

Our Current War with Ourselves

Dualities and Traditions in Brad Decker's
sudden death

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The idea of combining acoustic and electronic sounds in live art music may still feel like a relatively new idea to some audiences. Due to the fame of the so-called classics from the Classical and Romantic eras of music, art music is often most strongly associated with acoustic music. However, electronic music has been a part of the classical canon for around fifty years. There is a rich tradition in the world of electronic art music, and composers continue to draw on these traditions in pieces being composed today. One such piece is Brad Decker's *sudden death* (2017), composed for double bass and electronics. Throughout this paper I will place *sudden death* into a historical context by demonstrating how it fits into the traditions of electronic music, electro-acoustic music, and music for solo double bass.

sudden death is composed for solo double bass and live electronics. The live electronics are controlled by the bassist with a foot controller. This foot controller is controlling a patch in Max MSP. Max MSP is a computer program used to create complicated sequences of sounds in real time. It offers a great deal of flexibility to both the composer and the performer. There are three triggers that tell the program to do different things. One begins a continuous sound, one enables the live processing of the double bass, and one stops the sustained chords. The piece is set up as a series of sonic events that occur at indicated time stamps. These times are not strict, and the piece should feel relatively free.¹

These freer rhythms automatically distance *sudden death* from the earliest electronic pieces. That specific rhythms and timing are not given makes the piece slightly improvisatory. Improvisation adds a degree of indeterminacy. That is, no two performances will sound exactly the same. The earliest electronic pieces could have no such improvisatory elements because they

¹ Brad Decker, *sudden death*, (2018).

were composed using magnetic tape, a fixed medium. It is unlikely that a composer would have used any improvisation throughout the composition process either. The process of editing magnetic tape was so meticulous and time consuming that every sound had to be specific and deliberate.

There are other ways in which music with a human performer can differ from the earlier, fixed electronic pieces. Some of these include gestural nuance, physical limitations, and interpretation.² In regard to gestural nuance, a human performer can alter the music with different phrasing, rubato, differences in articulation, etc. While these things are possible with strictly electronic music, they are considerably more difficult to achieve. Because of this, composers would tend to avoid them in the earliest electronic pieces.

As such, *sudden death*, in its current version, differs from its earliest versions. According to the program notes, *sudden death* began as a piece for fixed media in 2011. While the fixed media version of *sudden death* is understandably similar to the version with live bass, there are obvious differences. The version for fixed media is more atmospheric and less pitch based. Texture and timbre are the driving elements behind the piece. The addition of the live double bass changes the overall feel of the piece. Perhaps most notably, the inclusion of specific pitches gives the piece a certain tone center.

Though there are differences between *sudden death* and the electronic music that came before it, there are also clear similarities. Mario Davidovsky famously combined electronic and acoustic sounds in his *Synchronisms* series, and was one of the first composers to do so successfully. However, we can trace the fusion of acoustic music and electronic ideas to solely

² Guy Garnett, "The Aesthetics of Interactive Computer Music," *Computer Music Journal* 25, no. 1 (2001): pp. 21-33.

orchestral music that was being composed at the same time as Davidovsky's *Synchronisms*, the first of which was composed in 1963. About a year before these pieces, in 1961, György Ligeti created his piece *Atmosphères* for orchestra. In the late 1950's, Ligeti moved to Cologne, Germany and spent time in WDR electronic studios.³ While there, Ligeti created three pieces of electronic music. Two of these pieces, *Glissandi* and *Artikulation*, are well known. The third piece, *Pièce électronique Nr. 3*, is less famous because it was never finished. This piece was originally titled *Atmosphères*,⁴ which is telling of the similar thought processes that went into composing each piece.

One of the most significant techniques in early electronic composition was additive synthesis. Additive synthesis is done by layering different sine tones on top of each other. Because sine tones are a pure sound in that they have no overtones, layering them at specific pitches and amplitudes allows a composer to simulate overtones in a harmonic spectrum, thus creating more complex sounds. This technique offered composers direct control over timbre in the same way that they had control over pitch and rhythm. Ligeti began to use this technique to focus on timbre as the sole compositional element in *Pièce électronique Nr. 3*. Though not a direct transcription for orchestra, *Atmosphères* employs this same compositional methodology. One of the biggest hurdles with creating these sounds in an orchestra is notation. While *Pièce électronique Nr. 3* was notated rather graphically, the orchestra needed standard notation.⁵

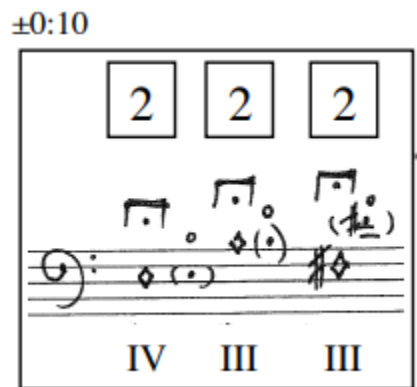
This focus on timbre is evident within the opening gestures of *sudden death*. The first entrance of the double bass has the performer playing sustained harmonics, as shown in Example

³ Sarah Davachi, "Aesthetic Appropriation of Electronic Sound Transformations in Ligeti's *Atmosphères*," *Musicological Explorations* 12 (2011) pp. 104-49.

⁴ Richard Toop, "György Ligeti," *Chamber Music* 17 (2000): p. 180.

⁵ Jennifer Iverson, "The Emergence of Timbre: Ligeti's Synthesis of Electronic and Acoustic Music in *Atmosphères*," *Twentieth-Century Music* 7, no. 1 (March 2010): 61-89.

1. These harmonics have the designation “2” above them, indicating that the performer should begin live processing on those notes.⁶ This “2” refers to one of the three types of electronic manipulation mentioned earlier. String harmonics are already complex sounds. The live processing picks apart the overtones of these harmonics and creates a new sustained sound with them. This sustained sound is very open and sounds a bit like an orchestra tuning. This sound is coupled with sounds that are more clearly electronic. These sounds are metallic and quickly moving, panning from the left speaker to the right, and vice versa.⁷



Example 1
Brad Decker, *sudden death*, opening gesture⁸

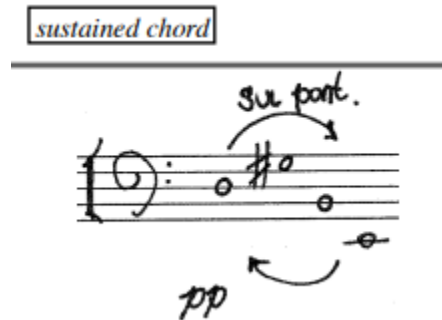
These sounds continue into the next gesture, a series of repeating pitches, one on each string. Rhythmic specificity is not indicated, and the pitches are to be repeated until the next gesture. See Example 2. The player is instructed to play these pitches *sul ponticello*, which means to bow the strings close to the bridge. This creates a brighter sound. Bowing closer to the bridge allows for more overtones to be present in the sound. Changing the audible overtones in a sound changes its timbre. These timbre changes are even more present in the lower string

⁶ Brad Decker, *sudden death*, (2018).

⁷ Brad Decker. *sudden death*, 2018, online.

⁸ Brad Decker, *sudden death*, (2018).

instruments. This is because the lower a pitch is, the more overtones it will have in the audible spectrum of human hearing.



Example 2
Brad Decker, *sudden death*, second gesture⁹

As timbre plays such an important role in this piece, I emailed Brad Decker to ask what role timbre played in *sudden death* from his point of view. In regards to timbre, Decker highlighted that:

Timbre was central to this piece, since I wanted to be extremely limited in pitch, and free with rhythm. The harmonic "chords" that become trapped and sustained were supposed to be one central timbre, while it is coupled with normally performed notes on the strings, arco. That duality was very important to me. Meanwhile, the background layer is a somewhat chaotic and more active, varied timbral layer, that I wanted to live in the background, and become a backdrop for the first two.¹⁰

Around the same time Ligeti was composing *Atmosphères*, Mario Davidovsky was experimenting with the electronic medium. From 1960 to 1963, Davidovsky was working at the

⁹ Brad Decker, *sudden death*, (2018).

¹⁰ Brad Decker. "Questions About Sudden Death," email message to Gregory Watson, November 3, 2019.

Columbia-Princeton Electronic Music Center.¹¹ Davidovsky's first venture into the electronic medium was his piece *Electronic Study No.1* composed in 1961. The following year, in 1962, he composed the first piece in his flagship series *Synchronisms*. These pieces combined solo acoustic instruments with a fixed tape part. Each piece focused on a different instrument and experimented with the timbres and colors of each instrument. The solo instrumental parts were virtuosic, and the electronics sought to blend with them to create a diverse palate of colors and harmonies.¹²

Decker cites Davidovsky as being influential in his writing, specifically when composing for electronics and acoustics together. "I often go to Davidovsky's *Synchronisms* for influence for pieces that involve live performance and "tape" or computer. His music is a great resource for me."¹³ Davidovsky's *Synchronisms* were not his first attempt at combining acoustic and electronic elements, however. In 1960 he composed his *Contrastes No.1* for orchestra and electronics. As the title suggests, *Contrastes No.1* exploits the differences between the tape part and the orchestra. While *Synchronisms* will often employ similar pitch material in both the solo and tape parts, *Contrastes No.1* makes little use of specific pitch material. Rather, the electronic sounds seem to suggest a certain register or band of frequencies.¹⁴ In this way, *sudden death* is more similar to *Contrastes No.1*. The fixed part of the electronic accompaniment makes little use of specific pitches and makes more liberal use of inharmonic frequencies.

Though I have discussed *Atmosphères* as being one of the earliest examples of the application of electronic techniques to acoustic music, we can find earlier examples of music that

¹¹ Robert J. Gluck, "The Columbia-Princeton Electronic Music Center: Educating International Composers." *Computer Music Journal* 31, no. 2 (2007): 20-38.

¹² Thorn Holmes, *Electronic and Experimental Music*, 2nd Ed. (New York: Routledge, 2002).

¹³ Brad Decker. "Questions About Sudden Death," email message to Gregory Watson, November 3, 2019.

¹⁴ Charles Wuorinen, "Mario Davidovsky: *Contrastes No. 1*." *Perspectives of New Music* 4, no. 2 (1966): 144-49.

combined acoustic and electronic elements. Edgard Varèse composed *Déserts* in the early 1950's, which is a piece for wind instruments, piano, percussion, and tape.¹⁵ Varèse had originally intended this piece to be a multimedia experience that involved even more than sound. This can be seen in a letter to Claude Varèse.

An actor whom you surely know named Burgess Meredith, even while continuing his starring career would also like to begin directing. He has just finished shooting a film in France: "l'Homme de la Tour Eiffel," which is due to be released in the fall. I tell you all this in order for you to place him. Well, Burgess Meredith and I are making a film together, "le Desert" (not documentary). New approach, that is to say light against sound, the images following or contradicting the score, something which has never yet been done. The music shall be written first, and I shall finally be able to afford acoustic studies and experiments for the 1st time in my life, so it's an opportunity. As the choice of subject was left up to me, I opted for the desert, which is the environment that I prefer and in which I feel in my element.¹⁶

Varèse has also stated that he was considering Walt Disney to create the film.¹⁷ At the time of its premier, however, *Déserts* had no visual elements. It was simply the ensemble and two loudspeakers, one on each side of the orchestra. The electronic elements were created by recording sounds from a factory and manipulating them.¹⁸ This creates sounds that are very different from the sounds of the ensemble, and the two sound worlds are easily differentiated. Not only are the electronic sounds and the ensemble sonically separate, but they are also

¹⁵ Several sources list the ensemble as an orchestra, though there are no string parts in the score.

¹⁶ Edgard Varese, "Collection Claude Varese," *Collection Claude Varese* (New York, NY, n.d.).

¹⁷ Edgard Varese, "Slonimsky Collection," *Slonimsky Collection* (New York, NY, n.d.).

¹⁸ Olivia Mattis, "Varèse's Multimedia Conception of "Déserts"." *The Musical Quarterly* 76, no. 4 (1992): 557-83.

separated temporally. *Déserts* is structured as a series of four movements (Varèse calls them episodes) that are separated by what Varèse calls interpolations of organized sound. These interpolations are where the electronic elements are in the foreground. The movements are primarily instrumental.

This separation of sounds is clearly present in *sudden death*. Decker says that the acoustic and electronic elements are composed as separate layers.

(The electronics and bass) are supposed to be independent layers, and so are therefore created independently, and have independent timbral concerns. (The) background layer uses an isometric pattern (two actually) that uses pretty standard and traditional synthesis. It is coupled with some experiments I did with an analog synth and max a few years ago (ARP 2600), and some samples I took. That layer is diverse, in terms of synthesis and technique. The patch, however, only traps audio, really, and is then just making a drone-like layer out of live performed bass harmonics.¹⁹

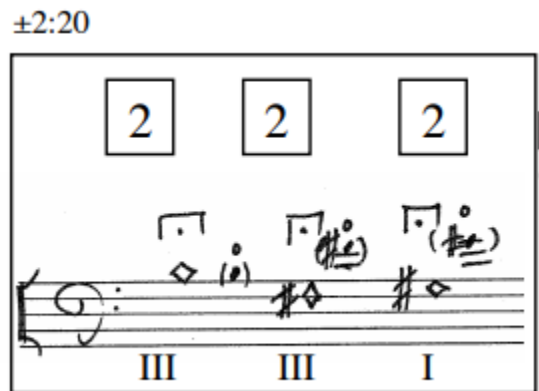
The synthesis of the harmonics on the bass creates an incredibly natural, and ghostly sound. Had those pitches been played ordinarily, the overall effect would have been much different. In that register, the sound would have been more strained and felt less natural. The harmonics also give a pale tone to the pitches. These pitches are processed and replicated by the live processing.

Also affecting the overall sound is the use of scordatura. Standard tuning for the double bass is E-A-D-G in ascending order. In *sudden death*, Decker calls for the performer to tune the

¹⁹ Brad Decker. "Questions About Sudden Death," email message to Gregory Watson, November 3, 2019.

strings up to E-B-G-D#. ²⁰ Tuning the strings higher and thus tightening the strings gives a brighter sound to the bass. Scordatura has been a common technique in double bass writing since the creation of the instrument. In the eighteenth century, orchestral bassists would often change the tuning of their instrument to fit the piece. It was common to alternate between G-D-A, A-D-G, G-D-G, and A-D-A. ²¹

Bertram Turetzky, in his book *The Contemporary Contrabass*, gives two reasons why a composer would use scordatura. The first, is to get an extended lower range by lowering the E string. The second, is to allow for different natural harmonics on open strings. This second example is the reason for scordatura in this piece. See Example 3.



Example 3

Brad Decker, *sudden death*, opening harmonics²²

These harmonics would be significantly more difficult with an E-A-D-G tuning, if not impossible. George Crumb uses scordatura for this purpose in his *Madrigals Book I*. Crumb

²⁰ Brad Decker, *sudden death*, (2018).

²¹ Bertram Turetzky, *The Contemporary Contrabass* (Berkeley: Univ. of California Press, 1974).

²² Brad Decker, *sudden death*, (2018).

tunes the fourth string down to Eb.²³ Not surprisingly, Decker has cited Crumb as a strong influence on his work. “However, for this piece, I took influence from the techniques and works of bassists Bertram Turetsky and Stefano Scodanibbio, and the multi-dimensional layering of George Crumb.”²⁴

The multi-dimensional layering in *sudden death* is achieved primarily using complex electronic sounds. When electronic sounds are paired with an acoustic performer, the issue of notation arises. There is no standardized method of notation for electronic sounds. Some composers use graphics to give a visual representation of the electronic sound. This can be seen in Example 4, an excerpt from Stockhausen’s *Kontakte*.

Example 4

Karlheinz Stockhausen, *Kontakte*, IC-IB²⁵

²³ George Crumb, *Madrigals Book I*. (Glendale, NY: Edison Peters, 1965).

²⁴ Brad Decker. "Questions About Sudden Death," email message to Gregory Watson, November 3, 2019.

²⁵ Karlheinz Stockhausen, *Kontakte* (Germany: Stockhausen-Verlag, 1958).

Other composers seek to approximate their electronic sounds to standard musical notation. This is particularly common if the electronic elements can be transcribed into specific pitches and rhythms. This can be seen in Example 5, an excerpt from Mario Davidovsky's *Synchronisms No. 10*.



Example 5

Mario Davidovsky, *Synchronisms no. 6*, m.102²⁶

Decker chooses a minimal approach to the notation of his electronic sounds. The only notation given is instruction on what the performer should press on the controller, when an event happens, and how long it lasts. These events are often labeled simply as “electronic event.”²⁷ Decker makes a distinction between an electronic event and a sustained chord. See Example 6. These sustained chords are created from the live processing of bass harmonics, and therefore have a more acoustic sound. The electronic events are more explicitly electronic.

²⁶ Mario Davidovsky, *Synchronisms no. 6*, (New York: C.F. Peters, 1970).

²⁷ Brad Decker, *sudden death*, (2018).

sustained chord	Electronic Event

Example 6

Brad Decker, *sudden death*, opening gesture²⁸

Decker draws influence not only from Crumb’s textures, Ligeti’s timbres, and Varèse’s electronic sounds, but also on earlier music. Decker cites Henry Purcell as a specific influence on *sudden death*.

The pitch material is derived from Henry Purcell’s “When I am Laid In Earth” aria from *Dido and Aeneas*, and is quasi-improvisational. The score suggests the plainchant style of delivery and should be performed in a pensive and reverent manner. The Purcell work is not only traditionally paired with Armistice Day (Veterans Day) in November, but it is also a fitting plea for those who suddenly and innocently perish in our current war with ourselves.²⁹

The improvisational nature of *sudden death* separates this piece from *Dido and Aeneas* aesthetically, but the pitch material is a fitting reference to the meaning of the text. This is further demonstrated by the way Decker treats these pitches. When Decker is not using open strings or natural harmonics, he puts the bass in its highest register. This creates a strained sound that is

²⁸ Brad Decker, *sudden death*, (2018).

²⁹ Brad Decker, *sudden death*, (2018).

very intentional. “The traditionally performed notes on the bass are acoustic elements, that are in the higher reaches of its range in an attempt to sound strained, anxious, sorrowful, etc.”³⁰ This strained, sorrowful sound is fitting with the text and mood of the Purcell aria.

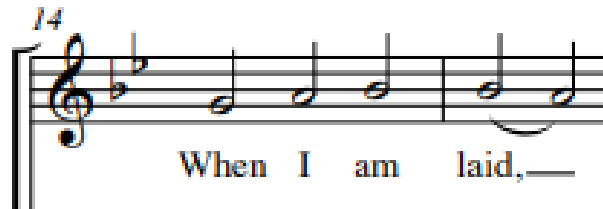
The pitch material, being derived from “When I am Laid in Earth”, emulates the melodic gestures found in the aria. As *sudden death* is quasi-improvisational, there are clear liberties that have been taken with these melodic gestures. The rhythms in *sudden death* are free and therefore do not follow the same rhythmic patterns as “When I am Laid in Earth”. However, the melodic contour and intervallic content remains similar enough for the reference to be clear. In regards to the pitch material, Decker highlights that:

I was bound by the harmonics I could produce, even with scordatura, so I took the original lament and transposed it to e minor. I then began improvising somewhat freely with this pitch material, and finally arrived at the fragments that are in the score. The open D string became a starting point for the initial phrases because of this process.³¹

The reason Decker was bound by the harmonics is that the harmonics are the pitches that are processed by the computer. The harmonics are processed to create a sustained chord over which Decker lays the melodic fragments. The first melodic fragment shows the same contour and intervallic content as mm.14-15 of “When I am Laid in Earth”. See Example 7 and Example 8. These measures are the beginning of the aria proper. The text over these measures is “When I am laid”.

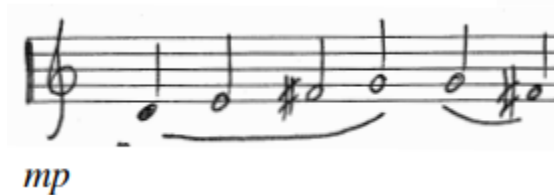
³⁰ Brad Decker. “Questions About Sudden Death,” email message to Gregory Watson, November 3, 2019.

³¹ Brad Decker. “sudden death,” email message to Gregory Watson, December 3, 2019.



Example 7

Henry Purcell, *Dido and Aeneas*, Act 3, 38³²



Example 8

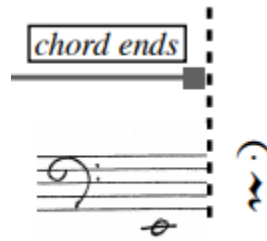
Brad Decker, *sudden death*, opening melodic gesture³³

This fragment in *sudden death* does not continue to the cadence of the phrase in “When I am Laid in Earth”. One primary reason for this could be the difference in mode. While “When I am Laid in Earth” generally stays within g harmonic minor, *sudden death* utilizes the aeolian mode of e natural minor. The phrase that is started in m.14 of “When I am Laid in Earth”, shown in Example 7, ends on a half cadence with the melodic line cadencing on F#, the leading tone in g minor. Not only does the aeolian mode lack this leading tone, but *sudden death* does not have the regular harmonic motion that is present in the Purcell. Therefore, Decker must achieve a feeling of cadence by different means.

³² Henry Purcell, *Dido and Aeneas*, (Montréal: Les Éditions Outremontaises, 2006).

³³ Brad Decker, *sudden death*, (2018).

Decker achieves this feeling of cadence with a change in register to the tonic. He uses the open low E string as a signifier of change. In regards to this low E, Decker has stated that “... I did end up using the low E as a pedal, a final resting place, lowest note, etc.”³⁴ This cadence is also marked by the removal of the sustained chord, which is followed by a brief rest. See Example 9.



Example 9

Brad Decker, *sudden death*, first cadence³⁵

Decker references other melodic lines in “When I am Laid in Earth” as well. The climax of *sudden death* references the climax to the Purcell. At its climax, the aria exclaims the words “Remember me!”. Both pieces create a feeling of tension by repeating the dominant in the melody. After multiple iterations of this repeated dominant, both pieces achieve climax by leaping from the dominant up to the tonic pitch. This tonic is the highest pitch in both pieces. See Example 10 and Example 11.

³⁴ Brad Decker. "Questions About Sudden Death," email message to Gregory Watson, November 3, 2019.

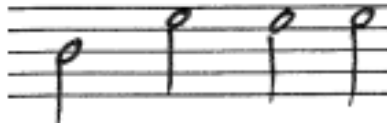
³⁵ Brad Decker, *sudden death*, (2018).



Re-mem-ber me!

Example 10

Henry Purcell, *Dido and Aeneas*, Act 3, 38³⁶



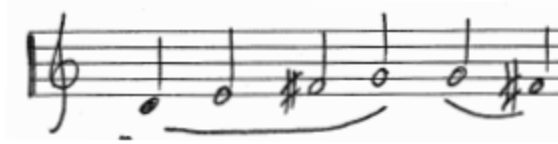
Example 11

Brad Decker, *sudden death*, climax, pg.2³⁷

Pitch material is not the only reference to early music. In the score, Decker mentions the plainchant style of delivery. This reference to plainchant comes through not only in the sound, but also in the notation. Decker gives no time signature and allows rhythms to be free, notating a series of pitches and only indicating that some should generally be held longer than others. See Example 12.

³⁶ Henry Purcell, *Dido and Aeneas*, (Montréal: Les Éditions Outremontaises, 2006).

³⁷ Brad Decker, *sudden death*, (2018).



Example 12

Brad Decker, *sudden death*, opening melodic gesture³⁸

Though it is not notated in the score, the pitches are also delivered without vibrato in the recording. While we do not know the performance practices of music before the invention of recording, Historically Informed Performance practitioners claim that early music and music of the baroque was sung without vibrato, and that vibrato did not come into standard use until later Classical and Romantic years.

The improvisational nature of *sudden death* may be separate from the strictly notated *Dido and Aeneas*, but that is not to say that earlier music had no relationship with improvisation. Improvisation had a role in notated music as early as the middle ages. This continued through to the age of jazz and early electronic music. Richard Dudas claims that the introduction of recorded music to mainstream audiences led to a brief separation from improvisation.³⁹ With recorded music, a desire to hear music in the same way every time it was performed was born. Elements of improvisation have been making a comeback within the world of art music with live processing. Every subtlety of the live performer is processed through the computer, and these subtleties produce different processed results.

Brad Decker's *sudden death* represents traditions in early music to the baroque period and traditions within Twentieth Century electronic music. This duality of traditions is mirrored

³⁸ Brad Decker, *sudden death*, (2018).

³⁹ Richard Dudas, "'Comprovisation': The Various Facets of Composed Improvisation within Interactive Performance Systems." *Leonardo Music Journal* 20 (2010): 29-31.

by other dualities within *sudden death*. These are dualities between the live performer and the computer, the fixed electronic part and the improvisational nature of the acoustic part, and the acoustic instrument with the electronic accompaniment. Each one of these elements both fits into traditions of music that came before them and expands upon them. Decker's *sudden death* honors the traditions of earlier composers in the same way that one may honor the dead. *sudden death* is filled with dualities, not the least of which is the duality between life and death.

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