

David Lang and the Compositional Glitch: A Case Study of
Cheating, Lying, Stealing (1993, rev. 1995)

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Abstract

In recent decades, several musical movements have arisen in the wake of American minimalism, including postminimalism and totalism. These new movements adapt various techniques or stylistic choices of the American minimalists with new methods of compositional development. *Cheating, Lying, Stealing* (1993) by David Lang could be classified most accurately as a totalist piece, but there are techniques or characteristics from all three aforementioned movements. Through analysis of the three major sections of the work, I argue that Lang adopts several important features of American minimalism in postminimalist or totalist style (most importantly the use of musical process), but develops his own unique musical language through the use of *structural* and *non-structural* “glitches”, which are central to how *Cheating, Lying, Stealing* is developed into a cohesive and immensely rewarding piece of music and qualitatively differentiates his music from that of his musical predecessors. As of this writing, there is hardly any literature dedicated to the study of Lang’s compositional methods, and this work aims to begin the scholarly discussion of how Lang uses musical process and glitches in the wake of American minimalism.

Background

In Steve Reich’s famous 1968 essay “Music as a Gradual Process”, he writes “...I am interested in perceptible processes. I want to be able to hear the process happening throughout the sounding music....Performing and listening to a gradual musical process resembles...placing your feet in the sand by the ocean's edge and watching, feeling, and listening to the waves gradually bury them.” He adds, “Though I may have the pleasure of discovering musical processes and composing the musical material to run through them, once the process is set up and loaded it runs by itself” (Reich, 1968).

It is difficult to precisely define what musical characteristics precisely define the practice of the so-called American minimalist composers, of which Reich was arguably the most famous (except for perhaps Phillip Glass); but according to prominent composer and author Kyle Gann, Reich seems to allude to it in his 1968 essay. In an article entitled “Minimal Music, Maximal Impact”, Gann creates a catalog of musical characteristics commonly associated with American minimal music, in an attempt to discern which are the most definitive of the style. Although there are several characteristics that are somewhat stereotypically associated with minimal music, such as repetition, static harmony, linear transformation, and additive processes, Gann claims that for him, the most important characteristic is audible structure: “...their structure was right on the surface, that you could tell just from listening, often just from the first audition, what the overall process was. It seemed to me that part of minimalism’s early mystique was to have no secrets, to hold the music’s structure right in the audience’s face, and have that be listened to” (Gann, 2001). Thinking back to Reich’s essay, the two seem to be in agreement.

For an entire generation of composers, minimalism had a powerful impact. In the late 1960s/early 1970s, when universities were preoccupied with the study of post-World War II avante-garde music (namely serialism), minimalism seemed to offer hope to a generation of composers who wished to write music that was sophisticated enough for academia, but could still be enjoyable for non-specialist audiences. The works of Terry Riley, Steve Reich, and Phillip Glass and others opened the door for a generation of young composers to write “art music” that would not live and die inside the walls of academia.

Around 1980, this new generation of composers gave birth to postminimalism. As the name implies, postminimalism maintained some characteristics of its predecessor, and did away (or at least modified) others. As Gann writes, “Postminimalist music tends to be tonal, mostly

consonant...and based on a steady pulse...Their preferred medium is often the mixed chamber ensemble pioneered by Glass and Reich, though without the minimalist habit of ensemble unison. Postminimalist composers tend to work in shorter forms than the minimalists, 15 minutes rather than 75 or 120, and with more frequent textural variety.” (Gann, 2001). Additionally, where minimalist composers (like Reich) in some ways sought to remove their presence from their music by setting up a process and let it simply continue to its logical conclusion, postminimalist composers discovered they could combine characteristics of minimalism with other more individualizing musical ideas. In other words, postminimalist composers wanted to create their own musical syntax to insure their music had all the cohesiveness of a minimalist piece without the rigid and unbending use of process. In a sense, they reasserted the presence of the composer in a type of music that had many of the surface characteristics of minimalism.

Finally, a third wave of composers who “...admired minimalism’s clarity and accessibility... saw no reason to limit themselves to pretty harmonies and diatonic scales as the postminimalists had done,” gave birth to a musical movement called totalism (Gann, 2001). These composers were heavily influenced by rock music, and the rhythmic complexities they found in other kinds of music besides Western-European classical music. An important point about the kinds of rhythmic complexity found in totalist music, is that they are related to an audible beat, as opposed to the intangible rhythmic complexities found in serialist music of the time. Gann summarizes the totalist style as “ a style of great beat-related rhythmic complexity in a kind of harmonically limited, postminimalist context” (2001).

For me, it is important to briefly describe the characteristics of minimalism, postminimalism, and totalism in order to establish some context for *Cheating, Lying, Stealing*, which in many ways fits Gann’s description of totalism. In an interview with *The Guardian*,

when asked what the best new piece written in the last 50 years was, Lang replied: “...For me it has to be either Glass’s *Einstein on the Beach* or Reich’s *Music for 18 Musicians*. I can’t pick” (Guardian, 2016). However, although the minimalists had a prominent influence on Lang, as well as his Bang on a Can co-founders Michael Gordon and Julia Wolfe, he approaches musical processes very differently than Reich or Glass. In an interview with Andrew Bliss, he says “ I think one of the interesting things about working with patterns is there’s a way in which they’re sort of universal. You start them up and they run themselves. If that’s all you’re doing, where is the authenticity? Where am I in that process?” (Bliss, 2008). Although Lang seems to revere Reich to some extent, here his comments are in direct opposition to Reich’s thoughts in *Music as Gradual Process*. He acknowledges the influence the minimalist composers have had on him, but in his own music, challenges the very principles of the minimalist style.

Cheating, Lying, Stealing - Introduction

Cheating, Lying, Stealing was written in 1993, and revised two years later for the Bang on a Can All-Stars with the instrumentation of a bass clarinet, cello, piano, percussion (marimba, rock bass drum w/foot pedal, anvil or “other nasty metal”, 2 tom toms, snare drum), and 2 brake drum players (doubling on triangle) situated antiphonally on the stage, on either side of the ensemble. The unique instrumentation alone is revealing of Lang’s influences: the “mixed chamber ensemble pioneered by Glass and Reich” speaks to the influence of the minimalists, while the rock bass drum, brake drums, and anvil (or other nasty metal) provide a bravado more common in rock music than in classical music (Gann, 2001).

As Lang implied in his interview with Andrew Bliss, his music often features patterns or processes that are subjected to interference by the composer. In the same interview, Lang and Bliss broadly use the term “glitch” to refer to these moments of interference; “...I think the

music is where the glitches are. It's how the things don't work; it's how the math almost works....In *Cheating, Lying, Stealing*, there are several different ways that I try this....The beginning is of course this expansion pattern that at one moment, I just decide, I don't like the rhythm in that measure...I'm skipping it. The last section, the big $5/8$ section, it's two mathematical patterns...in collision with each other....it's not about math and purity. It's about how I've used these patterns like a demolition derby or something, and that's where the music is" (Bliss, 2006). *Cheating, Lying, Stealing* is an abundant repository of these "glitches" introduced by the composer and can serve as a powerful gateway to determining how Lang uses musical processes and glitches in comparison to his minimalist predecessors who depended strictly on the mechanisms of the musical processes they set in motion.

Although Lang freely discloses how some of the processes in *Cheating, Lying, Stealing* are designed, and what some of the glitches in those processes are, there are many more processes and glitches in the music that are not only interesting in and of themselves, but have ramifications for the formal boundaries and structure of the entire piece. Of particular interest to the author is how the musical processes used by Lang are related to each other, and how they form a cohesive and satisfying musical composition. This is an essential part of what ties Lang to the minimalist composers, and yet also illustrates how he has expanded on their practice.

Analysis – Section I

An in-depth examination of the "expansion process" that Lang mentions at the beginning of *Cheating, Lying, Stealing* will demonstrate how the composer manipulates musical processes in this piece. After a short two measure introduction, the first major section begins as notated below. This set of three eighth-note pairings re-enters periodically at every other measure, and forms the basis of the process that will govern the structure of the entire first section. For clarity,

all examples used in this paper are rhythmic reductions of the *notated* score, but it is important to note that listener *perception* may not (and often does not) relate directly to the notated rhythm.

The reason for this ambiguity will soon become clear.

Composite notated rhythm of bass clarinet, piano, marimba, bass drum, brake drums

Pair #: 1 2 3 1 2 3

Ex. 1 Original motive of three pairs of eighth-notes, followed by first eighth-note insertion

After the initial presentation of this motive, what Lang referred to as an “expansion process” begins. On the next entrance, the entire motive is augmented by the insertion of an eighth-note rest in the middle of the first pair of eighth notes. On successive entrances, the eighth-note rest is relocated to split up the second pair, and then the third pair (ex. 2). The constantly changing position of the eighth-note rest, combined with the strictly periodic entrances results in a fascinatingly complicated aural experience that Bliss refers to as “metric superimposition”: a device which “causes the listener to shift his perception of where the beat is located” (2001), although the *notated* rhythm may remain constant.

Once every possible iteration of the motive that contains one additional eighth-note rest is stated, Lang repeats the process with two eighth-note rests, resulting in a further expansion of the total motive length by another eighth note (ex. 2). Interestingly, the first iteration to include does not split up the 1st and 2nd pair as one might expect, but rather the 1st and 3rd pairs. Every element of this section is meticulously crafted to create a constantly uncertain metric framework for the listener.

Pair #: 1 2 3 1 2 3

Ex. 2, final iteration of one eighth-note rest insertion, followed by first iteration with two eighth-note rest insertions

Finally, after all three possible iterations using two eighth-note rests are stated, Lang presents the motive with a rest between all three pairs. Bliss has called the particular method by which Lang moves through the expansion process “permutated substitution”: “In this process, Lang slowly permutes a variable factor (y) through a number of cells filled with a constant factor (x), until the pattern slowly morphs from containing all of the constant (x) to all of the variable (y).” (Bliss, 2001). In our case, the variable factor would be the eighth-note rest (y), which is systematically permuted through each pair of eighth notes (x), until every pair of eighth notes includes the eighth-note rest insertion (ex. 3).

Variables:

(x, x, x) (y, x, x)

Composite notated rhythm of bass clarinet, piano, marimba, bass drum, brake drums

Pair #: 1 2 3 1 2 3

(x, y, x) (x, x, y)

(y, x, y) (y, y, x)

(x, y, y) (y, y, y)

Ex. 3, permutated substitution used to create “expansion” process.

Of course, this is the logical conclusion to the process that Robert Hubley calls the “rest-insertion process” (2015), but there is one essential modification at this point. Until now, the motive has consistently re-entered in every other measure, with a slightly diminished amount of silence between each statement as it expands. As this final iteration is presented, there is a *contraction* (after Lang’s use of the term expansion) “glitch”: no silence follows this statement of the motive, instead a measure of 3/8 leads immediately to an expanded version of the original motive, now containing four eighth-note pairs instead of 3 (ex. 4).



Ex. 4, All three eighth-note pairs with eighth-rest insertion, “contraction glitch” in measure of 3/8 leading directly to expanded version of original motive (four eighth-note pairs).

This contraction or “glitch” is critical to the structure of the entire piece. In fact it does not get resolved until the very end, almost nine minutes later. Therefore, this glitch will be referred to as a *structural* glitch, because it marks a formal boundary before the next augmentation/variation of the original motive, and because its’ presence has deep ramifications for the structure of the entire piece. Each of the three major sections of this piece contain their own processes that are subjected to their own *structural* and *non-structural* glitches, with this particular glitch being not only the first one to present itself, but also the only one to be “corrected” by the composer at the end of the piece.

Once the expanded version of the original motive (containing four pairs of eighth-notes) is presented, the “permutated substitution” process (Bliss, 2001) begins again. However, almost immediately there is a glitch. When there should be a rest separating the third pair of eighth-notes, Lang instead repeats the previous iteration, and then continues directly to the fourth pair

(ex. 5). In this case, the composer has already admitted the motive behind this decision: “...The beginning is of course this expansion pattern that at one moment, I just decide, I don’t like the rhythm in that measure...I’m skipping it.” (Bliss, 2001). This is an important distinction to be made between David Lang and the minimalists; Lang feels no need to restrict himself to the mechanisms of the processes he has set in motion, unlike Steve Reich. Because this “glitch” does not contain any further ramifications, but is simply an anomaly borne out of the composer’s dislike of a particular rhythm, it is referred to here as a *non-structural* glitch.

Pair #: 1 2 3 4 1 2 3 4 1 2 3 4

Ex. 5, eighth-rest insertion in 2nd pair repeating instead of presenting during 3rd pair, proceeding directly to eighth-rest insertion in 4th pair.

At this point, as one might expect, Lang continues the permuted substitution process with two pairs containing eighth-note rest insertions. Like the first time, he begins by having the first and last pairs split up, and systematically moves through every combination of two pairs having eighth-note rest insertions that includes the first pair (ex. 6).

Pair #: 1 2 3 4 1 2 3 4 1 2 3 4

Ex. 6, continuation of permuted substitution with four pairs of eighth-notes, using two eighth-note insertions.

However, at this point, the entire set of permuted substitutions *from the beginning* (ex. 3) interrupt the process. Only after the original set finishes, complete with the same contraction presented in ex. 4, does this new set continue moving through the possible combinations with

two eighth-note rest insertions that include the second pair, and then finally the only remaining combination of two eighth-note insertions: the third and fourth pair (ex. 7).

Pair #: 1 2 3 4 1 2 3 4 1 2 3 4

Ex. 7, conclusion of permuted substitution with two eighth-note rest insertions.

It's interesting to note that once multiple pairs are subjected to eighth-note rest insertions, Lang starts by using every combination that includes the first pair and the *last possible* pair and moves inward (ex. 6). However, once the process moves on to begin with the second pair (ex. 7), the additional pairs are the *first possible* and move outward. Again, unreliability is built in to the very system itself at multiple levels.

Finally, when all possible combinations with three eighth-note rest insertions and the concluding iteration with eighth-note rest insertions between all four pairs are presented (ex. 8), yet another contraction glitch leads us back to the original set of permuted substitutions from example 3. However, there is now the addition of an anvil note that always occurs at an

Pair #: 1 2 3 4 1 2 3 (anvil)

Ex. 8, conclusion of permuted substitution with four eighth-note pairs, contraction glitch in measure of 7/8, leading to original motive modified by addition of anvil.

unpredictable location somewhere between the entrances of the motive (ex. 8). Once the original set again reaches its logical conclusion (ex. 3, 4), the final iteration is followed immediately by an anvil hit, an *additional measure of silence* (the exact opposite of the contraction glitch that has now been presented thrice), and another anvil hit before the next round of permuted substitution begins. Critically, the listener never hears the original motive of three eighth-note pairs each with eighth-note rest insertion, *and* framed by silence until the very end of the piece,

reinforcing that this “problem” or glitch is essential to the structure of the piece. This is also the only glitch that is ever explicitly repeated, much less three times.

The image shows a musical staff in 4/4 time. Above the staff, the first three pairs of eighth notes are labeled '1', '2', and '3 (anvil)'. Each pair consists of two eighth notes with a quarter rest between them. The first pair is circled in red. The second pair is also circled in red. The third pair is circled in red. After the third pair, there is a whole rest. Above the staff, the word '(anvil)' is written above a quarter rest. This is followed by a new round of three eighth-note pairs, labeled '1', '2', and '3'. The first pair of this new round is circled in red.

Ex. 9, three eighth-note pairs each with eighth-note rest insertion, anvil hits and extra silence, new round of permutated substitution with final iteration of previous set as base.

This next set of permutated substitution adopts the *final iteration of the last set* (three eighth-note pairs each with eighth-note rest insertions) as the base for this new round and adds yet *another* eighth-note rest insertion (ex. 9). Again, Lang continues the expansion process in ways that violate the previously established logic by not simply adding another pair of eighth-notes as he did the first time, but choosing a new base motive that the listener has no reason to expect.

After this next set expands in exactly the same order as the first (ex. 3), there is a very short set of permutated substitutions where Lang surprisingly inserts an eighth-note rest *between* the pairs themselves (ex. 10). Of course, there are only two locations to add a rest in this procedure before the additional rest must be presented between all three pairs. He then

The image shows a musical staff in 4/4 time. Above the staff, the first three pairs of eighth notes are labeled '1', '2', and '3'. Each pair consists of two eighth notes with a quarter rest between them. The first pair is circled in red. The second pair is circled in red. The third pair is circled in red. After the third pair, there is a quarter rest. Above the staff, the word '1' is written above a quarter rest. This is followed by a new round of three eighth-note pairs, labeled '1', '2', and '3'. The first pair of this new round is circled in red.

Ex. 10, conclusion of 2nd eighth-note rest insertion inside each pair, beginning of eighth-note rest insertion between pairs.

adopts this final iteration of three eighth-note pairs, each separated by *two* eighth-note rests both internally and between each other, and begins to insert yet *another* eighth-note rest inside each pair, so, like the ancient ouroboros, the motive finally begins to eat itself as it surpasses the length of two full measures of 4/4 (ex. 11).

Pair #: 1 2 3* 1 2 3

Ex. 11, Final two iterations of the expansion process. In first iteration, 3rd pair is incomplete as the next iteration enters in measure 3 of example. In 2nd iteration, 3rd pair completes and expansion process “breaks”.

The first time the motive enters in this final round, the last note is simply not present, as if the system is attempting to maintain its integrity by starting the next iteration of the motive where it always has, but the second time the motive is complete and overlaps where the next iteration of the motive should have begun (ex. 11). This structural glitch represents the end of the expansion process (which cuts off at this midway point in the permuted substitution process), and the entire section, as frenetic and dissonant piano notes framed by percussion, marimba, and cello slowly evaporate into a brief moment of silence, before the second major section of the piece begins. This type of transition is typical of Lang, who often eschews the smooth transitions of Western classical music in favor of abrupt beginnings and endings.

Analysis – Section II

In this next major section, there are at least two processes occurring simultaneously. The one that might be perceived (although it would be difficult) takes place in the left hand of the piano. The pitch-collection in this section corresponds to a harmonic minor scale based on D, and the first five notes of the scale are presented as a cluster (D2-A2) in the left hand of the piano as short attacks at irregular intervals. The pattern is easy enough to discern with the score, although treacherously difficult to recognize aurally without it. The first two clusters are separated by 2 and ½ beats (5 eighth notes), and then a space of 3 beats (6 eighth-notes) follows.

Then again a space of 5 eighth-notes, 6 eighth-notes, and now 7 eighth-notes, 6 eighth-notes, and then 5 eighth-notes (example 12). This “pyramid” (5, **6**, 5, 6, 7, 6, 5, 6, 7, **8**, 7, 6, 5, etc.)

Piano L.H.

The image shows two staves of music in bass clef, 4/4 time. The first staff contains four clusters of notes, with intervals of 5, 6, 5, and 6 eighth notes between them. The second staff contains four clusters, with intervals of 7, 6, 5, and 6 eighth notes between them. The intervals are labeled with numbers above the staves.

Ex. 12, The beginning of the piano cluster “pyramid”, intervals between clusters labelled in number of eighth-notes, **bold** numbers representing new peak value.

continues to a peak interval of 12 eighth-notes, but, as the pyramid descends from 12, cuts off after a gap of 10 eighth-notes. In fact, the entire section abruptly comes to an end. Given the seemingly random nature of the break in this process, it is worth examining other musical elements to determine why this section ends when it does.

The right hand of the piano and the marimba create a hazy background for this entire section, with an unending stream of notes in varying subdivisions that often contrast with each other (triple over duple, quintuple over duple). Both the piano and marimba are each given a three-measure long rhythmic pattern, with a repeating pattern of pitches. In other words, they are *isorhythmic*: each part consists of a repeating rhythmic pattern (*talea*) and pitch pattern (*colore*).

Marimba

The image shows a single staff of music in treble clef, 4/4 time. It contains three measures of music. A bracket under the first two measures is labeled 'colore'. A bracket over the first two measures is labeled 'talea'. The notes in the first two measures are grouped with a '3' above them, indicating a triplet. The notes in the third measure are also grouped with a '3' above them, indicating a triplet.

Ex. 13, first three measures of marimba in second section, demonstrating isorhythmic concepts of *colore* and *talea*.

Examining the marimba line first, it is deducible that the *colore* (or pitch pattern) is 15 pitches long, and the *talea* (or rhythmic pattern) consists of the 25 rhythmic values that make up the first three measures (ex. 13). Therefore, the next time that the patterns would re-align would be the 6th iteration of the *colore* and the 3rd iteration of the *talea* ($6 \cdot 15 = 75$, $3 \cdot 25 = 75$).

However, during the 3rd iteration of the *talea*, Lang adds a single instance of the next lowest pitch of the scale (A3) to the *colore*, preventing the two patterns from re-aligning, and shifting the beginning of each subsequent *colore* back by one eighth-note, in a process here called *additive isorhythm* (ex. 14).

Marimba

talea

colore (last pitch in subsequent measure not shown)

Ex. 14, *additive isorhythm*: A3 added between 5th and 6th pitches of original *colore* (Bb3 and D4, respectively) in marimba.

During the 6th iteration, G3 (the next lowest pitch in the scale) is added right after the previously added A3 (ex. 15). After this, however, F3 is not the next pitch to be added as one might expect.

Marimba

talea

colore

Ex. 15, *continuation of additive isorhythm in marimba with addition of pitch G3, directly after previously added pitch A3.*

Instead, another instance of A3 is added, and then E3 is introduced, skipping over F3. Only after another addition of an A3 does the F3 finally arrive, and the section abruptly stops just a few measures later after this *structural glitch* is resolved (ex. 16). There is also one *non-structural glitch* in this section. In measure 156, there is an extra repetition of D4 that does not occur anywhere else in the section and does not appear to have any structural bearing on the section as a whole.

Ex. 16, the “skipped over” F3 is the last pitch introduced in the additive isorhythmic process, and done so just before the section comes to an abrupt end.

Although the right hand of the piano has a slightly longer *talea* (26 rhythmic values) with different rhythmic subdivisions than the marimba, the *colore* is the same as the marimba’s, diatonically transposed up a fourth (ex. 17). The addition of pitches to the piano’s *colore* is

Ex. 17, initial isorhythm in right hand of the piano.

handled essentially just as it is in the marimba part. First, the next lowest adjacent pitch (D4) is introduced (ex. 18) and then the next lowest (C#4) as well (ex. 19). Again, here we would next expect Bb3, proceeding down the D-minor harmonic scale, and again expectations are thwarted. First, another instance of D4 is added, A3 is added (skipping over Bb3), and Bb3 is only added

Ex. 18, additive isorhythm beginning in right hand of piano, with D3 being the first pitch added between 5th and 6th pitches of original colore.

Ex. 19, continuation of additive isorhythm, C#3 added next to previously added D3.

just a few measures before the end of the section.

There are also a few isolated glitches in the right hand of the piano part that the author deems to be *non-structural*, although the term does not comment on the interest of the glitches themselves. Just as in m. 156 of the marimba part, there is an isolated instance in mm. 141-142 when there are three consecutive instances of G4 that do not appear anywhere else in the section. There is another such glitch in the piano part that does not seem to have a corollary in the marimba. In m. 151, Lang adds another instance of D4 to the *colore* but omits the following pitch (G4), moving directly to A4 and the start of the next *colore* (ex. 20). However, the G4 is restored just two measures later and is present through the rest of the section.



Ex. 20, another addition of D4, isolated instance where G4 is omitted, moving directly to A4.

Another noteworthy observation about this use of additive isorhythm in the piano and marimba is the effect that this process has on the beginnings of the pitch patterns in each instrument with relation to *each other*. Because the marimba's *talea* consists of slower rhythmic values than the piano (eighth-notes and triplets vs. eighth-notes and quintuplets), the location of the marimba's *colore* starts to slowly become displaced from that of the piano. At the beginning, they are of course simultaneous (ex. 21). Over time, the beginning of the marimba's *colore* is very gradually displaced by fractions of a beat from the *colore* in the piano (ex. 21). Right before the section ends, the marimba's *colore* has been pushed so far back that it is almost overlapping with the next entrance of the piano's *colore* (ex. 22); the ouroboros almost appears again. However, at a point where the composer seems to have determined that this displacement

process has too nearly reached its logical conclusion, the entire section abruptly ends. Whether this near overlap of *colores*, the resolution of the “missing pitch” in the additive isorhythmic process, or some other element not analyzed here, is the catalyzing event for the end of the section could be contested.

Piano R.H.

Marimba

Piano R.H.

Marimba

Ex. 21, beginning of marimba and piano R.H. isorhythms, displaying gradual displacement of marimba colore relative to piano colore, marked by asterisks.

Piano R.H.

Marimba

Piano R.H.

Marimba

Ex. 22, last four measures of section, extreme displacement of marimba colore almost overlapping with subsequent entrance of piano R.H. colore, before abrupt end of section.

After a short transitory section, the last major part of the piece begins with a pattern of four measures in $5/8$. Lang had this to say to Andrew Bliss about this last part:

“The last section, the big $5/8$ section, it’s two mathematical patterns...in collision with each other. So there’s a pattern for how the groupings inside the measures change, there’s a pattern for how the larger phrases change, there’s a pattern where a $3/8$ measure interrupts at progressively closer and closer intervals, so basically it’s not about math and purity...” (Bliss, 2008)

The grouping pattern Lang refers to is how the $5/8$ is subdivided in four-measure segments. Every four measures of this section is subdivided in palindromic fashion as such: $2+3$, $3+2$, $3+2$, $2+3$. Just like in the first major section of *Cheating, Lying, Stealing*, what looks simple on paper creates a startling sense of aural complexity and unreliability as the listener attempts to identify where the next beat will be. As Lang points out, there is a 2nd element (the $3/8$ measure) that interrupts this grouping pattern. The first interruption occurs after fifteen measures, and subsequent interruptions occur at progressively closer intervals (fourteen measures, thirteen measures, etc.). Eventually, the interruptions are happening so frequently that it becomes unclear which idea is interrupting the other, until the first $5/8$ idea has been completely subsumed by the $3/8$ idea, which gets stuck in a repetitive cycle before finally abruptly breaking in to the coda. The effect of the $3/8$ interruption is very similar to the critical contraction “glitch” from the beginning of the piece, and the way that this interruption is gradually introduced in this section can be considered a sort of development or link back to the original contraction “glitch”.

Lang reinforces this connection with the abrupt move to the coda. The coda is essentially a return to the beginning of the piece with one crucial modification. As the permuted substitution process presented in example 3 repeats itself exactly, there is no silence presented between any iteration: a hyper version of the original contraction glitch (ex. 23).

Composite notated rhythm of bass clarinet, piano, marimba, bass drum, brake drums

Ex. 23, original motive with permuted substitution process returns, presented with contractions between every iteration, before being presented again in original form.

After the entire set of three eighth-note pairs with eighth-rest insertions has been presented with the contraction glitch, Lang then removes it *entirely*, and the entire set is presented yet again at its most pristine: no contractions, no unpredictable anvil hits, just silence between each iteration. Once the process reaches its conclusion, and all three eighth-note pairs contain an eighth-note rest insertion, the piece simply ends. This most structural of glitches has finally been resolved.

Conclusion

Although there are several musical elements of *Cheating, Lying, Stealing* whose exploration is beyond the scope of this paper, it is the hope of the author that this writing will stimulate further discussion about how composers like David Lang have adapted the language and aesthetics of process-based music like minimalism or serialism in recent decades. *Cheating, Lying, Stealing* was written almost thirty years ago, and David Lang's style has certainly evolved greatly since 1993, so there remains much to explore in regards to how Lang and other composers of a similar aesthetic outlook (such as Julia Wolfe and Michael Gordon) utilize musical processes while introducing individuality into their work through such mechanisms as

the presentation of a “contraction glitch” that gets presented over and over again, developed, and finally resolved at the very end. It would be fruitful for future research to trace Lang’s development since 1993. What characteristics (if any) remain the same about his use of musical processes and glitches in more recent years? Do other works involve glitches that appear to have greater structural significance and others that are more isolated? What musical features (such as periodicity, abrupt transitions, etc.) tend to reoccur in his work? The answers to these questions might lead to a more general understanding of the composer’s style, and hence to a deeper understanding of how one of the most significant living composers today has adapted the music of his predecessors to create something new and exciting. One thing is certain though, we can definitely expect to find plenty of flaws/glitches in his music. As Lang says, “...I think the music is where the glitches are. It’s how the things don’t work; it’s how the math almost works. That’s where the music is I think” (Bliss, 2001).

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