genre

[27] I have simplified these ideas considerably. For a fuller explanation, see especially Turino, "Signs," 226.
[28] Turino, "Signs," 227-228.
[29] Ibid., 228.
[30] Ibid., 236-7, italics added.
[31] Though the spectrum of interpretants can range outside of any indexical understanding of the object (if one is completely unfamiliar with Western music), I will assume the reader of this paper is at least somewhat comfortable and familiar with the basics of the Western pop "canon."

conveniently provides just such an organizing object for this paper's purposes, and it contributes much to an understanding of mashups.

Genre is an inherently difficult subject to investigate, but I will take a basic definition for reasons that will become obvious. Like Brad Osborn, I believe "that there is…much to be gained from analyzing the relationship between purely musical elements and the genres those elements signify."[32] Fabian Holt, in his book *Genre in Popular Music*, describes this basic idea:

> Structuralist and semiotic approaches can be useful in exploring conventions on the level of discrete musical elements. For instance, certain twelve-bar chord schemes are strongly identified with the blues, certain vocal techniques with soul, certain distorted guitar sounds with rock, and steel guitars with country. Some of these elements appear in many genres and are regular fixtures in only some of the music of the genre with which they are associated but have nonetheless assumed the status of genre signifiers. Such conventions are often the first we register when we try to locate music generically.[33]

Note how well this comports with Turino's notions of a macrolevel sign above: various discrete musical elements contributing to form a single sign. Although taxonomically defining pop genres in terms of their characteristic elements lies outside the purview of this paper, it is worth exploring a couple of examples to illustrate the point. A rhythmic, rhyming, spoken-word melody over a repetitive instrumental backing including drums is identified with rap or hip-hop. The instrumentals or the vocals could act as the "ground," that musical element which could easily lead the listener to a host of other interpretations and connections, following Peirce's chain of interpretants.[34] Depending on the vocal rhythm or timbre, the lyric content, or the instruments used for the beat (all possible signs), the song (the token), subsumed in the rap genre (the type), could signify urban African-American life, a political statement, a boastful, bragging machismo, misogyny, a contemplative artistic commentary, a comedic satire, or a host of other objects. Late

[32] Brad Osborn, "Beyond Verse and Chorus: Experimental Formal Structure in Post-Millenial Rock Music," (PhD diss., University of Washington, 2010): 43.
[33] Fabian Holt, *Genre in Popular Music*, (Chicago: University of Chicago Press, 2007), 22-23.
[34] Turino, "Signs," 223.

70s punk rock, defined by driving, straightforward guitar riffs, simple harmonies and a lo-fi, do-it-yourself aesthetic, could in turn set off a chain of interpretants pointing to rebellion or youth, leather jackets or the U.K.

I argue here for a definition of mashup topics that essentially agrees with this basic notion of genre in popular music.[35] Topics are musical signs that represent musical objects. As explained by Stephen Rumph, "we hear an operatic theme as a bourrée or gavotte in accordance with the metaphor/interpretant of music as cultural index. [These topics] are objects, yet their distinctive rhythmic features are present within the musical sign."[36] (Topics in eighteenth-century music divide into two main categories: types and styles.[37] The types included various dances or the march, while styles included more general terms, like hunt music, the singing style, or the learned style. Popular genres float somewhere between these two, but would have to fall more into the style category.) Pop topics used in mashups are represented by those distinctive features that compose a genre, those units or characteristics that are typical in a music and that are present in the mashup.

A folk topic, for instance, could be represented by a single acoustic guitar playing relatively simple harmonies or an untrained singing voice. A blues topic could be represented similarly, but might be distinguished by signifying features such as the 12-bar blues form, lyric content, vocal timbre, blue notes, or melismatic vocal improvisations.[38] Extramusical considerations, like the race or gender of the performer or the performance space, could also

[35] I also choose to use "topic" as opposed to "genre" to label and describe different types of popular music so as not to confuse "genre" in a classical music sense, which often refers to types such as string quartet, symphony, sonata, etc.
[36] Stephen Rumph, *Mozart and Enlightenment Semiotics* (Berkeley: University of California Press, 2011), 94.
[37] Following Leonard Ratner, *Classic Music: Expression, Form, and Style* (New York: Schirmer Books, 1980), 9.
[38] If these signifying features are shared between signs and used to combine them in a work, they could be described by the term *Figura,* borrowed from Rumph, who borrowed it from Hjelmslev. (See Rumph, *Enlightenment Semiotics*, 95-96.) A figura is, essentially, a topical phoneme, a musical element or feature that constitutes part of a topic, an abstract structural feature that articulates multiple topical signs.

contribute to one's understanding of a topic.[39] This kind of classifying or sorting is similar to Ratner's and Allanbrook's drawing of distinctions between different triple-meter dance types, for instance. Although they all share a common feature (triple meter), they are easily distinguished by other musical features (usually rhythmic profile or accent) and point to different social classes.[40]

Pop topics could also be read like Raymond Monelle's military topic. This topic is signified by a host of different elements: tempo, brass fanfares, dotted rhythms in duple meter, etc.[41] A classic rock topic could by evoked by many different elements, including blues-influenced guitar solos (like those of Eric Clapton, Jimi Hendrix, Jimmy Page), vocal harmonies (à la The Eagles, The Beatles, The Beach Boys), distinctive vocal timbres (Mick Jagger, Robert Plant, Jim Morrison), or any number of other musical traits.[42] Although these elements are incorporated into a mashup as extracted iconic, topical relationships, their topics index larger objects.

Borrowing Robert Hatten's idea of markedness, one could understand a pop topic as made up of characteristic features that are unmarked within that topic.[43] In punk music, a smooth synth line would constitute a marked component, contrasting sharply with the normative (and

[39] For the purposes of this paper, I will focus on the musical aspects of the signs to define topics, while the extramusical characteristics of a genre will be left to the indexical or symbolic level.
[40] As summarized in Ratner, *Classic Music*, 9-13.
[41] Raymond Monelle, *The Musical Topic: Hunt, Military, and Pastoral* (Bloomington: Indiana University Press, 2006), 113-181 especially.
[42] The classic rock topic, like all the topics I discuss, could be further subdivided quite readily. Progressive ("prog") rock, psychedelic rock, jam band, hard rock, heavy metal, Southern rock, and folk rock could all easily be differentiated and defined by a more detailed perception of the musical elements in the classic rock topic. I restrict myself to the basic, overarching topic for simplicity's sake. This will inevitably lead to generalizations and essentializations.
[43] Robert Hatten, *Musical Meaning in Beethoven. Markedness, Correlation, and Interpretation* (Bloomington: Indiana University Press, 1994), 36-38.

thus unmarked) gritty, lo-fi aesthetic;[44] a wailing distorted guitar solo would be marked in a disco dance setting. The insertion of either of these marked features influences the listener's understanding of each topic.

Pop topics provide the basic material for the mashup; the samples act as icons that also carry indexical meaning. As in Turino's example of Hendrix's rendition of "The Star Spangled Banner," the meanings of the sampled quotations in mashups are questioned, shifted, or possibly reinforced by *creative indexing*.[45] "Creative indexing," explains Turino, "involves the juxtaposition of two or more indices in novel ways that play off of the original meanings of the signs."[46] This is how a mashup creates new meaning, how it can be original despite a lack of original sonic elements. The mashup introduces a new viewpoint, forcing the listener to treat the topics in relation to each other, treating each as a new interpretant of the other.

2.2 Some Simple Examples

The simple layering of one song's vocals and another's instrumentals with little manipulation outside of tempo and pitch is the most common form of mashup, which clearly emphasizes the juxtaposition of the original sources. Take, for example, the facilely titled "Party and Bullshit in the USA" by Red Flag Productions[47] in which Notorious B.I.G.'s rap from his "Party and Bullshit" is placed on top of the instrumentals from Miley Cyrus's "Party in the U.S.A." The beat from Biggie's original has a somewhat dark, muddled aesthetic, with a high swirling synth line over minor mode background of organ and bass. These elements help define a

[44] "Lo-fi" refers to a relatively low quality of recording, often attained either through using older equipment or through a degradation of recorded materials. The techniques reinforce an authentic "garage band" aesthetic, with lots of distortion, buzzes, and other elements heard as "raw."
[45] Turino, "Signs," 242.
[46] Ibid.
[47] Due to mashups' inherent illegality, their authorship can be difficult to track down and define definitively. I provide hyperlinks to all mashups mentioned in this paper in APPENDIX 1.

mid-1990s gangsta rap genre, with clear roots in the multi-layered sampling of groups like Public Enemy. Biggie's lyrics in the original track revolve around a party atmosphere, but it is not necessarily a pleasant scene. Between romantic pursuits, fights break out. Biggie fears being shot. The sinister instrumental foundation helps reinforce not only this attitude, but also contributes to the slightly aggressive nature of his flow which is often slightly ahead of the beat and has a forceful tone.[48]

However, in "Party and Bullshit in the USA," the excessively chipper pop sensibilities of Cyrus's hit song completely alter the mood of Biggie's lyrics; he seems to be either oblivious to or in denial of his harsh surroundings. The verses of the mashup layer his rhymes over Cyrus's instrumental backing; but in the choruses, Cyrus's song reigns, carefree. Biggie's post-fight plea, "Can't we all just get along?" loses its power and conviction, instead expressing the naivety of a coddled teeny-bopper. Indeed, Cyrus's song bespeaks her privileged background; arriving in L.A. off of a plane, this daughter-of-a-famous-musician expresses anxiety about her new, glitzy environment. Instead of being forced to confront her uncomfortable party atmosphere head on, like Biggie had to do in his aggressive environment of fights and guns, Cyrus is able to escape by dancing, shutting out her surroundings.

In Peircian terms, both samples (the Biggie and the Cyrus) are actual quotations of the objects (the original songs) themselves, icons of the most literal sort. But the relationship between the two is understood more deeply at an indexical or symbolic level even without recognition of the parent samples; even the listener who is unaware of Cyrus's song will likely recognize the sugary pop topic, while Biggie's lyrics and flow would conjure up an African-

[48] One is reminded of Hatten's *markedness assimilation* here, with multiple salient signs with their associated signals acting together. Hatten, *Beethoven*, 38. Compare, for instance, the relaxed flow in "Big Poppa," in which Biggie is only focused on courting women, unconcerned about the possibility of fights breaking out.

American rap topic.[49] The interaction between the two can be mediated and understood by way of a new interpretant, forced upon them both by the mashup artist via creative indexing.

Ragnhild Brøvig-Hanssen and Paul Harkins suggest two main qualities constitute all mashups' merit: contextual incongruity and musical congruity. They argue that "the art of mashups…is to juxtapose recognizable samples which result in a coherent piece of music and at the same time generate a feeling of incongruity…[and] it is the combination of contextual incongruity and musical congruity that produces the richness in meaning and the paradoxical effects that we find in successful mashups."[50] The entire point, for Brøvig-Hanssen and Harkins, is a genre mix that can be used to mock, shock, or surprise while preserving some sort of musical coherence. They assert that textual incongruity creates a humorous aesthetic, which, on the surface, may be readily apparent. It is very easy to ignore the indexical or symbolic meanings and just focus on the superficial layering in this combination. Additionally, their viewpoint ignores the possibility of contextual congruity in a mashup. What if the new song combines similar topics?

What exactly is the contextual incongruity of the two aforementioned examples? The Biggie rap topic may come from a genre and era different from those of Miley's pop topic, but the thousands of comments extolling Red Flag Productions for finding the perfect beat for his lyrics reflects the eclecticism of the modern popular music enthusiast. The combination of the topics obviously works together well for millions of consumers. In what could be called a

[49] The listener's ability to understand quotations semantically whether or not aware of the source is commented upon by James Mackenzie in his dissertation on Berio's *Sinfonia.* "Music's semantic instability combined with quotation's act of direct reference creates a listening situation that is at once bounded and open, where listeners have access to much interpretive freedom within limits implied by the music. Music quotation relies upon knowledge of music history for its significance to the listener, but does not demand precise identification of individual quotes." From Mackenzie, "The Text of Time: Musical Quotation and Historicism in Berio's *Sinfonia*," (PhD diss., University of Western Ontario, 1995): iii.

[50] Ragnhild Brøvig-Hanssen and Paul Harkins, "Contextual Incongruity and Musical Congruity: The Aesthetics and Humour of Mashups," *Popular Music*, vol. 31, no. 1 (2012): 99-100.

"shuffle" aesthetic, the average listener is accustomed to hearing a random sampling of artists at his or her own leisure. Indeed, within popular music itself, crossover and genre-bending has proved to be a lucrative and popular strategy. Shania Twain's "crossover country"[51] or the 90s "rap rock," prototyped by Run DMC and Aerosmith and appropriated by later groups such as the Beastie Boys, Limp Bizkit, Insane Clown Posse, and many others, both speak volumes to the casual pop listener's variegated tastes. In light of this, I believe that Brøvig-Hanssen and Harkin's simplistic view of mashups as mere humorous incongruity makes an unnecessary generalization, one that denies the artistic possibilities of the mashup and unduly ignores possible very serious repercussions of such a mixture, legal and otherwise. As a drive-by observation, notice how Red Flag Productions highlights issues of race, gender, and sexuality in pop culture, consciously or not, by combining the rap and pop topics, by placing Biggie on top of Miley.

"Smells Like Teen Booty," a mashup by the producer-brother pair 2 Many DJs, provides a clear example of some possible repercussions of contextual incongruity. In this song, the vocal track from Destiny's Child's "Bootylicious" is placed on top of the instrumental backing from Nirvana's "Smells Like Teen Spirit." The original genres of these two original songs are ostensibly different: Destiny's Child's early 2000s party pop with syncopated vocals, a repetitive dance groove, and relatively simple texture emphasizing percussion and bass; and Nirvana's early 90s grunge rock with distorted, slow guitar riffs, rough male vocals, drums laden with cymbals. The lyrical content also reinforces this reading. As Brøvig-Hanssen and Harkin describe: "On 'Bootylicious' the female trio of Beyoncé, Kelly and Michelle celebrate the voluptuous nature of particular [body] parts and playfully question the ability of potential partners to cope with their corporeal powers on the dance floor or in the bedroom. In contrast to

[51] As noted in Osborn, "Beyond Verse and Chorus," 48.

this light-hearted lyrical flirtation and musical fun, 'Smells Like Teen Spirit' is synonymous with the grunge movement and sounds like an angst-ridden anthem of doomed youth."[52]

But in the mashed up version, the two signs, the vocals and the instrumental backing, must now be interpreted in relation to each other. Most scholars have placed the emphasis on one particular reading of this mashup, summarized well by Michael Serazio: "'Teen Spirit' has been stripped of its suicidal self-seriousness and Nirvana's sound is now enmeshed with precisely the sort of glossy pop that the band so despised."[53] The angst-ridden, self-serious grunge-rock now sets the stage for Beyoncé and company's party lyrics. The subversion of mainstream popular music that Nirvana wished to champion is eradicated with blatant irreverence. 2 Many DJs sacrilegiously undermines an attempt at rebellion by adding mainstream pop.

From another viewpoint, the male-dominated, grunge rock setting could be seen to negate the feminine empowerment message that Destiny's Child advocates. The original "Bootylicious" includes an obvious sample of Stevie Nicks's guitar from "Edge of Seventeen." The riff indexes a certain construction of powerful femininity, a message that Beyoncé has continued to champion in her later, solo works. Although originally heard in a playful dance setting, Beyoncé, Kelly, and Michelle are stripped of their message when set in contrast with Nirvana.

How is this all effected in semiotic terms? I would argue that 2 Many DJs forces a new interpretant onto the listener, forcing him or her to understand the two icons in a new indexical or even symbolic relation to each other. The removal of Stevie Nicks as interpretant of the original "Bootylicious" enforces a view Destiny's Child as pop fluff, which in turn acts as a new interpretant for Nirvana's self-seriousness, now stripped bare in light of the new pop context, revealing itself as popular music after all. The obvious clash of topics creates a new subversive

[52] Brøvig-Hanssen, "Humour," 99.
[53] Serazio, "Apolitical Irony," 83.

meaning for the mashup as a whole; the listener must reevaluate both original songs.[54] But even without recognizing the actual sampled songs, the pop topics can still provide meaning.

Many other mashups follow the same common aim of subversion or mockery. Noticing the subversive potential of mashups is about as far as most scholars have gone in their research of this music. As Serazio summarizes:

> As politically defining pop goes, I believe the mashup movement is surprisingly vapid. Certainly it does serve a limited political function. Mashers rewrite the pop canon in a way that critics and musicians wouldn't prefer and subvert taste hierarchies that dominate pop music. Their deconstructionist, re-appropriationist mentality—whereby texts are stripped of original meaning and soldered to others—also blurs the high-low culture divide.[55]

In other words, mashers juxtapose topics to blur the lines of genre that the music industry imposes, but they also rely on the indexical relationships of those topics to create their meaning. But what about more complex mashups, which the literature has tended to ignore? Furthermore, how would mashups that employ similar topics, instead of the juxtaposition of disparate topics, be analyzed? How is a mashup organized? In the next section, I lay out a strategy for the incorporation of Hatten's largest-scale semiotic device and compare it to research done on musical collage of the post-war era.

[54] As I will show later, the clash also reveals the compatibility of the underlying musical structures of each original song, giving the mashup's meaning a deep sense of irony.
[55] Serazio, "Apolotical Irony," 91.

3. Form and structure of mashups

One of Hatten's contributions to musical semiotics is the concept of an *expressive* genre.[56] Hatten described it basically as an archetypal way to organize a piece in order to mediate meaning. Expressive genres, he says, are the "largest types encountered in a style."[57] A classic example is the tragic-to-transcendent, typified by Beethoven's Fifth Symphony, in which a hero can be seen to triumph over increasingly tragic conflicts. Hatten summarizes the role of the expressive genre in describing the pastoral: "I shall demonstrate how the pastoral not only evokes its topical affect but more impressively guides a listener through an interpretation of succeeding events as part of a coherent dramatic scenario."[58] In other words, the expressive genre introduces an interpretant that can guide the listener to find meaning and coherence in a piece. This, I claim, is what a mashup does as well; through recontextualization, a mashup grants a new interpretant by which the sampled topics can be understood in opposition or in cooperation. This is reinforced by Hatten's later description:

> When framing expressive genres for Beethoven, one must consider how genre is characterized or distinguished by oppositions in the style. I shall illustrate how markedness governs those oppositions and provides an explanation for the narrower expressive range of one genre as opposed to another. In turn, my account of expressive genres in relation to formal types will suggest their increasing kinship in Beethoven's later works, leading to the idea of expressive associations for formal types or procedures such as variation and fugue.[59]

Expressive genre, I claim, can be reinterpreted for mashups as the general message or goal of the work, which serves to organize and structure the samples or topics into a coherent new song. It serves to mediate the meaning in a mashup by both applying a new interpretant and by introducing markedness or neutralization. I appropriate Hatten's term, but relabel it

[56] Hatten, *Beethoven*, 69.
[57] Ibid.
[58] Ibid., 70.
[59] Ibid.

interaction method both to distinguish it from the common notion of genre in popular music and the better to describe its role in a mashup.

The idea of an overarching goal to structure a mashup aligns closely with the only other significant study done on the musical (as opposed to legal, historical, ethnographic, or metaphysical) aspects of mashups, Anthony Cushing's recent dissertation work. In one of his chapters, Cushing discusses the possibility for interaction between samples to provide programmatic narratives:

> As music objects inhabit the contrapuntal space, they interact harmonically or semantically to create various textural combinations. Inside the space, they carry their external associations with them. Objects with melodic content may carry associations of a particular person, artist, or era. Lyric material embedded in objects may carry a built-in program and associations with the original work. The composer has the opportunity to create original programs through object interactions in the contrapuntal space.[60]

He then goes on to categorize the different types of narratives possible in mashups. Although not explicitly discussed in semiotic terms, his categories of interaction very much resemble Hatten's *expressive genre* and my *interaction method* in that they provide a framework for understanding the realized narrative of a mashup, but Cushing treats form separately. I suggest *interaction method* and form are integrally related.

These notions also comport well with John Flinn's work on postmodernism in Berio's *Sinfonia*. In his methodology, Flinn borrows from Frederic Ferré, whose work on ecological systems provides the basis for structural analyses. As Flinn summarizes,

> Ferré's proposed ecosystemic model of postmodernism was based not on deconstruction or the breaking down of a text into constituent parts with no concern about relations, but rather on reconstruction—the assembling of a whole from disparate parts and the relationships between those disparate parts. Ferré used ecology, with its networks of interactions between biota (or life forms) and landscape, as the basis for his theories, and it is those networks of interactions that will serve as the framework for an analytical model."[61]

[60] Cushing, "Three Solitudes," 174.
[61] Flinn, "Reconstructive Postmodernism," 55.

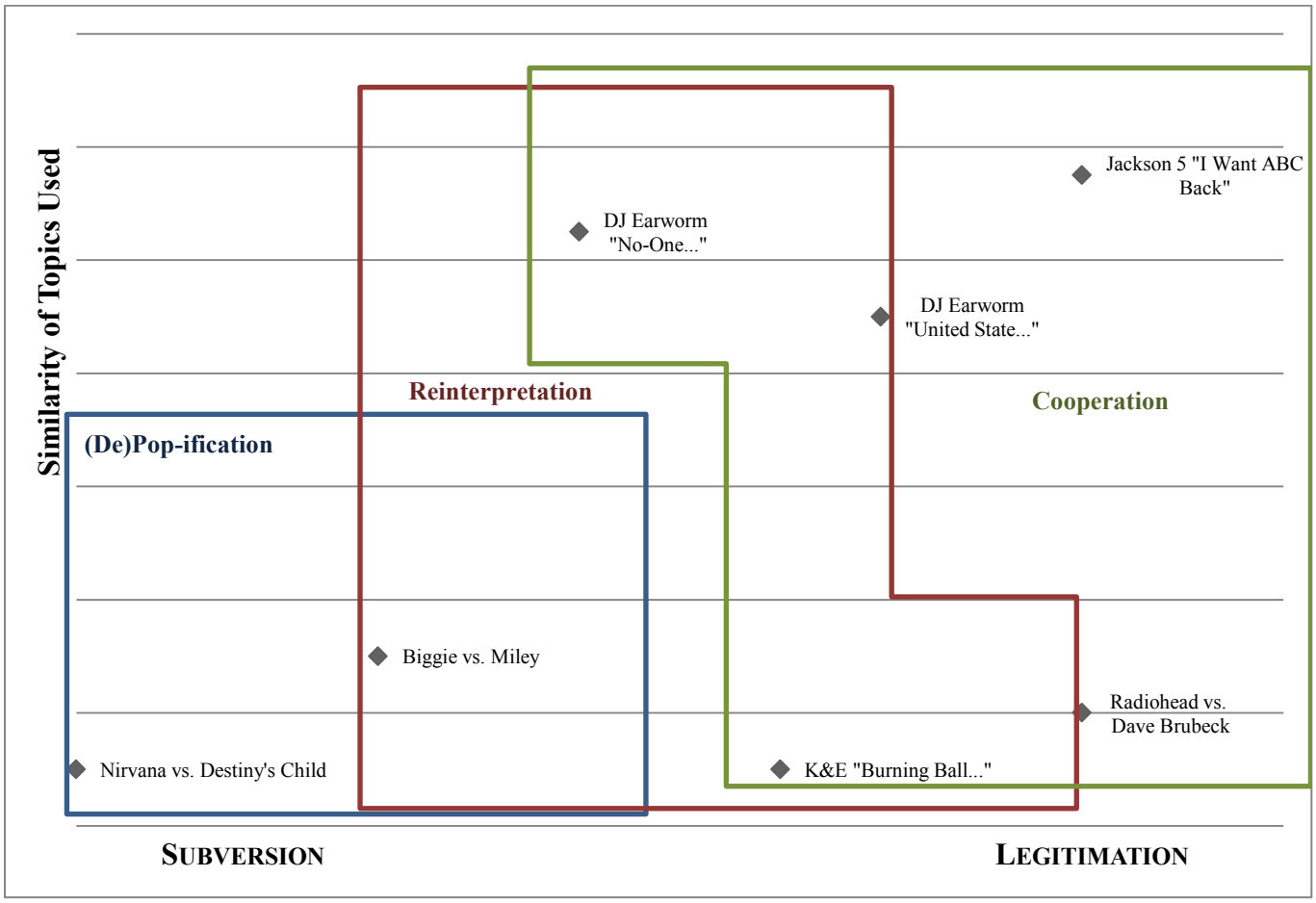
The basic approach, then, is to determine which musical elements act as the landscape and biota at any given time in the reconstruction, and then to interpret the interaction between them.

I lay out a two-dimensional field with three main regions of interaction methods in EXAMPLE 3.2 with the realization that it could be expanded. The horizontal axis represents a spectrum between subversion of original topical meanings of the samples to the legitimation of their original meanings. The vertical axis shows the similarity of topics. The more closely related the topics used, the higher on the graph they will be. These criteria are both obviously subjective, but can easily be understood. With a larger sample size, a general linear trend can be seen, as the legitimation and similarity of topics are often directly related.[62] The three interaction methods are (de)pop-ification (the combination of an obvious top-40 pop topic with a somewhat more marginal topic), reinterpretation, and cooperation. There is, of course, considerable overlap between these fields. Any mashup is understood generally as a reinterpretation, but here I claim that reinterpretation is a genuine interaction method that seeks to present the topics via a new interpretant without an agenda to subvert or legitimize original meanings necessarily. Almost all mashups studied in the existing literature fall under the control of the (de)pop-ification method.

Liam McGranahan's recent ethnographic work on the mashup community supports my decisions in the creation of this graph. He summarizes the aesthetic values of the mashup community as focusing on the following: "combination, reliance on samples, songcraft, recognizability, genre clash, humor and satire, and finally the difficult-to-attain goal of lyrical and thematic interplay of sources."[63] The combination of and the reliance on samples both fall

[62] I have included only a few examples here to avoid obfuscating the goal of the graph. Including more mashups would reveal clusters in the lower left corner and the upper right, with a general trend showing a linear increase of legitimation proportional to the similarity of topics used.
[63] McGranahan, "Mashnography," 69-70.

into the basic definition of mashup. Genre clash, humor and satire, and content interplay, I argue, all contribute to the final songcraft, whose structure and meaning are mediated by the interaction methods and the recognizability of topics.



EXAMPLE 3.2. Some possible *interaction methods* with exemplifying mashups.

3.1 Some basic examples

Those mashups discussed above—Biggie vs. Miley and Nirvana vs. Destiny's Child—both fall under the (de)pop-ification method, which typically results in common popular song forms.[64] Further, basic 1:1 mashups often adopt and conform to the structure of one of the original tracks,

[64] Though outside the purview of this paper, a basic primer to current work on form in pop-rock music can be found in Mark Spicer's article, "(Per)Form in(g) Rock: A Response," *Music Theory Online*, vol. 17, no. 3 (2011). <http://www.mtosmt.org/issues/mto.11.17.3/mto.11.17.3.spicer.html>

providing a literal and obvious example of Burkholder's definition of "modeling" in works that rely on borrowing. For Burkholder, different methods of quotation and incorporation of borrowed musical materials affect the final form of the piece.[65] A composer can model "a work or section on an existing piece [by] assuming its structure, incorporating part of its melodic material, imitating its form or procedures, or using it as a model in some other way "[66] The (de)pop-ification method in general relies on this basic modeling principal, with one original song providing the basic structure or form for the mashup. As Flinn summarizes, "a piece is said to model the form of another piece when a specific piece or movement's form is duplicated almost precisely within the context of a different piece or movement for the express purpose of reminding the listener and/or performer of the earlier piece."[67]

Most (de)pop-ification mashups also could be seen in terms of Burkholder's category of setting, in which an existing tune is placed atop a new accompaniment.[68] The problem with this interpretation is that the setting, the new accompaniment, cannot truly be seen as new, since it is another literal quotation. This is perhaps why authors such as Gunkel and Serazio dismiss the originality of these combinations.

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[65] These are given in full in APPENDIX 2. I avoid using the term "collage" to describe mashups, as it generally implies a certain lack of cohesion between quoted materials. Take Burkholder's entry for collage in Grove Online: "Musical collage is the juxtaposition of multiple quotations, styles or textures so that each element maintains its individuality and the elements are perceived as excerpted from many sources and arranged together, rather than sharing common origins." This seems to accurately account for mashups' use of borrowed material; however, as Burkholder later describes in the article: "Collage is distinct from quodlibet, medley, potpourri, centonization, and other traditional procedures in that the diverse elements do not fit smoothly together…Elements in a collage often differ in key, timbre, texture, metre or tempo, and lack of fit is an important factor in preserving the individuality of each and conveying the impression of a diverse assemblage." Mashup artists aspire to create coherent new songs in which the elements fit together while still maintaining their unique semiotic meanings from their original contexts. Burkholder, "Collage," *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed April 5, 2013, <http://www.oxfordmusiconline.com.offcampus.lib.washington.edu/subscriber/article/grove/music/53083.>

[66] Burkholder, "Borrowing as a Field," 854.

[67] Flinn, "Reconstructive Postmodernism," 113.

[68] Burkholder, "Borrowing as a Field," 854.

Intro (4)	Verse (14)	Chorus (10)	Verse	Chorus	Bridge (8)	Chorus	Chorus
0-0:10	0:10-0:45	0:45-1:10	1:10-1:45	1:45-2:10	2:10-2:30	2:30-2:55	2:55-END

EXAMPLE 3.3. "Party in the USA."
Verses are 14 bars (12+2 bar echo), Choruses are 10 bars (8+2 bar echo).Parenthetical numbers in these graphs represent number of measures, (eg. the intro here has 4 bars.)

Intro (4)	Verse (16)	Chorus (16)	Verse	Chorus	Verse	FIGHT (4)	"Verse" (4)	Chorus
0-0:10	0:10-0:48	0:48-1:08	1:08-1:46	1:46-2:05	2:05-2:39	2:39-2:48	2:48-2:58	2:58-END

EXAMPLE 3.4. "Party and Bullshit."
Verses are 16 bars (except during the fight and final "verse"), choruses are 8 bars.

Verse (16)	Chorus (10)	Verse	Chorus	Verse + Break	Chorus	Chorus + Biggie
0-0:45	0:45-1:10	1:10-1:50	1:50-2:15	2:15-2:50	2:50-3:15	3:15-END

EXAMPLE 3.5. "Party and Bullshit in the USA."
Verses are 16 bars, modeled on Biggie's track in EXAMPLE 3.4; choruses are 10 bars, modeled chiefly on Cyrus's chorus.

For "Party and Bullshit in the USA," both original tracks share a similar form (see EXAMPLES 3.3 and 3.4). But in the mashup (EXAMPLE 3.5), Biggie is seemingly repackaged in Cyrus's song, merely placed on top of the pop instrumentals. Given this viewpoint, the Biggie track initially appears to be a life-form, as understood in Flinn's adaptation of Ferré's methodology, navigating and interacting with the Cyrus instrumental landscape. The mashup superficially suggests Burkholder's modeling, with Cyrus as the structural basis. Upon closer analysis, the original Biggie track provides the structure and the landscape through his lyrics and rhyme schemes, while the backup instrumentals must adapt to survive the transition to the new mashup form. The verses of the mashup are 16 measures long, based on Biggie's original track. The choruses are 10 bars each, which can be understood either as half of Biggie's 16 bar choruses with the addition of a two bar echo, a common device in Cyrus's original song, or as a simple facsimile of Cyrus's chorus.

The semiotic reading above, wherein Biggie's legitimacy was questioned when forced into Miley's pop soundscape, seems to be at odds with this new understanding. Similarly, the simple reappropriation of Burkholder's *setting*, in which the existing Biggie lyrics with a new pop accompaniment, opposes the structural understanding above. Indeed, a power struggle ensues in the listener's mind, forcing him/her to rely on prior aural experiences and more symbolic interpretants in order to sort out the mashup. This, I believe, is one great artistic capacity of the mashup genre that forces engagement from the listener; is one track dominating the other or are they both to be read in relation to each other? Being able to comprehend the two tracks aurally is less important than to be able to discern the relation between them. Burkholder's modeling method provides an appropriate tool for an investigation of such.

Even in this basic category of Burkholder's borrowing, many other artistically interesting possibilities remain for the mashup artist. The Radiohead mashup, seen in the lower right corner of EXAMPLE 3.2, mixes two disparate topics, cool jazz and prog rock. Both original songs—Radiohead's "15 Step" and Dave Brubeck's seminal "Take Five"—are somewhat "experimental" in their quintuple time. But, like the Biggie vs. Miley example, one track takes precedence as the landscape, providing the structure. In this case, the Radiohead song is merely filled out texturally, augmented with samples from "Take Five," while the structure remains intact. The DJ may be trying to legitimate the Radiohead song by inclusion of the jazz topic, which is often seen as more innovative and artsy than generic popular music.[69]

[69] Cushing's analysis, given in APPENDIX 3, provides a clear structural analysis of the mashup and includes how the Brubeck additions fit within the Radiohead song. According to Cushing, the elements in this category of mashup only augment or "flesh-out" other samples or works through their interaction "and do not carry any programmatic meaning." (Cushing, "Three Solitudes," 182). While I agree that the combination adds no new narrative to the song's structure, it does imply a semiotic reinterpretation of the legitimacy and authenticity of the rock topic by including jazz.

As seen in the graph, both the Jackson 5 mashup and the Radiohead vs. Dave Brubeck mashups serve to legitimate the original topics. In the Jackson 5 mashup, two of their songs, representing the exact same topic, are mixed together, resulting in a new coherent song. As shown by McGranahan, the two songs share the same key, meter, length, and nearly identical tempi. Additionally, they both follow the exact same form, albeit with intros of different lengths.[70] The mashup, however, follows a different, albeit related form. McGranahan charts out the combination visually and proves the technical virtuosity and craftsmanship involved in the creation of a simple-sounding mashup.

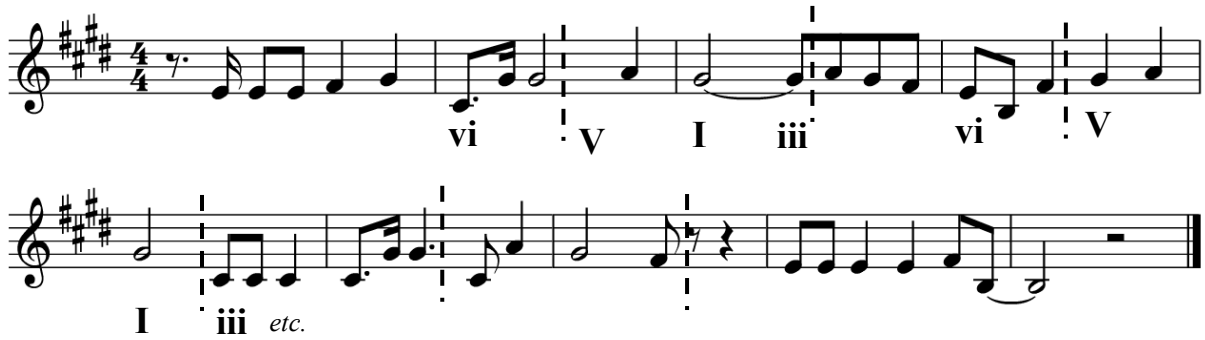
3.2 More complex examples

I first wish to investigate a popular mashup by DJ Earworm, a complex example that highlights different modes of interaction and categories of Burkholder's musical borrowing.[71] Like Girl Talk's music, mentioned earlier, "Blame it on the Pop" incorporates many samples; but instead of composing a sectionalized series of pop combinations, DJ Earworm presents a new vision of what a mashup can be. In an interview about the influence of other DJs, Earworm had this to say:

> I was first inspired by 2 Many DJs, but that was a while ago, and my concept of mashup has changed a lot since then. But there's a whole school of more complex mashup artists coming up…In all honesty, I hardly listen to mashups at all. I try to model my mashups after non-mashup music.[72]

[70] As McGranahan shows, the technicality required for the combination is far from trivial. "Mashnography," 50-53.
[71] Though I borrow some material from Cushing's analysis of this first Earworm example, my analysis is based on independent work from the Fall of 2011.
[72] Linda Haywood, "DJ Earworm "Working Feverishly" to Complete United State of Pop 2010," *The Global Herald*, December 15, 2010, accessed November 25, 2011, <http://theglobalherald.com/dj-earworm-working-feverishly-to-complete-united-state-of-pop-2010/8259/.>

His tracks really do feel like traditional, "non-mashup" songs, despite their prevailing complexes of samples. Earworm's "United State of Pop," an annual mashup of the year's 25 top Billboard hits into one comprehensive four to six minute track, serves as his main artistic outlet; the result is a singular, coherent new pop song. The intricacy is staggering, with synth lines, vocals, bass riffs, drum beats, and every other musical element from each song up for grabs. He combines vocal snippets to form new lyrics, adjusts and edits to create new melodies. Instrumental accompaniments are left relatively intact but are combined in attention-grabbing ways. The technique most clearly aligns with Burkholder's category of *patchwork*, "in which fragments of two or more tunes are stitched together, sometimes elided through paraphrase and sometimes linked by [the composer's] own interpolations."[73] Although similar to medley or *quodlibet*, each musical element in a patchwork is stitched together to form a melody with its "own melodic logic and integrity."[74] The following example, from DJ Earworm's most recent edition of the "United State of Pop," 2012's "Shine Brighter," is the combination of seven different, fairly unadulterated melodies, each about the length of one measure. While the lyrics are somewhat uninteresting, the melodic coherence is notable. Notice the clearly demarcated four-bar phrases.



EXAMPLE 3.6. A verse from DJ Earworm's 2012 "United State of Pop." (0:52 – 1:09). Different samples are separated by dashed vertical lines. The vi—V—I—iii pattern is repeated. The lyrics are: "We'll set the world on fire—tonight—I hear your heart beat —tonight—We can glow brighter—shine bright—carry me home tonight."

[73] Burkholder, "Borrowing as a Field," 854.
[74] Ibid., 855.

DJ Earworm's most popular "United State of Pop" edition is his 2009 "Blame it on the Pop," having garnered nearly 40 million views on his YouTube channel by November 2011.[75] The Black Eyed Peas' "I Got a Feeling" and "Boom Boom Pow" provide the instrumental and harmonic foundation, obviously acting as the landscape in Flinn's terms. As noted by Cushing, the basic progression of I-IV-vi-IV in A major is repeated throughout, giving a stable and narrow harmonic framework that sustains the tonic note throughout and can easily support melodies from a large number of related keys.[76] Cushing also mentions the conspicuous absence of a dominant chord in the progression, which ends up allowing for melodic fragments with $\flat\hat{7}$ to be incorporated quite easily. This, however, is no surprise. As commented upon in pop/rock analysis, plagal relations (especially at cadences) seem to form a more standard harmonic understanding than dominant relationships for much of pop/rock music from the since the 1950s. While beyond the purview of this essay, this ascending fifths motion, as opposed to common-practice era's hegemonic descending fifths, will be touched upon in the next mashup example.[77]

Getting back to the "United State of Pop," the remaining 25 songs are quoted at different lengths and interact quite clearly as biota in Flinn's terms. The flow and coherence of both the resulting melody and lyrics is truly astounding, considering that no particular source is used for more than a couple of measures at a time. Take the artificial duet created between Miley Cyrus and Beyoncé forty-five seconds into the song:[78]

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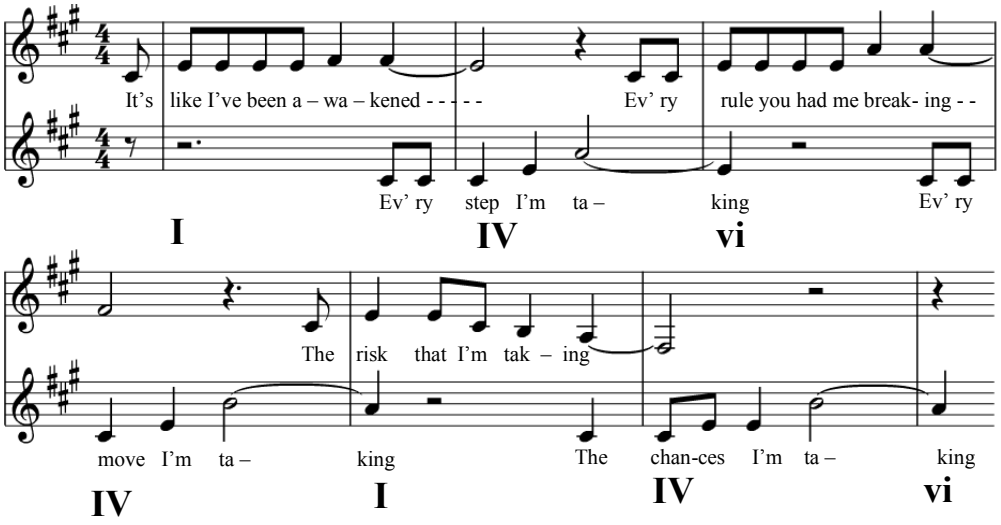
[75] The video was unfortunately taken down sometime before April, 2013 due to copyright allegations from Universal Music Group. The mashup can be found in .mp3 form on Earworm's website given in APPENDIX 1.

[76] Cushing, "Three Solitudes," 117. Cushing also provides a table of each sampled song and its main key area. While interesting, I do not find the table very useful since the sampled melodic fragments are often very short and occasionally transposed.

[77] See especially David Temperley, "The Cadential IV in Rock,". *Music Theory Online*, vol. 17, no. 1 (2011) ; and Trevor de Clercq and Temperly, "A Corpus Analysis of Rock Harmony," *Popular Music*, vol. 30, no. 1 (2011): 47-70.

[78] This duet could be understood as *quodlibet*, although without the comic connotations, instead of the *patchwork* of the rest of the melody.



EXAMPLE 3.7. A duet between Beyoncé (on top) and Cyrus (on bottom). (0:44-0:57) Notice how the ties add harmonic interest in addition to similar melodic contour.

The ease in which these lyrics fit together is clear, but the line of the melody flows just as effortlessly. The call-and-response nature corresponds well with the melodic scheme: Beyoncé's slightly more rhythmically interesting line is surrounded by Cyrus's smooth arpeggios. Manipulated to the same key and tempo,[79] both lines swell on neighbor notes and share similar contours until Beyoncé's final descent, and the amalgamation of the two working in the same harmonic space together is beautifully effective.

Throughout "Blame it on the Pop," DJ Earworm fuses lyrics to create a theme of perseverance. 2009 was quite obviously a terrible year for the U.S. economy, and DJ Earworm manages to find a thread of hope in the often superficial pop landscape.

> I decided to sum up how things are and make a cohesive statement. I tried even harder this year (2009) to try to make a comment on where we are, and I felt strongly there was this new message in pop music…I wanted to express that times

[79] Miley from E major, Beyoncé already in A major.

> are tough right now but music is here to heal us and to make us feel better at least right now.[80]

The lyric, "No need to worry, just pick back up when you're tumbling down, down, down, down, down" that recurs in the chorus sections of the mashup (at 0:37), is formed by combining words from seven different songs. The cooperation method from the graph in EXAMPLE 3.2 should be quite apparent in this song and it fits in nicely with the composer's intent.

The form can similarly be seen as one of cooperation. Cushing's table provides an accurate summary and outline of the formal structure. Though it represents, in Cushing's terms, a "fluid form," one can easily see its reliance on verse units, and repeated (though sometimes slightly modified) choruses and refrains. The sections are divided lyrically and texturally.

Measure	Section	Measure	Section
1-8	Intro	63-70	Bridge
9-24	Refrain	71-78	V3
25-32	Verse 1	79-86	Refrain
33-40	Chorus	87-94	Chorus
41-44	Refrain	95-96	Break
45-51	V2	97-112	V4
52-54	Break	113-138	V5
55-62	Chorus	139-142	Outro

EXAMPLE 3.8. Structure of "Blame it on the Pop."[81]

DJ Earworm's "No-one Takes your Freedom" is another complex mashup that illustrates another innovative compositional strategy. In this mashup, three main sources provide samples, but, as with the amalgamation of top-40 hits above, the topics are all very similar. The Beatles' "For No One" and Scissor Sisters' "Take your Momma" provide the main material, both from the very general rock topic, and are joined later by George Michael's "Freedom." The Beatles

[80] Jo Piazza, "DJ Earworm: Man Behind Viral Year-End mashups," January 25 2010, accessed November 25, 2011, <http://articles.cnn.com/2010-01-25/entertainment/dj.earworm_1_mashup-songs-copyright-law?_s=PM:SHOWBIZ.>

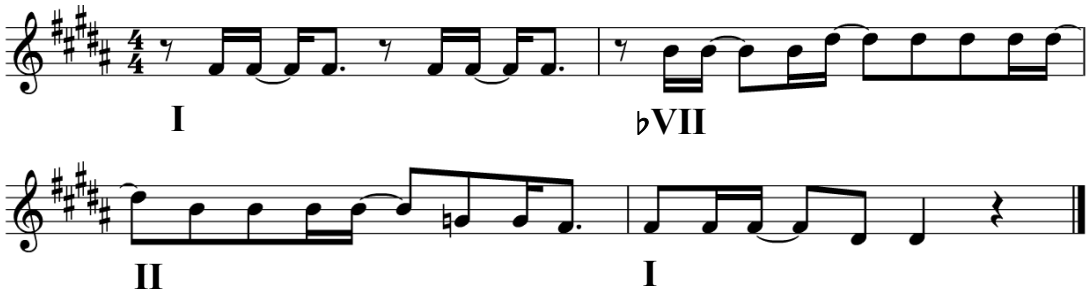
[81] Cushing, "Three Solitudes," 129.

and Scissor Sisters topics come from a white, male perspective, and both songs are concerned with identity after the end of a relationship. Without the possibility of subversion of topic, the mashup, in this case, fosters a sense of and is bounded by cooperation. The instrumentals and vocals from these two songs are used throughout the mashup, and a dialogue between Jake Shears and Paul McCartney dominates the first half of the work through the interaction between their respective melodies and the harmonies. The basic chord progressions of the sections used from these songs are outlined briefly below:

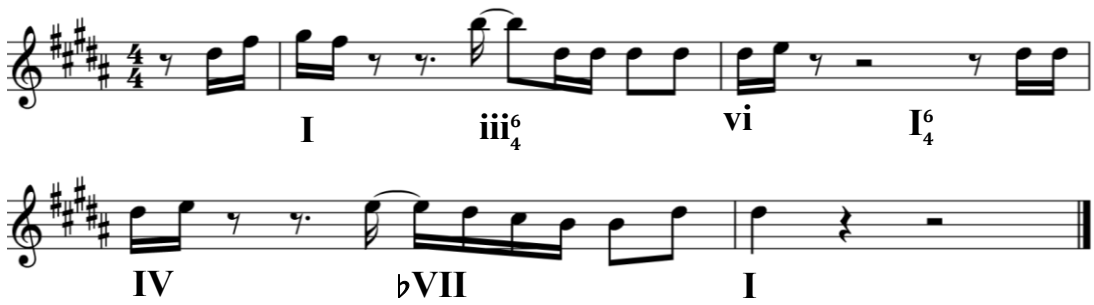
"Take Your Momma"	"For No One"
I—♭VII—ii (or IV in chorus) – I	I—iii$^{6}_{4}$—vi—I$^{6}_{4}$—IV—♭VII – I (in "verse")

EXAMPLE 3.9. Basic harmonic progressions in "No-One Takes…"

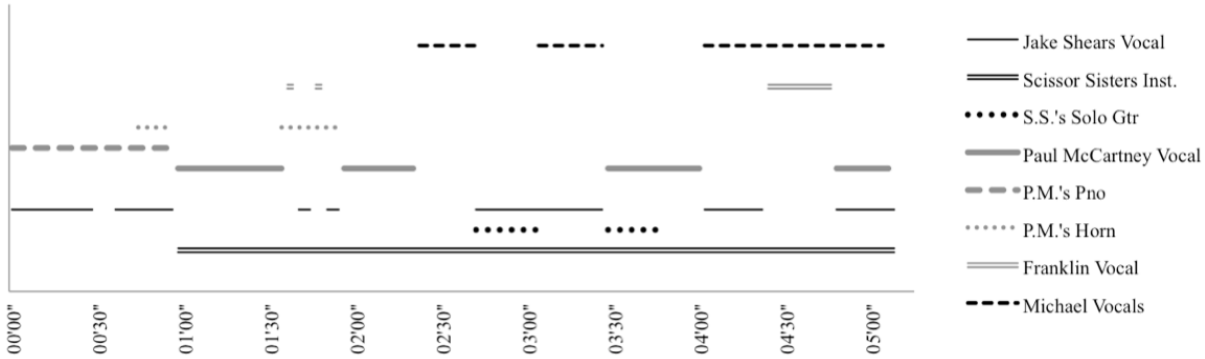
Melodies from each song's verses are given below. Paul McCartney's line sticks near the tonic triad. When he moves to a ♭$\hat{6}$ in the third measure of the example, McCartney glides and causes some ambiguity in pitch. Sung well before the auto-tune era, this effect allows DJ Earworm some flexibility in his harmonization of the line.



EXAMPLE 3.10. Paul McCartney's initial verse melody with Scissor Sisters' harmonic progression. Although the melody in measures 2 and 3 contains few chord tones, the pitches add to the complexity of the harmonies, filling out the simple triads with ninths and elevenths. In context, one hardly notices the dissonances, and the melody works quite well in the new harmonic context.



EXAMPLE 3.11. Jake Shears's verse melody above the Beatles' piano harmonic progression. Notice the easy fit, with the upper neighbor embellishments in measures 1 (after pickup) and 3, and anticipation towards the final resolution to the tonic.



EXAMPLE 3.12. A textural analysis of "No-one…"[82]

Given these representative examples of how melody and harmony are able to work together in this mashup in a cooperative fashion, what can be said about the form? Cushing's graph shows the basic relationships spelled out by the texture, which gradually thickens as time goes on. When listening to the new song, the end indeed sounds like full-on coda. But this analysis leaves out important information concerning the actual relationship of the different sections. Unlike the "United State of Pop" example above, there are harmonic cues to formal units in addition to lyrical or textural markers in this mashup. I outline the basic structure in EXAMPLE 3.13 below. The colors in the graph lay out the main structural units. Outside of the introductory red section, which incorporates the relationship shown in EXAMPLE 3.11, the A

[82] From Cushing, "Three Solitudes," 133.

sections represent a harmonic progression of I—♭VII—(ii or IV)—I as listed in the Scissor Sisters chart above, while the B sections tonicize ii, based on a manipulation by DJ Earworm to extract a V/ii chord from the Scissor Scissors song. The relationships of the colored sections are explained below the table.

Time	Section	Vocals	Instrumentals	Notes
0-0:25	A	SS verse	PM piano	
0:26-0:39	B	SS verse	PM piano	
0:39-1:01	A	SS chorus	PM piano	PM horn
1:01-1:23	A	PM A section	SS verse	
1:23-1:36	B	PM B section	SS verse, manipulated	
1:37-1:59	A	SS chorus	Break, some drums	Aretha, PM horn
1:59-2:10	A'	PM A	SS verse	(Shortened!)
2:10-2:23	B	PM B		
2:24-2:46	A	GM vocals	SS verse + GM piano	
2:47-3:08	A	SS	SS chorus + GM	SS guitar solo
3:08-3:30	A	SS chorus	SS chorus + GM	GM "Freedom"
3:30-3:52	A	PM A	SS + GM	SS guitar
3:52-4:06	B	PM B	SS + GM	
4:06-4:28	A	SS chorus	SS + GM guitar	"Freedom"
4:28-4:50	A	"Freedom" + Aretha	SS + GM guitar	SS guitar
4:50-end	A	PM+SS+GM		

EXAMPLE 3.13. A formal analysis of "No-one…"
SS = Scissor Sisters; PM = Paul McCartney; GM = George Michael

1) Red represents Jake Shears's vocals on top of the Beatles' piano. Upon listening, this can be subdivided into 3 main parts: ABA', with a 2 bar transition from B back to A. The A sections are composed of a repeated 8-bar section (aa'), resulting in a length twice that of B.

2) Blue represents Paul McCartney's vocals on top of the Scissor Sisters instrumentals. [83] This section begins in the same way as that above, with an A and a B section.

3) White represents a "break" with relatively sparse instrumentals supporting the vocals from the final A' section of the red section above. This acts as a reminder of the beginning and also serves as a transition to the next blue section. The break serves structural double duty, acting as both the final A' of the above blue section and also as

[83] It is no surprise that the Scissor Sisters instrumentals take precedence over the more complicated progression of The Beatles' piano for the rest of the mashup; like the "United State of Pop," a simpler progression allows incorporation of more diverse melodic samples.

the initial A subsection (a) of the succeeding blue unit.

4) This blue unit is similarly cut short, with no repeat in its initial A section (due to the "double duty" mentioned above) and with a change to new material before its final A.

5) Yellow indicates the entrance of George Michael's vocals and the piano from his "Freedom." This A section acts like the white break earlier, concluding the previous blue section while also moving towards new material.

6) Orange, a combination of the red and yellow parts, focuses on Jake Shears's vocals on top of a combination of instrumentals from Scissor Sisters and George Michael. This combination sounds like a cumulative ending, with a build-up and a lack of a B section. But it turns out to be a sort of false coda.

7) Green, a combination of blue and yellow, signals an augmented return to McCartney's lyric section, this time bolstered by the George Michael guitar. There is one final B section.

8) Black is the coda, in which all of the parts are combined in various ways in a thick texture.

The structure of this mashup provides an interesting mix of Burkholder's categories. Besides the obvious medley (different tunes one after another, although mixed in this case), "cumulative form" seems appropriate in light of the coda ending. In this case, quotes and themes are introduced slowly and only realized as complete in a final section of the piece. Additionally, as explained by Mark Spicer in his recent work on form in rock-pop music, "a crucial feature of accumulative and cumulative forms is the ability to introduce parts in multiple layers (an effect somewhat similar to the 'terraced instrumentation' that is characteristic of many Baroque orchestral pieces)…"[84] This lends credence to a reading of cumulative form in this mashup.[85]

Textually, Jake Shears seems to be encouraging Paul McCartney to get over his lost love, to come out and party. This cooperation is reinforced by the samples both of Aretha Franklin,

[84] Spicer, "(Ac)cumulative Form in Pop-Rock Music," *Twentieth Century Music*, vol. 1, no. 1 (2004), 32.
[85] Another possible understanding is that of modeling. The song bears a resemblance in form to "Hey Jude," whose famous coda lasts for much, much longer than this mashup. But both are additionally about a generic white male trying to gain confidence in the dating world.

singing "freedom" from her song "Think," and of George Michael.[86] While these samples move a bit outside of the rock topic, they are used in more marginal roles than the other two mentioned above, but still affect the overall structure. The chorus from George Michael's song actually signals a gospel topic, with many voices singing "Freedom" in unison with Aretha, who readily collaborates and strengthens this idea, and adds a sort of "amen" to the sentiment. The protagonist is encouraged to get out and enjoy his freedom. By combining these different sources, DJ Earworm enacts the cooperation method which reinterprets the message of the Beatles' song especially.

3.3. Kids & Explosions

Lastly, I introduce Kids and Explosions (K&E),[87] a masher whose recent album ("Shit Computer," 2010) blurs the line between mashups and the similar practice of turntablism. The second is a performance-based practice, which combines many samples (as mentioned in relation to Girl Talk above) and often alters them with "scratches" and other common DJ techniques. K&E uses glitches and other digital manipulations to adulterate his samples, and he often switches between segments of mashed materials quite quickly.[88] But instead of a party atmosphere like that of Girl Talk, whose popular version of mashups incorporate a tremendous amount of topics and samples into discrete blocks of dance music, K&E brings a contemplative approach, eschewing mashup's stereotypically rambunctious and subversive aesthetic.

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[86] The George Michael song could easily be interpreted as a cathartic shedding of his old image, made clear by the burning of his leather jacket in the video.

[87] K&E's real name is Josh Raskin, and he is an Academy Award nominated short film director in 2008. That work, which adds an animation to a previous sound recording can be seen at his website, <http://www.imetthewalrus.com/>

[88] Glitch effects are manipulations of basic sonic components (like timbre, duration, or attack) that introduce irregularities, skips, and distortion, often described as "crunchy." For an in-depth look at the early stages of the glitch aesthetic and its relationship with electronica, see Kim Cascone, "The Aesthetics of Failure: 'Post-Digital' Tendencies in Contemporary Computer Music," *Computer Music Journal*, vol. 24, no. 4 (2000): 12-18.

Consciously and overtly ironic tracks still find their place: like "Swear Words," a "song" which contains as many sampled swear words from a wide variety of genres as K&E can fit into two minutes and sixteen seconds over mellow guitar strumming neo-folk topic of Iron and Wine before backing from "Girls Just Wanna Have Fun" enters. This track closely resembles Burkholder's collage and could even be a parody of the usual mashup subversion. But "Shit Computer" represents the artistic and creative capacity of the mashup. Take one of his more straightforward mashups, "There is a Burning Ball of Fire in Outer Space." In this mashup, another Biggie track, "Suicidal Thoughts," is mashed with Sigur Rós's "Untitled #1" to begin the track. Unlike the previous two Earworm examples that combined similar topics, these samples represent very different kinds of music. However, both are intensely emotional and expressive works. In the first, Biggie calls up his manager late at night, expressing his regrets and his desire to end his own life. Unable to listen to the words coming from the other end of the phone urging him to calm down and have a conversation, Biggie shoots himself. The meaning of "Untitled #1" is discussed briefly below in relation to its music video.

K&E would be mistaken if he believed that listeners would necessarily be familiar with this Sigur Rós piece or with the band in general. As explained by Osborn, Sigur Rós represents one strand of the Post-Rock/Post-metal topic, in which textures and sounds take precedence over traditional song forms, riffs, or hooks. Sigur Rós makes use of gibberish syllables instead of standard vocals, and they often use through-composed song forms.[89] By borrowing from more arcane sources, K&E denies half of the iconic relationships possible in a 1:1 mashup, and he must make up for it in some way: namely, by making the combination of topics more musically creative.

[89] Osborn, "Beyond Verse and Chorus," 51.

To begin with, Biggie's lyrics are edited, shifted, and given a digital reworking, as seen in EXAMPLE 3.14. K&E adds glitch effects, creating movement and tension as Biggie's will begins to give way to the serious option of suicide. The glitch skips imitate voice cracks. The added stutters convey his trouble articulating his thoughts. K&E removes those lines revealing Biggie's love affair with his baby's mother's sister. By eliminating these reprehensible lyrics, K&E gives the listener a more universally relatable and sympathetic character. Instead of expressing his suicidal thoughts in a phone call late at night with his producer, Biggie is now deep in thought, concerned about his relationship with his family, expressing regrets.

The background piano texture of Sigur Rós's ambient post-rock topic grows and crescendos with Biggie's lyrics as he contemplates suicide. The interaction between the landscape and the biota is evident. While rap lyrics are generally understood as spoken word, the pitch contour of Biggie's lyrics often move in contrary motion to the swells of Sigur Rós's progressions. While Biggie's rhymes generally descend in pitch throughout, coming to a rest near the end of each phrase, the new bass backdrop ascends throughout, beginning each phrase at the bottom of its path.[90] The contemplative, peaceful chords don't serve to undermine or mock the situation. In fact, the creative indexing here adds a poignancy the sparse, plain drum beat of Biggie's original setting lacked. If listeners are aware of the original music video of the Sigur Rós piece, in which a post-apocalyptic playground scene ends in the quiet, accidental passing of a young child, the mashup takes on an even higher level of symbolic meaning, a commentary on mortality and innocence. No mockery, ironic commentary, or humorous recontextualization here.

[90] The progression, in A♭ major, is IV^6- $vii^{ø7}$ - vi^6 - V^4_3 - I, with a bass motion from $\hat{6}$ up to $\hat{2}$ before resolving to the tonic.

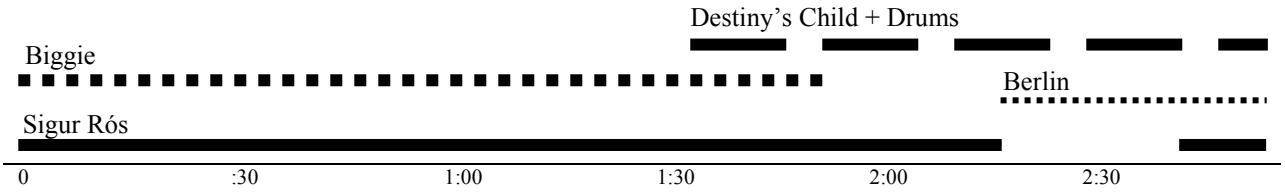
Original Lyrics	Altered Lyrics (Highlighted in gray, with glitches in bold)
When I die, fuck it I wanna go to hell Cause I'm a piece of shit, it ain't hard to fuckin' tell It don't make sense, goin' to heaven with the goodie-goodies Dressed in white, I like black Tims and black hoodies [drum intro]God will probably have me on some real strict shit No sleepin' all day, no gettin my dick licked Hangin' with the goodie-goodies loungin' in paradise Fuck that shit, I wanna tote guns and shoot dice All my life I been considered as the worst Lyin' to my mother, even stealin' out her purse Crime after crime, from drugs to extortion I know my mother wished she got a fuckin' abortion She don't even love me like she did when I was younger Suckin' on her chest just to stop my fuckin' hunger I wonder if I died, would tears come to her eyes? Forgive me for my disrespect, forgive me for my lies My babies' mothers 8 months, her little sister's 2 Who's to blame for both of them (naw nigga, not you) I swear to God I just want to slit my wrists and end this bullshit Throw the Magnum to my head, threaten to pull shit And squeeze, until the bed's, completely red I'm glad I'm dead, a worthless fuckin' buddah head The stress is buildin' up, I can't, I can't believe suicide's on my fuckin' mind I want to leave, I swear to God I feel like death is fuckin' callin' me Naw you wouldn't understand (nigga, talk to me please) You see its kinda like the crack did to Pookie, in New Jack Except when I cross over, there ain't no comin' back Should I die on the train track, like Remo in Beatstreet People at the funeral frontin' like they miss me My baby momma kissed me but she glad I'm gone She know me and her sista had somethin' goin' on I reach my peak, I can't speak, call my nigga Chic, tell him that my will is weak. I'm sick of niggas lyin', I'm sick of bitches hawkin', matter of fact, I'm sick of talkin'.	When I die, fuck it I wanna go to **HELL** Cause I'm a shit **shit**, it ain't hard to fuckin' tell It don't make sense, goin' to heaven wit heaven goodie-goodies Dressed in white, I like black black black hoodies God will probably [unintelligible **glitch**] have me on some shit No sleepin' all day, no gettin my **dick** dick licked Hangin' with the goodies loun-loungin' in paradise Fuck that, I wanna tote tote guns and shoot dice All my life All my life I been the worst Lyin Lyin ' to my mother, stealin stealin ' out her purse Cri crime to crime crime, from drugs to extortion my mother mother wished she got a fuckin' abortion She don't even love me like she love me like she younger Suckin' Suckin' on her chest just to stop my fuckin' hunger I wonder if I died died died, would tears come to her eyes eye ey-**ey** eyes? Forgive me for my disredisredisredisrespect spect, forgive me for my lies lies **lies** I swear to God I want to slit slit my wrists and end this bullshit Throw the Magnum to my head, threaten to pull pull shit Squeeze, until the bed's, completely red I'm fuck fuckin worthless glad I'm glad I'm fuckin dead The stress is buildin' buildin' up up, I can't believe suicide's on my fuckin' mind I want to leave, I swear to **God** I feel like death is fuckin' callin' me But Naw you wouldn't understand (intro of Beyoncé in italics) *now that you're outta my life* You see its kinda like the **crack**.[*i can't breathe without you*] . in New New Jack [*I'll be broke without you*] Excep except when I cross over, [*bad without you*] there ain't no com- comin' back *broke without you* I I reach my peak peak, [B*eyoncé glitches]* I can't can't can't speak, call ca call m my nigga Chic, [*same*] tell him that my will is weak. *I'm a survivor…*

EXAMPLE 3.14. Biggie's original (left) and altered (right) lyrics.

Instead, the two tracks legitimize each other, but they also toe the line between cooperation and reinterpretation.[91] The changed meaning of Biggie's altered words is clear. As the mashup continues, Destiny's Child makes an entrance with their song, "Survivor." That song,

[91] The mashup could even be understood as the subversion interaction method if one felt the introduction of an Icelandic rock topic de-legitimizes Biggie's intensely personal message.

originally about female empowerment and moving on after a breakup, is given a new, possibly even more powerful message. As Biggie's words trail off, Beyoncé and company talk to him, trying to communicate how important he is. They urge him along, giving him an empathetic point of view. Like he did with Biggie's lyrics, K&E shifts those of Destiny's Child around, creating a loving, caring figure who couldn't stand to lose Biggie. Biggie's voice, however, never returns. K&E introduces an instrumental sample from Berlin's "Take my Breath Away," to support Destiny Child's lyrics. Has Biggie taken his last breath? Are the members of Destiny's child left breathless after learning of Biggie's death?



EXAMPLE 3.15. Textural Outline of "Burning Ball of…"

4. Conclusion

Whatever conclusions one draws about the interaction methods above or in the example narratives of biota and landscapes, the preceding mashups' innovations represent a clear challenge to much of the current academic literature on the genre. Many scholars have arrived at a curmudgeonly position best, if curtly, summarized by David Gunkel's describing mashups as "creative efforts."[92] Recalling Serazio's statement quoted at the beginning of this paper, "is there a real cause here, beyond irony—a genuine call to arms toward something rather than a simple

[92] David Gunkel, "What Does it Matter Who is Speaking? Authorship, Authority, and the Mashup," *Popular Music and Society*, vol. 35, no. 1 (2012): 81. His placement of this phrase within quotation marks in his paper gives an unhindered sarcasm to the comment.

winkwink, tongue-in-cheek prank about nothing?"[93] One would ask: is the mashup anything more than a detached commentary or *bricolage* for its own sake? Simon Reynolds, a popular music critic for the New York Times, refers to mashups entirely in the past tense in his 2010 *Retromania*, denying their current relevancy with a bit of British pomposity.[94] I would hope that my analyses above, which show the genre as a vibrant and viable pop music medium, render Serazio's generalizing viewpoint and Gunkel's dismissal obsolescent. How detached is K&E's mashup above? Where is the prank in DJ Earworm's combination of similar topics in cooperation?

A crucial question remains for the mashup analyst. As posited by DJ Earworm himself in the FAQs section of his YouTube channel, "Doesn't this prove how much pop music sucks nowadays and is basically interchangeable?" Without engaging in the growing academic pop-rock corpus, Earworm's answer is telling: "Not at all. If you alter the tempo and pitch of any music enough, you could get anything to fit together, whether it's Bach or the Black Eyed Peas. What it does prove is how far technology has come to make these alterations sound convincing. I've manipulated some of these vocals HEAVILY."[95] It is apparent that DJ Earworm takes his creations quite seriously, needing a fair amount of technical prowess to meld 25 songs. With a dual degree in computer science and music theory,[96] and armed with an apparent appreciation for mainstream popular music, DJ Earworm's mashups show a profundity of expertise and artistry, enabled by advancements in musical technology.

So what of mashups' aesthetic and artistic possibilities? As has been briefly shown, form, textual and textural interplay, and narrative all reach levels of sophistication found in other pop-

[93] Serazio, "Apolitical Irony," 91.
[94] Reynolds, *Retromania,* 354-360.
[95] From DJ Earworm's YouTube channel: <http://www.youtube.com/user/djearworm#p/a/f/2/iNzrwh2Z2hQ.>
[96] Haywood, "Working Feverishly."

rock music, though in a unique tapestry of borrowing. I believe that the mashup reveals itself as a vital and varied postmodern musical outlet. In his 1989 article, John Rahn asked "What is valuable in art, and can music still achieve it?"[97] After dismissing functionalism as an unsophisticated assessment of music's artistic or aesthetic value ("what music is valuable *for* is not what is valuable *in* music"),[98] Rahn ridicules an understanding of music as property. Mashups, I believe, clearly do the same. Though they rely on popular music's recognizability, their appropriation and resetting of their sources undermines the value of music as a commodity. Rahn also posits six characteristics of value in art: craftsmanship, expression, self-expression, music and the sacred, art as communicative action, and the necessity of originality. Although this list was compiled with contemporary Western art music in mind, I believe mashups meet at least four of Rahn's requirements. As has been shown, one could argue mashups attain levels of craftsmanship (in both form and melodic patchwork), expression, communication (especially in semiotic terms), and originality to a degree of other popular music genres, at least.

Self-expression remains a more difficult defense. For much of the twentieth century, philosophers and artists have grappled with the idea of authorship and authority. Gunkel, in quoting Foucault's quotation of Beckett, asks, "What does it matter who is speaking, someone said, what does it matter who is speaking?"[99] Roland Barthes is summoned, and that all-too-familiar phrase, "the death of the author," must be engaged. Mashups seem to be aimed at the deconstruction of the author/genius whose intentions in creating a work—intentions that supposedly underlie its meaning —are the object of analysis. Instead, "everything is to be

[97] John Rahn, "What is Valuable in Art, and Can Music Still Achieve It?" *Perspectives of New Music*, vol. 27, no. 2 (1989): 6-17.
[98] Rahn, "Valuable in Art," 7.
[99] As quoted in Gunkel, "What Does it Matter?" 71.

disentangled,"[100] elements and their respective sources sought out. As Gunkel summarizes, the new objective "is not to unearth the profound intentions of the author but to analyze through its structure, its architecture, its intrinsic form and the play of its internal relationships."[101] The listener is granted a heightened status in the artist/audience binary, with the mashup producer right alongside in the challenge to the original/copy opposition.

The resulting shift to a configurable culture has brought to copyright issues an increasingly unwieldy lens. For a scholar reared in the internet age of file sharing and cloud storage, antiquated views of intellectual property seem almost too trivial to even consider. What *does* it matter who is speaking? Why *do* the major record labels still retain their stranglehold on popular music, and, in turn, how can we get away from the influence of its machinery that modernist thinkers like Adorno found so destructive to art?[102]

John Oswald, a predecessor to the modern mashup DJ, equipped with a pugnacious distaste for popular music, ransacked and pillaged the top 40 of the 1980s. As summarized by Simon Reynolds, Oswald's work "turned sampling into a form of digital iconoclasm…smashing pop idols to smithereens."[103] Oswald, fed up with copyright issues, made the mockery and defacement of popular artists a central artistic goal. John Oswald's appeal for open access to all music, originally channeled through his subversive track smashing, can now be seen in a more optimistic light. "Popular music," he claims, "essentially exists in a public domain. Listening to pop music isn't a matter of choice. Asked for or not, we're bombarded by it…Now can we, like Charles Ives, borrow merrily and blatantly from all the music in the air?"[104] Perhaps now that the

[100] Barthes, as quoted in Gunkel, "What Does it matter?" 86.
[101] Ibid.
[102] As summarized by Robert W. Witking, *Adorno On Popular Culture* (New York City: Routledge, 2003), 60.
[103] Reynolds, *Retromania,* 317.
[104] John Oswald, "Plunderphonics, or Audio Piracy as a Compositional Prerogative," as presented to the Wired Society Electro Acoustic Conference (Toronto, 1985). From <http://www.plunderphonics.com/.>

novelty of mashup subversion has passed, scholars can focus on the novel and innovative music coming from the genre. By analyzing the effects and affects of borrowing in mashups as compared to other traditions, we can better equip ourselves to confront standard notions of coherence, newness, and authenticity in our configurable culture. Maybe then, after we actually understand the mashup as music, we can reconsider its legality.

APPENDIX 1.
Mashups and Constituent Songs from the Text with Links

Song name	Artist	URL
Party and Bullshit	Notorious B.I.G.	http://www.youtube.com/watch?v=rEaPDNgUPLE
Party in the USA	Miley Cyrus	http://www.youtube.com/watch?v=M11SvDtPBhA
Party and Bullshit in the USA	Red Flag Productions	http://www.youtube.com/watch?v=oAt6_uTPsPY
Smells Like Teen Spirit	Nirvana	http://www.youtube.com/watch?v=hTWKbfoikeg
Bootylicious	Destiny's Child	http://www.youtube.com/watch?v=IyYnnUcgeMc
Smells Like Teen Booty	2 Many DJs	http://www.youtube.com/watch?v=fCJcIVEmUnE
Fifteen Step	Radiohead	http://www.youtube.com/watch?v=WedRDYmtvX4
Five Step	DJ Overdub	http://www.youtube.com/watch?v=sgC5jM65wqY
I Want You Back	Jackson 5	http://www.youtube.com/watch?v=s3Q80mk7bxE
A.B.C.	Jackson 5	http://www.youtube.com/watch?v=d6tlZzkqfHw
I Want ABC Back	DJ Grauffe	http://www.youtube.com/watch?v=2sJ2sfjFoNE
2012 United State of Pop	DJ Earworm	http://www.youtube.com/watch?v=6q0dsG8fTHY
2009 United State of Pop	DJ Earworm	http://djearworm.com/united-state-of-pop-2009-blame-it-on-the-pop
Take Your Mama	Scissor Sisters	http://www.youtube.com/watch?v=od7-fyGa9DQ
For No One	The Beatles	http://www.youtube.com/watch?v=J6iAykoKLog
Freedom	George Michael	http://www.youtube.com/watch?v=diYAc7gB-0A
No-one Takes Your Freedom	DJ Earworm	http://www.youtube.com/watch?v=G7U5jpHWzeE
Suicidal Thoughts	Notorious B.I.G.	http://www.youtube.com/watch?v=GygEAcFFMVs
Untitled #1	Sigur Rós	http://vimeo.com/3977534
Survivor	Destiny's Child	http://www.youtube.com/watch?v=Wmc8bQoL-J0
Take My Breath Away	Berlin	http://www.youtube.com/watch?v=K4a6ampIGao
There is a Great Burning Ball of Fire in Outer Space	Kids and Explosions	http://www.youtube.com/watch?v=AA4xY8RrDpA

APPENDIX 2.

From Burkholder, "Borrowing as a Field," 854.
List of ways Charles Ives used existing musical material.

(1) **Modeling** a work or section on an existing piece, assuming its structure, incorporating part of its melodic material, imitating its form or procedures, or using it as a model in some other way

(2) **Variations** on a given tune

(3) **Paraphrasing** an existing tune to form a new melody, theme, or motive

(4) **Arranging** a work for a new medium

(5) **Setting** an existing tune with a new accompaniment

(6) **Cantus firmus,** presenting a given tune in long notes against a more quickly moving texture

(7) **Medley,** stating two or more existing tunes, relatively complete, one after another in a single movement

(8) **Quodlibet,** combining two or more existing tunes or fragments of tunes in counterpoint or in quick succession, most often as a joke or technical tour de force

(9) **Stylistic allusion,** alluding not to a specific work but to a general style or type of music

(10) **Cumulative setting,** a complex form in which the theme, either a borrowed tune or a melody paraphrased from one or more existing tunes, is presented complete only near the end of a movement, preceded by the development of motives from the theme, fragmentary or altered presentation of the theme, and exposition of important countermelodies.

(11) **Programmatic quotation,** fulfilling an extramusical program or illustrating part of a text

(12) **Collage,** in which a swirl of quoted and paraphrased tunes is added to a musical structure based on modeling, paraphrase, cumulative setting, or a narrative program.

(13) **Patchwork,** in which fragments of two or more tunes are stitched together, sometimes elided through paraphrase and sometimes linked by Ives's own interpolations

(14) **Extended Paraphrase,** in which the melody for an entire work or section is paraphrased from an existing tune.

APPENDIX 3.
DJ Overdub's "Five Step" with Radiohead and Dave Brubeck Samples
From Cushing, "Three Solitudes," 181.

Song Section	Timing	Description
Drum Intro	0:00-0:10	Brubeck's drums augment original "drum and bass" style intro
Chorus	0:11-0:41	Yorke starts singing
	0:22-0:40	Piano part starts
Space between choruses	0:41-0:53	Saxophone part starts. Piano drops out. Guitar part from original track starts
Verse 1	0:53-1:13	Only drums stay through this section
Verse 2	1:14-1:45	Saxophone part starts with more active rhythm. It counterpoints Yorke's slow, sustained notes
	1:40	Saxophone part drops out
Space between verses	1:45 1:59	Piano part starts. Accompanies Yorke's reverbed "Ooh"
Verse 3	1:59-2:23	Saxophone part starts. Counterpoints Yorke's faster vocal rhythm
	2:22	Saxophone and drum parts drop out. Original instrumental texture thickens.
Space between verse and chorus	2:23-3:09	Original instrumentation
	2:30-2:38	Instrumental texture in original work thins. Guitar part drops out, original drum part thins
	2:38-3:08	Instrumental texture thickens again. Guitar part starts again. Saxophone part enters with fast rhythm relative to slow rhythm of synth pads
Chorus	3:09-3:57	Saxophone part drops out as vocal starts. Original instrumental texture is more dense. Work modulates and is incompatible with Brubeck's work. Ends at 3:57.

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