

***The Three Needle Technique***

By

Greg Surges

A Proposal Submitted in  
Partial Fulfillment of the  
Requirements for the Degree of

Master of Music

in Composition

at

The University of Wisconsin - Milwaukee

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## Abstract

*The Three Needle Technique* is scored for a small chamber ensemble consisting of two pianists and two percussionists - one playing a snare-drum and hi-hat and the other playing a suspended cymbal and concert bass drum. Each performer is also asked to recite textual material throughout the work. The piece is composed for the group Yarn/Wire and will be premiered during a concert beginning at 7:30pm on April 14th, 2011 at Vogel Hall in Milwaukee, Wisconsin.

*The Three Needle Technique* represents a merging of multiple threads of my compositional interests - indeterminacy, complexity, and political ideology. The piece is a critique of the treatment of non-human animals in research settings, specifically the Primate Research Laboratory at the University of Wisconsin. The text is composed of fragments of leaked scientific documents describing procedures inflicted upon the primates.<sup>1</sup>

The various structural levels of the work contain different levels of performance indeterminacy.<sup>2</sup> In *The Three Needle Technique*, the order of moment-to-moment musical events is determined at the moment of performance, but the overall shape of the piece unfolds in a directed way.

The smallest musical units - phrases - are precomposed and highly specific. The materials were derived from a custom computer program, which used the text of the piece as input. A relationship was established between alphanumeric characters and musical pitches and rhythms (in the form of MIDI output). Carefully selected phrases of

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<sup>1</sup> "Madison's Hidden Monkeys," Alliance for Animals, accessed February 24, 2011, <http://www.madisonmonkeys.com/>.

<sup>2</sup> John Cage, *Silence*, (Middletown, Connecticut: Wesleyan University Press, 1961).

the computer output were freely modified or recomposed, while retaining the basic pitch and rhythmic structures.<sup>3</sup> This material is intended as a loving caricature of the “scientific” approach of post-war complexity.

My interest in politically informed music is in part inspired by my research into the composer Cornelius Cardew along with other radical political composers.<sup>4</sup> *The Three Needle Technique* expresses its political message through theatrical modifications of the sounding material. Beginning midway through the piece, the performers are asked to attempt to continue performing with primate puppets on their hands and within their instruments. As the work unfolds, the “research subjects” become a wrench in the gears of highly rationalized scientific experiment - the highly complex, formalized, “scientific” musical materials are subverted and destroyed by the absurdity, irrationality, and cruelty of animal experimentation.

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<sup>3</sup> Ross Feller, “E-sketches: Brian Ferneyhough’s use of computer-assisted compositional tools,” in *A Handbook to Twentieth-Century Musical Sketches*, ed. Patricia Hall and Friedemann Sallis, (Cambridge: Cambridge University Press, 2004): 176 - 188.

<sup>4</sup> John Tilbury, *Cornelius Cardew: A Life Unfinished*, (Essex: Copula, 2008).

## ***The Three Needle Technique***

*The Three Needle Technique* is a piece which stems from three areas which I have explored as a graduate student at UWM: structural indeterminacy; complexity and algorithmic composition; and politically-engaged music. The tension between these has been relatively unexplored, but has the potential to produce meaningful musical results. The piece is composed for Yarn/Wire, a chamber quartet consisting of two pianists and two percussionists. One percussionist is asked to play hi-hat and snare drum, while the other plays suspended cymbal and bass drum. All four performers are also asked to recite fragments of a text which is provided on the score.







### **Technique**

The various structural levels of the work (phrase, page, full work) contain different types and amounts of performance indeterminacy. The lowest level, the phrase, consists of traditionally notated material. The phrases are specific, detailed, challenging music with a complex surface. Phrases are generally a few beats long, and the material often undergoes some sort of process or variation. Here, a registral expansion occurs simultaneously with a crescendo.

The image displays a musical score for a piano piece. It consists of two staves: a treble clef staff on top and a bass clef staff on the bottom. The key signature is two sharps (F# and C#). The treble staff begins with a piano (*p*) dynamic and features a melodic line with a crescendo leading to a fortissimo (*f*) dynamic. The bass staff also begins with a piano (*p*) dynamic and includes a triplet of eighth notes. The overall structure shows a simultaneous increase in volume and range across both staves.

These phrases are not indeterminate in themselves, though they offer the performer traditional interpretive choices.

At the next higher structural level, that of a page or section, the connections between phrases are left partially up to the performers. Each performer has his or her own page with unique materials for each section. The phrases are arranged in a grid-like formation, each phrase filling one space. Some spaces contain text fragments instead of musical phrases. At the beginning of a section, the performers begin with the material in the upper left space. After playing or reciting the material contained therein, the performer is given the choice to “move” to any adjacent space and play that material. The pages contain black spaces which are not played, and serve to limit the number of adjacent spaces at a given point. This constrained choice gives the performers freedom, but also limits the possible formal outcomes. Using the following page as an example, after playing the material in the upper left corner, the pianist must recite “increase.” From there, he or she has two choices: 1) to repeat the original material in the upper left, or 2) to move to the space below and play that material. Materials can and should be repeated, but an individual box should not be repeated without another box in-between.

	<p style="text-align: center;"><b>INCREASE</b></p>	
		<p style="text-align: center;"><b>WE WILL</b></p>
		
	<p style="text-align: center;"><b>ANIMALS USED</b></p>	<p style="text-align: right;">4 - SLOW</p>

Each page is given a relative tempo: slow, medium, or fast - seen above in the lower right corner of the page. This indicates the pace at which performers should play the materials, without indicating a specific metronome marking. Rests between phrases are possible, but optional.

The order of pages is specified, as well as instrumental combinations during sections and subsections of the work. The piece consists of eight sections, three of which are subdivided in half. Each large section is one minute long, and the subdivisions are each 30 seconds. At the end of a section, when the specified duration has been reached, performers finish the phrases they are currently playing, and then move together as smoothly as possible to the next section. The effect is that of a slight

pause between sectional divisions. In the case of subdivided sections (2, 3, 6) there is no break between subdivisions. The second performer(s) enter just before the first performers complete their last phrase. The chart on the following page indicates the instrumental grouping, duration, relative tempo, and preparations (discussed below) for each section.

The indeterminacy of this piece is inspired by aspects of form in the work of the American experimentalists Christian Wolff and John Cage, as well as the German composer Karlheinz Stockhausen.<sup>5</sup> As a composer / performer and improviser, I also attempted to create a piece which relies on careful listening and group coordination. Finally, the indeterminacy of form combines with aspects of unpredictability introduced by preparations to contribute to the larger narrative of the work, as discussed in the final section of the paper.

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<sup>5</sup> Michael Nyman, *Experimental Music: Cage and Beyond*, (New York: Cambridge University Press, 1999): 58 - 62.

<b>Section / Page</b>	<b>Performers</b>	<b>Duration</b>	<b>Tempo</b>	<b>Preparation</b>
1	Ensemble	1'	Fast	None
2a	Piano A, Percussion A	30"	Slow	None
2b	Piano B, Percussion B	30"	Fast	None
3a	Piano B, Percussion A & B	30"	Medium	None
3b	Piano A	30"	Slow	Piano A
4	Ensemble	1'	Slow	Percussion A
5	Ensemble	1'	Medium	Percussion A, Piano A
6a	Percussion A & B	30"	Fast	Percussion A & B
6b	Piano A & B	30"	Fast	Piano A
7	Ensemble	1'	Medium	All
8	Ensemble	1'	Fast	All

The musical materials of *The Three Needle Technique* were derived from a custom computer program written in the Max/MSP programming environment using Karlheinz Essel's RTC-lib.<sup>6</sup> A relationship was established between alphanumeric characters and musical pitches and rhythms (in the form of MIDI output). Rather than sonification of a specific algorithm, the goal here was to create surface textures with complex rhythmic characteristics and pitch relationships - music that gives the illusion of extra-musical reference or objectivity, but is actually derived from an arbitrary process. Carefully selected phrases of the computer output (which suggested some musical potential) were freely modified and / or recomposed, while retaining the basic pitch and rhythmic structures. This was a multi-stage process, and material was often rewritten two or three times. The result is that all of the material is closely related back to the original algorithm, but musical intuition and taste were allowed to shape the individual phrases.<sup>7</sup> Each page is defined by a unique set of harmonic and rhythmic materials. The phrases on each page center around a limited set of pitches, and short rhythmic motives appear throughout. There is a common perception of post-war complexity being "scientific" in approach - Boulez's *Structures 1a* is described by Alex Ross as "objectified, mechanized savagery."<sup>8</sup> This material exploits that perception and functions as a symbol of rationality and uncaring scientific progress.

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<sup>6</sup> "Max - Cycling 74," Cycling 74, accessed March 2, 2011, <http://cycling74.com/products/maxmspjitter/>.

Karlheinz Essel, "RTC-lib - Real Time Composition Library for Max/MSP/Jitter and PD," Karlheinz Essel, accessed March 2, 2011, <http://www.essl.at/works/rtc.html>.

<sup>7</sup> Feller, "E-sketches."

<sup>8</sup> Alex Ross, *The Rest is Noise*, (New York: Picador, 2007), 396.

## Ideology

My interest in politically informed music is in part inspired by my research into the composer Cornelius Cardew along with readings of Theodor Adorno and Bertold Brecht. My research into Cardew focused on his move from serialism and complexity to experimental music and indeterminacy, and finally to a populist Romantic-tonal style. These changes paralleled his political evolution - initially politically uninterested but eventually part of the inner circle of the British Communist Party.<sup>9</sup> I was left with questions of effectiveness: Can a historical style (Romantic tonality) truly express revolutionary goals? Is immediately accessible music able to inspire deep reflection and change? I was impressed with Adorno's articulation of the need for difficult and fractured music which reflects the flaws and contradictions of society, and I was equally inspired by Brecht's concept of "epic theater."<sup>10</sup> In Brecht's mind, traditional theater is an intoxicant - telling the audience how to feel, without producing critical thought or lasting change. Brecht argued that by removing the illusions of theater - instead using techniques like narrative, montage, defiance of the 4th wall - the audience would be able to think critically about the issues presented.

*The Three Needle Technique* uses prepared instruments to disrupt the concert experience, and to raise questions about the subject matter being presented. Beginning at the middle of *The Three Needle Technique* (as indicated in the formal diagram above), performers begin to wear monkey puppets on their hands or place chains in and

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<sup>9</sup> Tilbury, *A Life Unfinished*, 977.

<sup>10</sup> Theodor Adorno, "Why is the New Art so Hard to Understand?" in *Essays on Music*, ed. Richard Leppert, (Berkeley: University of California Press, 2002), 130 - 131.

Bertolt Brecht, "Brecht on Epic Opera," in *Opera: A History in Documents*, ed. Piero Weiss, (New York: Oxford University Press, 2002), 288 - 297.

around their instruments to distort and subvert the preexisting musical materials. The two pianists each wear a puppet on both hands, while Percussionist A wraps a heavy chain around and between the cymbals of the hi-hat (drastically limiting the resonance and ability of the pedal to function) and coils another heavy chain on top of the snare drum head. Whenever possible, Percussionist A also uses a monkey stuffed animal or puppet to mute the hi-hat or snare drum during performance. Percussionist B uses a chain in a similar fashion - draped and wrapped around the cymbal, and coiled or hanging over the bass drum head. Percussionist B also uses a monkey stuffed animal or puppet when muting the cymbal or bass drum.

The use of the preparations (puppets and chains) will be visible and theatrical, and is not intended as a humorous effect. Performers are asked to avoid rehearsing with the preparations as much as possible, as they are intended to disrupt and subvert the pre-composed materials. During performance, a serious attempt is made to perform the notated materials despite the preparations - though this will necessarily be impossible.

The text fragments are to be delivered in a forceful but detached manner, reflecting the way painful and inhumane procedures are disguised using scientific language. The particular document used describes an “anterior chamber perfusion study” - in other words, the eyes of restrained primates are punctured with needles and the fluid is exchanged, then the animals are killed.<sup>11</sup> Some examples of text fragments include “most monkeys tolerate repeated perfusions without long term pain or discomfort,” “a group of 50 virgin eye monkeys is available,” and “the gun allows the

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<sup>11</sup> “Dr. Kaufman’s Approved Protocol,” Alliance for Animals, accessed March 2, 2011, <http://www.madisonmonkeys.com/protocols/106kaufman.pdf>.

needles to be quickly fired through the cornea.” By presenting materials taken directly from the primate researchers themselves, I hope to create a situation in which the audience is challenged to make up their own minds. The visual shock of the puppets combined with the clinical texts will take the audience “out of” the music, and force them to reconsider the meaning and value of the piece. The puppets also introduce a crucial flaw into the structure of the work. By disabling the performers and instruments, the “scientific” material is unable to function as intended. Eventually, the research is destroyed by the animals it uses as “tools.”

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