

**Nancarrow's Rhythmic Structures in Thomas  
*Adès' Asyla***

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## Curriculum Vitae

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## Introduction

Thomas Adès made this offhand comment to New Yorker music critic Alex Ross in 1998:

“Americans, I suppose, have the curious situation of having as their two greatest musical artists an insurance millionaire and a man who lived in a garage in Mexico<sup>1</sup>.”

Then only 27 years old, the mercurial Englishman was referring to Charles Ives and Conlon Nancarrow. The relationship of Adès’ music to both of these composers is very clear. All three, for instance, make reference to popular styles. The “insurance millionaire” juxtaposes quotidian American hymns and folk songs, while the “man who lived in a garage” incorporates jazz (and “*Tango?*”) into some of his work. Adès himself co-opts everything from Billie Holliday (*Life Story*, *Op. 8*) and 1930s dance bands (*Powder Her Face*, *Op. 14*) to modern-day house techno (*Asyla*, *Op. 17*). More important, however, is that Ives and Nancarrow are both revolutionary in their treatment of tempo, meter and rhythm. Nearly every work by Adès contains temporal ambiguities, be they horizontal irregularities or vertical juxtapositions of different tempi or meters. It is therefore clear that these two composers loom large in Adès’ output. The saxophones in the overture to *Powder Her Face* imply an entirely different meter than the fragments of a tango or habañera that accompany them, while the militant choir in *A Prophecy* joins an increasingly chaotic network of brass fanfares that briefly obliterate any semblance of a 3/4 time signature.

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<sup>1</sup> Ross, Alex. “Roll over Beethoven: Thomas Adès” *The New Yorker*, 2 November 1998.

That Adès declares these two composers America’s “greatest musical artists” is clearly no accident. An examination of the methods of either of these composers could therefore inform an analysis of Adès’ work. While Ives pioneered some of the above innovations in works from *Central Park in the Dark* to his *Symphony No. 4*<sup>2</sup>, Nancarrow took them to a particular apotheosis decades later in his *Studies for Player Piano*. I will therefore focus this paper on how Nancarrow’s work relates to that of Thomas Adès. Specifically, I will put forth Nancarrow’s *Study No. 36 (Canon – 17/18/19/20)* as an example and relate it to Adès’ orchestral work *Asyla*. First, however, I will provide some brief historical background for these innovations in rhythm.

### **Multiple Simultaneous Tempi: An Overview**

Henry Cowell’s *New Musical Resources*, first published in 1930, provides a summary of rhythmic innovation that predates its publication. Cowell stipulates that the desire to undermine the prevailing meter extends back to Beethoven’s “famous sforzandos on weak beats<sup>3</sup>”, and that jazz “represents another unconscious reaction against too regular meter<sup>4</sup>.” In addition, nearly all of Ives’ output predates the publication of Cowell’s book. But Cowell also puts forth ideas that have important implications for the work of future composers. Although Cowell focuses much of his discussion on the use of polyrhythms based on the harmonic series and divisions of the measure by odd numbers, his most important idea is the following:

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<sup>2</sup> Elliott Carter details some of the complicated temporal structures in Ives’ *Symphony No. 4* in his 1955 essay “The Rhythmic Basis of American Music”.

<sup>3</sup> Cowell, Henry. *New Musical Resources*. New York: Cambridge University Press, 1996. 70

<sup>4</sup> *Ibid*, 70.

What is required to recreate interest in metre [sic] is not to do away with so powerful a musical element, nor to keep the bar lines always the same and then negate them by accents; because accents within the measure are never to be felt the same as the first beats in the metre. Neither is it necessary to make metre a sort of skeleton-in-the-closet, as though it were an evil thing, essential to preserve, but so unlovely that it must be covered by almost any accenting of phrase which will disguise the metrical foundation<sup>5</sup>.

Cowell therefore does not advocate obliteration of meter. He instead stipulates the following:

It is possible to make metrical change in one part while another is being made in another part, the two metres [sic] having a certain degree of independence...Here we have the germ of two independent melodies running parallel to each other, yet not haphazard; in a word, counterpoint<sup>6</sup>.

Conlon Nancarrow, whose player piano studies from decades later can be described as such a form of metric counterpoint, was well aware of Cowell's treatise, having read it in 1939 as he prepared to depart for Mexico City<sup>7</sup>. Also pertinent to Nancarrow's work is the following:

In order to emphasize to the ear the relationship between parts, it is well for the accents of [two voices] to coincide with reasonable frequency except in instances where the relationship is clearly heard as a canon, in which the accents may never coincide<sup>8</sup>.

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<sup>5</sup> Ibid, 70-71

<sup>6</sup> Ibid, 71.

<sup>7</sup> Gann, Kyle, *The Music of Conlon Nancarrow*. New York: Cambridge University Press, 1995. 1-2

<sup>8</sup> Ibid, 72.

But Kyle Gann, in *The Music of Conlon Nancarrow*, properly draws a distinction between Cowell’s system and that of Nancarrow:

Cowell’s rhythmic system, especially in his *New Musical Resources* examples...had the limitation of its *periodicity*, the fact that after every few beats all voices re-convene in a simultaneous attack<sup>9</sup>.

It is true that Nancarrow does not employ the frequent or obvious intersections that Cowell discusses<sup>10</sup>. But Cowell’s ideas are certainly relevant to Nancarrow’s method for canons, and he rightly states that the listener, provided with the necessary cues, can perceive complex metric structures. Although each *Study* provides these cues in an essentially unique way, there are nonetheless some common characteristics worthy of general discussion.

### **Nancarrow’s Methods: A Summary**

In order to introduce and make complex structures intelligible, Nancarrow often presents a single element in isolation at the opening of a study. Canons with a relatively long duration between the entries of voices share with fugues an important property; the listener gets to hear the subject alone without interference from other voices so that its contribution to later, more complex contrapuntal textures will be more readily noticed. Nancarrow’s openings, particularly in the canonic studies, thus provide the listener with these necessary basic cues. As Nancarrow said in a 1977 interview with Charles Amirkhanian:

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<sup>9</sup> Gann, 8.

<sup>10</sup> This is likely a conscious decision; his mechanical medium renders periodic or frequent points of intersection unnecessary for ensemble purposes.

Well, as I’ve told you, I’m interested in this temporal thing...let’s say you have two tempi going at the same time – and if you have them both at the same, let’s say, melodic proportions, it’s easier to follow the temporal changes. So, in other words, let’s say one starts off this way, if it’s the same melody, you don’t have to follow the melody – you’re just hearing the temporal relationship<sup>11</sup>.

Nancarrow thus refers to his canonic studies, such as No. 36, which perhaps provide some of the clearest examples of this method.

### **Nancarrow’s Study No. 36 (Canon – 17/18/19/20)<sup>12</sup>**

*Study No. 36 (Canon – 17/18/19/20)* is a four-voice canon with the tempo relationship indicated. Nancarrow presents the four voices in “ascending” order of both tempo and pitch. Each voice presents the following portion of the canon prior to the entrance of the next voice<sup>13</sup>:

Ex. 1       $\alpha = 85$   
*ff sempre*

Voice 4

Nancarrow’s score is proportional; each 165 mm system represents three bars at whole note = 85 beats per minute, or approximately 2.118 seconds. Let us examine the distances

<sup>11</sup> Amirkhanian, Charles, “Interview with Composer Conlon Nancarrow”, *Selected Studies for Player Piano*, Peter Garland, ed. Berkeley: SOUNDINGS, Book 4, 1977. 13

<sup>12</sup> See Appendix 1 (page 36) for an excerpt of the score.

<sup>13</sup> All excerpts from Conlon Nancarrow’s *Studies* are © 1977 SOUNDINGS Press.

(bar line to bar line) between the sustained pitch at the end of the subject above and the entrance of the next voice:

**Table 1 (also see Appendix 1, page 37)**

<b>Between Voices</b>	<b>Tempo Ratio</b>	<b>Bar Width (Duration), Lower Voice</b>	<b>Distance to entrance of next voice</b>
4 to 3	17:18	55 mm	99 mm
3 to 2	18:19	52 mm	63 mm
2 to 1	19:20	49 mm	32 mm

From the information above it would seem that there is no exact relationship between the location of the canon entrances and the tempo relationships between voices. This undermines perceptibility of the tempo relationships themselves, but the listener nonetheless perceives that each entrance of the canon begins sooner and is marginally faster than the preceding. As the study continues, some elements of each voice diverge from the others, individualizing in musically interesting ways. This, of course, increases the complexity of the overall texture. While such development may partially obliterate the aural perceptibility of the multiple tempi, this is certainly not a lapse of compositional integrity<sup>14</sup>.

A closer examination of the score, however, reveals that the staggered entrances of the voices are, in fact, mathematically planned. Shortly after the entrance of the third voice, we discover a point at which the bar lines of all three voices intersect vertically. This suggests a series of hyper measures that can be divided according to the tempo relationships of each voice (17:18:19:20). The following shows the number of bars in each voice that precede the

<sup>14</sup> Even if there were no method behind this intensification, it would nonetheless represent a logical developmental extension of the process from which it originates.

first four global bar lines:

**Table 2 (also see Appendix 1, page 37)**

Voice	To First Hyper Bar	To Second Hyper Bar	To Third Hyper Bar:
1		13	20
2	4	19	19
3	15	18	18
4	27	17	17

The opening 10 bars are the voice 4 subject (see above), and we can consider these to be a separate introductory bar. In this way, the next hyper measure contains 17 voice 4 bars. To determine the entrances of the three remaining voices, Nancarrow must measure backwards from a hyper bar line and choose a measure in that voice’s tempo that begins just after the conclusion of the previous voice’s 10-bar subject. Nancarrow obviously chose starting points for each subject so that the listener could perceive the decreasing distance between entrances.

Nancarrow’s choice of starting points also concerns the subsequent vertical interactions between the voices, which are initially in strict canon. For instance, there are a myriad of important vertical interactions throughout the study; the most common of these are various superimpositions of the arpeggiated figures below<sup>15</sup>:

**Ex. 2a**



**Ex. 2b**



<sup>15</sup> Clefs are omitted for the sake of generality; these figures occur in numerous transpositions throughout the work.

What is rare, however, is absolute simultaneity, and this only occurs at certain hyper bar lines. Some gestures between these bar lines may sound coincident because our ears will accept some slight deviation<sup>16</sup>, but as Nancarrow's meticulous score reveals, they are not truly simultaneous. The first coincidence occurs at the hyper bar line on page 2, between voices 3 and 4. Such an alignment is certainly not accidental, and it thus demonstrates that Nancarrow has planned the placement of certain events within a particular voice so that they can temporarily intersect with other events in another. Nancarrow does not, however, punctuate every single hyper bar line with a prominent intersection of two or more voices. Some bar lines are nothing more than downbeats for a particular voice, and others seem mainly arbitrary, particularly in some of the extremely complex passages in the central section of the work. Furthermore, the breakneck speed of this study renders some of these interactions less audible because of their brevity. But the possibilities of musical connection that these hyper bar lines provide are nonetheless important to Nancarrow, and the functionality of the notated bar lines may not be lost on some listeners.

A more detailed analysis of Nancarrow's work is beyond the scope of this paper, but *Study No. 36* provides a fine example of how Nancarrow meticulously deploys separate voices in order to achieve the compelling temporal complexity so characteristic of his work.

Nancarrow's *Studies* generally do demonstrate that the aural perceptibility of complex mathematical relationships is extremely important, and that moments of methodological clarity make more dense and intricate textures all the more compelling. But do they also imply that precise tempo relationships such as 17:18:19:20 are only perceptible as marginal differences by most listeners, and therefore are not necessary for successful

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<sup>16</sup> Gann, 9.

composition? Can these rhythmic structures be inaccurate and still generate the same effect? Conventional wisdom says no, as some have tried to translate Nancarrow’s work into live performance with less-than-satisfactory results<sup>17</sup>. It is clear, therefore, that Nancarrow’s work would not have the same rhythmic character if its rhythms were given only approximately. Had Nancarrow composed *Study No. 36* in a less precise way, the result would be similar to performance by human performers: minute interactions could not be successfully managed, and the always audible tension between voices in conflicting tempi would be undermined by inaccuracy. Translating multiple simultaneous tempi into music for live performers is therefore an extremely tall order. Elliott Carter, for instance, wrote in his 1955 essay “The Rhythmic Basis of American Music” that the ideas Cowell lays out in *New Musical Resources* “have gained little currency because the great difficulties of performance that they involve have proved a real deterrent to a number of composers<sup>18...19</sup>” Is it possible to create a compelling music as rhythmically complex as Nancarrow’s that is playable? Moreover, can the limitations and abilities of live performers inform the creation of such a work?

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<sup>17</sup> Even when such attempts use ordinary player pianos, they are foiled by the hammers, which are without steel straps or thumbtacks. As Kyle Gann notes, the lack of these preparations turn Nancarrow’s more complex interactions into an uninteresting blur, and that the “comprehensibility” of many of the studies “depends on his altered piano hammers” (*The Music of Conlon Nancarrow*, 28). As for the translation of Nancarrow’s work into live performance, the London Sinfonietta has recorded an orchestral arrangement of *Study No. 7*. The tempo of this performance is approximately half that of the original player piano version. *Three Canons for Ursula*, one of Nancarrow’s few works for a live performer, employs the same canonic methods as the *Studies*, but on a far simpler scale.

<sup>18</sup> Carter, Elliott, “The Rhythmic Basis of American Music”, *The Writings of Elliott Carter*, Bloomington, IN: Indiana University Press, 1977. 165

<sup>19</sup> In 1955 Carter already was, of course, writing rhythmically innovative music and would in subsequent years create fascinatingly complex rhythmic structures, including multiple simultaneous tempi, in works such as his *String Quartet No. 2* and the *Double Concerto*.

## Introduction to *Asyla*

Thomas Adès’ *Asyla* represents one particular solution to this problem. *Asyla*, in four movements and approximately 23 minutes in length, is Adès’ third orchestral work. It was written for Simon Rattle and the City of Birmingham Symphony Orchestra and premiered in 1997, and won the Grawemeyer Award in 2000. It is an incredibly demanding work, not just for its instrumental requirements (which include a massive percussion section that includes kitchen utensils and two octaves of pitched cowbells, an upright piano tuned one quarter tone flat<sup>20</sup>, baritone oboe and contrabass clarinet) but also for its difficulty. *Asyla* challenges the ensemble skills of the world’s best orchestras and the registral bounds of nearly every instrument. Aside from its extremity, the listener initially perceives its highly distorted allusions to what sound like external styles. In the first movement, rehearsals E and N are some house-of-mirrors view of funk or big band jazz, while rehearsals G and H in the second movement refer to chromatic late Romanticism. The third movement, “Ecstasio”, alludes to contemporary techno idioms. But while these references are the most direct of the entire work, they are nonetheless distorted and kaleidoscopic. These distortions are accomplished mostly through rhythmic transformations, some of which I will examine below.

As with nearly all his works, Adès describes *Asyla* in terse, general and deliberately abstract terms. When asked about the second movement, Adès mentions the image of a cathedral<sup>21</sup>. He also points out the dual meaning of plural of “asylum”, a word that could mean either “refuge” or “madhouse” (or both). Cases can be made for both meanings of the title, and

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<sup>20</sup> This is, perhaps, a nod to Ives, who employs a quarter-tone piano in his *Symphony No. 4*.

<sup>21</sup> *Thomas Adès – Music for the 21<sup>st</sup> Century*. Gerald Fox, dir. DVD. Channel Four Television Corporation, 1999.

Adès’ use of Nancarrow-like metric conflicts certainly reinforces a surrealist interpretation of the work<sup>22</sup>. But Adès’ use of these techniques is by no means limited to *Asyla*; in fact, it is incredibly characteristic of his work as a whole. A more extensive discussion of the network of meanings in *Asyla* is not the concern of this paper. I am instead concerned with dissecting the rhythmic transformations and juxtapositions in the work, and investigating how Adès translates Nancarrow’s methods into a live medium.

### ***Asyla*’s Rhythmic Character**

*Asyla*’s rhythmic language makes the important distinction between syncopation and multiple meters. While the former refers to local deviations from a prevailing meter, the latter suggests one element adopting a temporal identity independent from another. In *Asyla*’s third movement (“Ecstasio”), the orchestra is temporarily divided into two groups. The conductor directs one part of the orchestra (high winds, high brass, piano and cowbells) in a highly irregular melodic figure, while the remainder of the ensemble follows a bass drum that hammers out the techno beat in constant 4/4 time (see appendix 2, page 41). The meters of the melodic element are as follows:

#### **Example 3**

<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>3</b>
<b>4</b>	<b>8</b>	<b>4</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>4</b>

But this passage is not a manifestation of Nancarrow’s multiple tempi. The melodic element of this passage is simply a consequence of the motivic development that precedes

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<sup>22</sup> This use of Nancarrow’s methods implies a departure from his aesthetic aims, which are primarily structural and constructive rather than expressive.

it. Interruptions of the prevailing quadruple meter (by 2/6, 1/6 and 3/8 bars) also inform this passage, which simply makes this melodic element too difficult to properly notate in 4/4 time. One need only examine Adès’ cue line, which notates the conductor’s beat pattern in 4/4, to see what this might look like (see appendix 2, page 41). The division of the ensemble is therefore a practical concern rather than a compositional one. Moreover, the listener probably does not perceive this melodic element as having its own meter. In fact, the constantly changing meter has its own syncopated structure. The opening two bars, for instance, could be parsed as written or as follows<sup>23</sup>:



In the face of all this irregularity, our ears defer to the bass drum’s overwhelmingly clear quadruple meter, thus defining the passage as syncopation against the bass drum pulse. But metric regularity can be used as an aural cue for multiple simultaneous tempi as well. The canon subject in Nancarrow’s *Study No. 36*, for instance, is a sequence of very regular beats that could imply quintuple meter (see example 1, page 5). Nancarrow, in fact, pokes fun at the simplicity of some of his melodic elements:

Also, I forgot who pointed this out to me – I don’t have much of a what-do-you-call-it, melodic imagination – so if it’s the same melody going it’s easier for me. I just have to do it once<sup>24</sup>!

<sup>23</sup> All excerpts from Thomas Adès’ *Asyla* are ©1999 Faber Music Ltd.

<sup>24</sup> Amirkhanian, 13.

This is, of course, an ironic remark, for Nancarrow’s simple melodic elements are both imaginative and essential to the success of his brand of rhythmic complexity. Kyle Gann also points out the necessity of regularity in Nancarrow:

...as irregularly as Nancarrow may *subdivide* his beats, the beats themselves remain more regular than any pianist would try to play them, and this is a central fact of Nancarrow’s tempo conception. Once one has committed himself to working with simultaneous tempos...any interpretive deviation from strictness is out of the question. The slightest *tenuto* or *rubato* in one voice has to be reflected in the others if the integrity of their relationships is to be maintained...<sup>25</sup>

Adès cannot expect the mechanical regularity of a player piano; nor can he precisely duplicate the minute inflections of one instrument in another. Metric regularity of individual voices, however, is what defines multiple simultaneous tempi.

This particular passage of *Asyla* thus illustrates the crucial difference between syncopation and multiple simultaneous tempi. Syncopation is defined by the tempo or meter from which it deviates; its essence is being “off the beat”. Multiple meters or tempi, conversely, juxtapose elements that have distinct and individually perceptible temporal identities.

From the very opening phrase it is clear that *Asyla* is generally based on audible conflicts between elements in distinctly different internal meters. Also very audible are the convergence and divergence of these elements. Syncopation, while present in passages like the one described above, is a secondary method in the work. Thus *Asyla* is generally very much in line with some of Nancarrow’s methods, and as I will demonstrate, it successfully

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<sup>25</sup> Gann, 9.

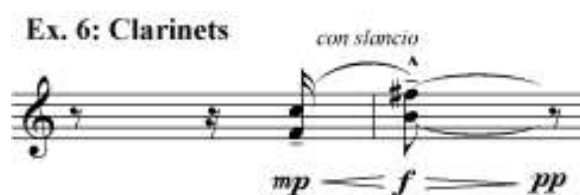
balances the application of these methods with the limitations of its live medium. I will limit my analysis to select portions of the first movement.

### ***Asyla*’s Opening: Horizontal Transformations within a Single Layer**

*Asyla* opens with a single layer “subject” in much the same manner as Nancarrow’s canonic studies. This presentation phase, however, contains many internal complexities that have important implications for the remainder of the movement. The passage spins outward from the ascending cowbell motive (bars 1 and 2):



This 4:3 transformation between sixteenths and triplet eighths above is a key component of both horizontal and vertical interactions throughout the movement. The clarinets, percussion, piano and cellos punctuate this two-bar phrase at bar 3:



Aside from minute expressive changes in the cowbell part (see ex. 5 above), bar 3 is equivalent to bar 2. The next iteration, however, is both truncated and overlapped. The peak of bar 3 appears as a grace note on the downbeat of bar 4, thus coinciding with the beginning of bar 4’s instance of the motive. The clarinet punctuation enters suddenly, only 4.5 beats after its previous instance, and it truncates the cowbell motive at only 1.5 beats.

This mid-bar punctuation conflicts with the meter implied by the 3/4 time signature, and it is not until bar 9 that the music realigns with the written downbeat. The next version of the phrase is 4.25 beats long, with the cowbell motive, here only 2 beats, beginning one eighth note after the clarinet punctuation. The next cowbell motive overlaps with the previous instance and is interrupted by the clarinet punctuation after only 1.5 beats.

After this sequence of increasingly complex iterations of this single phrase, Adès abruptly returns to its original version, not heard since bar 1. This instance, however, is extended by one beat, and after a further eighth-note extension in the cymbals, new material briefly appears. The cowbell motive appears in the timpani, but more important is the bass drum pulse that appears (bars 7-8):

Ex. 7: Percussion

The musical score for Percussion in 3/4 time consists of five staves. The first measure shows the Timpans staff with a dynamic of *f* and *ppp*. The Cowbells staff has a dynamic of *ff*. The Water Gong staff has a dynamic of *f contabile*. The Stm. cym. staff has a dynamic of *mf-f*. The Bass Drum staff has a dynamic of *pppp*. The second measure shows the Timpans staff with a dynamic of *pp*. The Cowbells staff has a dynamic of *pp*. The Water Gong staff has a dynamic of *f contabile*. The Stm. cym. staff has a dynamic of *mf-f*. The Bass Drum staff has a dynamic of *ppp*.

This eighth note pulse appears many times later in the movement, invariably conflicting with the metric implications of other instruments. Here it is clearly in duple time, with the peak of the hairpin implying a downbeat. The subsequent instance in bars 10 and 11 also

implies duple meter. In bars 12 and 13, however, the bass drum pulse implies a 3/8 meter, offset by a sixteenth:

Ex. 8: Percussion

The musical score for Ex. 8: Percussion consists of five staves. The first staff is for Tingoni, the second for Cowbells, the third for Bass Drum (on set), the fourth for Snare (on set), and the fifth for Water Gong. The score is in 4/4 time and is divided into two systems. The first system covers bars 8-11, and the second system covers bars 12-13. Dynamics include *ppp*, *pp*, *mf*, and *f*. The Water Gong part has a *f consistently* marking.

Earlier, at bar 8, we find that the phrase lengths of the cowbells have shrunk to single instances of the rising motive, and their durations are (beginning on beat 2 of bar 8) 2 beats, 2.25 beats and 1.5 beats (with the last instance beginning on the downbeat of bar 10, one full eighth note after the previous instance ends). The first clarinet punctuation coincides with the global downbeat of bar 9, and this alignment is no accident since it coincides with the resumption of the cowbell motive, and no downbeat punctuations have occurred since bar 3.

This opening passage, just 13 bars in length, serves as an example of the internal rhythmic complexity that pervades the entire work. The following summarizes the lengths of the ascending cowbell motive described above through rehearsal A:

**Table 3**

<b>Beginning Measure</b>	1	2	3	4	4	4	6
<b>Length in sixteenths</b>	12	12	12	6	8	7	16

Aside from noting the expansion and contraction of the motive length by common discrete metric units (the eighth and the sixteenth), we cannot precisely relate these transformations to one another as in Nancarrow’s work. It seems that there is no global temporal plan afoot, as there is in Nancarrow’s *Study No. 36*. If Adès is not composing systematically, then what governs the management of these rhythmic transformations?

### **Resetting the Process: Networks within Global Units from Rehearsals B through I**

In *Study No. 36*, Nancarrow managed his four-voice canon so as to create musically interesting points of unity. The four voices are fundamentally continuous; they are extended composed segments whose horizontal placement is determined by mathematical principles. The rhythmic design is not “broken” or “reset” for the sake of any vertical interaction. On the contrary, *Asyla* frequently resets itself, its motivic elements “coincid[ing] with reasonable frequency<sup>26</sup>” as Cowell suggests in *New Musical Resources*. *Asyla* can therefore be analyzed as a series of intuitive Nancarrow-like divergences from moments of convergence. As I will show, conflicting passages obscure or redefine the prevailing meter only temporarily, and moments of connection reappear before any temporal conflicts become uninteresting. Perhaps this frequent realignment of rhythm offers the best compositional solution, as it not only teases the listener with recognizable moments of temporal clarity, but also renders it easier to perform.

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<sup>26</sup> Cowell, 72.



I have notated the instances of sixteenths and eighth note triplets in the wind and string gestures on separate staves in order to present them as two simultaneous layers. Note that the first bar (14) of these gestures is presented in rhythmic unison. The layers are superimposed briefly on the first beat of bar 15 and with increasing frequency as the passage continues. Also note that the rhythm of the horn line conflicts with the wind and string gestures accompanying it. On the third beats of bars 14 through 16, the horn sixteenths are pitted against the string and wind triplets, while the situation is reversed on the third beat of bar 17.

The horn downbeats reunify with the 3/4 time signature at bar 18, and this coincides with the end of the phrase. The sixteenth-note layer of the string and wind gestures disappears for three beats as two new elements in conflicting meters appear (bars 18-20):

**Ex. 11**

The musical score for Ex. 11 is presented in 3/4 time. It features four staves: Horns, Winds/Strings, Bass Drum, and Clarinets/Strings. The Horns staff begins with a half note G4 and rests for the remainder of the phrase. The Winds/Strings staff shows a complex rhythmic pattern with eighth and sixteenth notes, marked *pp*. The Bass Drum staff features a steady eighth-note pulse, marked *pppp* and *pp*, with performance instructions '+ Fl. Trp., Tbn., Ch., Cl.' and '+ Trp. (top part)'. The Clarinets/Strings staff contains a dense sixteenth-note texture, marked *pp*, *mf*, and *f*. The score is divided into measures by vertical bar lines, with measure numbers 2, 3, 4, 3, and 8 indicated at the beginning of their respective staves.

I have chosen the above groupings based on hairpin peaks, written accents and other forms of punctuation. As shown, the bass drum pulse from earlier has returned, and as in the previous instance (bars 12 and 13), the pulse is offset by one sixteenth. This implies 3/4 (offset by a sixteenth) for the bass drum pulse, a sudden 2/4 parsing of the string and wind gestures from the previous passage, and 3/8 for the new thirty-second notes. This new element also has internal groupings that can be parsed as follows:

Ex. 12

Clarinet, Strings

3/8

*pp* *mf* *f* *mf*

Tutti (cresc.)

There is no clear articulation of these groupings other than through the pitch changes shown. The preponderance of the even bass drum pulse also prevents the listener from hearing this as a real shift to a dotted sixteenth pulse. This is therefore an internal syncopation in the same sense as the passage from the third movement described above<sup>27</sup>. Nancarrow's canons contain internal syncopations as well; one need only examine later portions of *Study No. 36* to see that this is the case. The internal syncopations in *Asyla*, therefore, do not conflict with the overarching principles derived from Nancarrow's work. As long as the *initial* portions of a given element have a metric definition and are not overwhelmed by another, clearer meter, any subsequent departures from this definition will not automatically negate the listener's perception of multiple meters.

The horn melody and string/wind gestures re-emerge in bar 20. This passage builds on its previous complexity (bars 20-25):

<sup>27</sup> Please see pages 11-12 and Appendix 2, page 41.

Ex. 13

Horns

Winds, Strings

Bass Drum

But this resumption of previous material is hardly a point of reunification. It overlaps with the ending of some previous elements, such as the bass drum pulse, and the horn entrance does nothing to resume any meter, global or local. Furthermore, the previous short-long pairing within the horn melody is now ambiguous. Are the short notes now the downbeats? Adès' use of tenuto markings seems to indicate otherwise, and we can therefore analyze the long notes as downbeats as before. The internal parsing of the horns is therefore as follows:

Ex. 14

Horns

In spite of this increased complexity, the emergence of a new string/wind gesture from a horn downbeat remains constant, even as the second horn line emerges, further complicating the texture with its own associated string/wind gesture. Concurrence follows at bar 25: the winds and strings grow out of the unified horns, and the triplets here are unadulterated by sixteenths. Other than the end of a cowbell grace note gesture, however, there is nothing marking the downbeat of the global 3/4 time signature here. Coherence is

therefore a relative term; certain points of intersection are defined by the complexity that surrounds them.

Adès has clearly woven together many elements with identifiable internal meters in these opening passages, and the effect thus far has been very similar to Nancarrow's work. Exact mathematical precision, however, is not present. The internal bar lengths of the horn melody from bars 14-23, for instance, vary in length as follows:

**Table 4**

<b>Beginning Measure</b>	14	15	15	16	20	21	22
<b>Bar Length in sixteenths</b>	12	11	11	14	11	10	9 <sup>28</sup>

There seems to be no particular logic behind these expansions and contractions. The passage, however, does not appear unnatural or haphazard. The same can be said for the subsequent passage (bars 25-27). Here Adès reprises two motives from bars 19 and 20: the clarinet/trumpet/string thirty-second notes and the bass drum/ trombone/ tuba/ contrabass clarinet offbeat pulse. Just as the horn melody and wind/string gestures increased in complexity upon their reprisal, so too do these motives. Let us first examine the internal content of the clarinet/trumpet/string motive. The rhythmic scheme of the first phrase (bar 19, but notated with internal time signatures) is as follows:

**Ex. 15**

Clarinet, Strings

Trumpets

*mf* *f* *p*

Cello pizz.

*mf*

The second phrase (bar 25) is slightly more complicated:

<sup>28</sup> This bar length refers to the upper horn part. See ex. 14.

Ex. 16

Clarinet  
Viola II

Trumpets

Trombones

Viola (div.)

Clarinet 2

Trumpets  
Bassoons

*pp*

Note that I have written the second bar of this example in 3/8 time rather than 12/32.

Although the clarinets and violas punctuate every three thirty-second notes, we do not perceive this as 12/32 for two reasons. First are the jarring offbeats in the trumpets on every third thirty-second note (shown by the arrows above). Second is the preponderance of the bass drum's eighth note pulse (see ex. 17 below). Although this pulse is offset by a sixteenth from the time signatures given above, our ears defer to its regularity, and the motive therefore implies syncopation against 3/8 rather than a 12/32 bar. In addition, the viola slurs correspond to the trombone punctuations on every third thirty-second note. Such reinforcement could turn these punctuations into competing downbeats, thus undermining the clarinet accents. The definition of the pulse as eighth notes, however, remains the same due to the bass drum.

The bass drum pulse itself shows a salient misalignment in its second instance (bars 26-27):

Ex. 17

Bass Trombone  
Cb. Clarinet/Tuba

Bass Drum

*pp*

*p*

*pp*

*pppp*

*pp*

*pppp*

(+Db. arco)

+ Double Bass pizz.

2  
4

The bass trombone, tuba, contrabass clarinet and basses punctuate the final beat of this pulse one sixteenth note later than the bass drum. This is clearly a break for the sake of future alignment, as this change results in the following simultaneity:

**Ex. 18**  
(see Ex. 16 for detail)

The musical score for Ex. 18 consists of three staves. The top staff is for Clarinets and Strings, showing a continuous eighth-note pulse. The middle staff is for Bass Trombone, Contrabass Clarinet, and Tuba, featuring a series of chords and single notes with dynamic markings *ppp*, *p*, and *pp*. The bottom staff is for Bass Drum, showing a complex rhythmic pattern with dynamic markings *ppp*, *pp*, and *pppp*. The score includes a section marked "Double Bass pizz." and a section marked "(+ Eb. arco) *ppp*".

Thus Adès subtly shifts the eighth note pulse to create a point of unity with the thirty-second note motive. This is another example of a reset point; Adès halts the escalation of complexity and begins the process of divergence anew. This convergence on the third beat of bar 27, however, occurs one sixteenth after the entrance of the first violins, which begin a new instance of the horn melody. The thirty-second notes continue in the clarinets, but they have lost their internal syncopation, instead reinforcing the eighth note pulse of the subsequent time signatures (bars 28-32):

**Ex. 19**

Winds  
Clarinet  
Flutes  
etc.

Violin I  
*mf dolciss., legato*

*cantabile*

*mf*

*mf poco cresc.*

(+ Piccolo)

Why has Adès changed time signatures? The first violins are not related to any sequence of 2/4 and 3/8, although they do align with the downbeat of bar 30. They approximate the structure of the previous instance in the horns<sup>29</sup>:

**Ex. 20**

Violin I

*mf dolciss., legato*

*poco a poco* - - - *cantabile*

sul II

10 9 9 13  
16 16

The new time signatures therefore reflect the structure of the thirty-second notes (see ex. 19). Such a realignment of the global beat structure is clearly meant to favor even division of an eighth note pulse by thirty-second notes. This provides an important precursor to rehearsal E, which follows a few bars later (bars 33-40):

<sup>29</sup> In bars 20-25, the horn downbeat-upbeat pairs are (in sixteenths) 10+1, 9+1, 8+1 etc. See Ex. 14, page 21.

Ex. 21

The musical score for Ex. 21 is arranged in six systems. The first system includes Double Bass (Bass), Trumpets, and Trombones. The second system includes Trombones, Trumpets, and Clarinet. The third system includes Keyboard. The fourth system includes Piano. The fifth system includes Violin I. The sixth system includes Strings. The score is written in 2/8 time and features a variety of rhythmic patterns, including syncopations and complex groupings. Dynamic markings range from *ppp* to *sf*. A section of the score is marked with a first ending bracket and a *rit.* marking.

The preceding examples suggest that Adès is attempting to increase the importance of a motive by shifting the written time signature. These represent not only the conductor's beat patterns, but the global counting patterns of each player in the orchestra as well. This gives the motive an increased degree of primacy, as we can classify it as being "on the beat". Such a change clearly serves the purpose of the transition here, as it prepares the greatest reinforcement of a global downbeat since rehearsal B. It is also the clearest presentation of any meter that has yet appeared, and furthermore, it is presented alone. The brass motives that appear are syncopations consistent with the jazz or funk idiom that this passage references.

Rehearsals B through E are a global unit, punctuated at beginning and end by the isolation of a single element that coincides with the downbeat of the written time signature. In addition, these elements initially reinforce the written time signature; the horn melody at rehearsal B initially implies 3/4, and rehearsal E is explicitly in 2/8. This global unit is a

network of internal displacements and realignments, as I have detailed above. While Adès applies Nancarrow's methods to the components of this network, he does so only on the local level. His segments are small and often break for the purposes of realignment. Furthermore, Adès' vertical misalignments have heretofore been by quotidian duple divisions of the measure (eighths, sixteenths and thirty-second notes). This does not, however, prevent him from creating increasingly complex networks of misaligned motives.

I will now turn my attention to rehearsal G, which shows a hierarchy of intersections similar to those presented between rehearsals B and E. The marker for a new global unit actually occurs on the last eighth note of the bar with the entrance of the piccolos, whose material is an extension of the syncopated trumpet motive first heard in bar 38. First, however, let us examine a subtle but important precursor to this material that occurs at rehearsal F (bars 41-43) in the hi-hat:

Ex. 22: Hi-hat

ppp pp

This rhythm implies the 4/8 grouping shown and provides the basis for the piccolo material several bars later. This 4/8 pulse is reinforced by the rototom, horns, bassoons and trumpet, all of whom reprise their material from rehearsal E. The piccolos, however, quickly complicate their pattern (bars 48-51):

**Ex. 23: Piccolos**

The rototom pulse remains constant, thus retaining the 4/8 definition of the meter. The piccolos are therefore defined as syncopations against this meter, and they retain this definition even as the 4/8 meter deteriorates. At rehearsal H, the rototom disappears briefly to clear the way for the solo cello. The pulse, however, continues uninterrupted in the much less perceptible oboes, bassoon and English horn. Further undermining the previous 4/8 pulse is the bass drum motive, whose “downbeat” coincides with the high G offbeat of the tuned bongo (bars 50-53):

**Ex. 24**

Also note the bass drum and double basses, all of which go against the 4/8 still implied by the double reeds. But this displacement of the downbeat has not yet interrupted the eighth note pulse. It remains constant and identifiable until bar 55, when the double reed downbeat suddenly occurs one sixteenth early. The rototom reenters here, clearly emphasizing this change. The bass drum and basses also switch to offbeat sixteenths and retain their alignment with the double reeds (bars 54-57):

Ex. 25

The musical score for Ex. 25 consists of five staves. The top staff is for Double Reeds, Horns, and Trumpets, showing a complex rhythmic pattern with dynamics ranging from *p* to *ppp*. The second staff is for Rototom, with dynamics *mp* and *pp*. The third staff is for Bass Drum, with dynamics *ppp* and *pp*. The fourth staff is for Solo Cello, with dynamics *ppp* and *mf*. The fifth staff is for Double Bass, with dynamics *pppp* and *p*. Above the first staff, the numbers 2, 3, and 4 are written above the first, second, and third measures respectively, with a '2' and '8' below the first measure.

All of these transformations between rehearsals G and I are roughly parallel to those of Nancarrow's work. Adès begins this passage with an identifiable 4/8 pulse and systematically transforms the elements that define this meter as described above. What Adès does not do, however, is undermine the local metric implications of each element. The piccolos, in spite of their increasingly complex additive groupings of thirty-second notes, are still perceptible as a set of syncopations, and the double reed/bass drum/rototom material retains the integrity of its pulse in spite of its sixteenth note shift.

Nancarrow is similarly incremental; an examination of *Study No. 36* shows gradual complications of the canon subject in each voice.

As in previous passages, Adès has carefully managed divergence from a clear initial meter. The consistent duple divisions of the measure clearly assist this process, but there is a further complication to this passage. The solo cello restates rehearsal B's horn melody at rehearsal H, emerging from the tuned bongo (see above). The cello not only employs triplet sixteenths (non-duple divisions of the bar have not appeared since rehearsal G), but also places the horn melody "downbeats" in the following places (bars 52-57):

Ex. 26

Solo Cello

*pp* *Aggioriss.* *cresc.* *mf*

aria, quasi senza vib., molto aggr.

Because Adès has begun to dissolve the implied 4/8 into a complex network of duple-based groupings, we can easily hear this cello line on a separate temporal plane. This different plane, however, serves to reintroduce triplets before they suddenly replace all duple divisions of the bar at rehearsal I. This could be a reset point due to this abrupt change, but it is actually no more than a metric shift in the manner of the previous adjustments that Adès has made. The double reed motive that has remained intact up to this point transfers to the horns at rehearsal I. In the process of this transfer it augments, replacing thirty-seconds with triplet sixteenths. I have parsed it below as 2/6, with eight triplet sixteenths to each bar (bars 60-63):

**Ex. 27**

Horns

Bass Drum  
Piano

For the sake of contrast, let us revisit example 22, the thirty-second-based version of the motive from rehearsal F (bars 41-43):

**Ex. 22: Hi-hat**

4  
8

*ppp*

*pp*

The initial version shows a consistent 3+2+3 division of each 2/8 segment. Adès varies this division in the triplet version, as example 27 shows above. But Adès retains the framework of a duple meter with the bass drum pulse, which punctuates every four triplet sixteenths (see ex. 27).

In addition, Adès has further mollified this motive by transferring it to the horns. This renders it in turn less prominent than the preceding double reed version. More important, however, is the introduction of a new element that is at best vaguely metric. The violin and trumpet line derived from rehearsal B's horn melody appears as follows (bars 60-63):

**Ex. 28**

Trumpets  
Violins

11  
20

12  
20

9  
20

*ppp*

*ppp moder. azpr.*

Adès has thus introduced quintuplet sixteenths<sup>30</sup> against triplet sixteenths, the latter of which have begun to lose their metric identity. Accents no longer emphasize the additive syncopations in the piccolos, and the new celesta line is similarly irregular (bars 60-63):

**Ex. 29**

Piccolo

Celesta

Neither of these elements align with or reinforce the triplet-based meter implied by the horns and bass drum. Rehearsal I is thus parallel to rehearsal H, where the triplet-based cello line appeared as an independent temporal plane over a deteriorating network of duple rhythms. In bars 64-67, Adès further misaligns these elements, and the bass drum pulse further augments:

**Ex. 30**

Bass Drum

Adès has thus brought the process he began at rehearsal G to its logical end; the bass drum pulse has slowed incrementally (from eighths all the way to half note triplets in bar 67 above), while the melodic elements have progressively lost their internal metric

<sup>30</sup> Also note the downbeat-upbeat cell lengths, which do not parallel previous instances of the melody (see ex. 9, 14 and 20, pages 18, 21 and 25)

identities<sup>31</sup>. But do these processes relate to Nancarrow’s canons? Adès has used many of the same techniques we find in previous passages; he progressively misaligns smaller motivic segments. But rehearsals G through I also imply an incremental relaxation of tempo. Nancarrow does employ tempo changes in some of his studies, including *Study No. 27: Canon – 5%/6%/8%/11%*. It can be briefly analyzed in many of the same ways as *Study No. 36*; rates of acceleration and deceleration are (for the purposes of this paper) essentially analogous to the interactions between varying tempi in *Study No. 36*. The listener immediately perceives the contrasting acceleration rates of the two-voice canon, particularly because of the even tempo of the eighth note ostinato that is pitted against it<sup>32</sup>. Adès’ goal in this passage of *Asyla* is clearly similar to Nancarrow’s, but his method is different from that of *Study No. 27*. The shifts and relaxations of rehearsal G’s material, for instance, are quantized as described above: the pulse shifts by a sixteenth and abruptly changes thirty-seconds to triplet sixteenths at rehearsal I, while the bass drum pulse moves from eighths to quarter note triplets (bar 60) to quarters (bar 65) and finally to half note triplets (bar 67).

## Conclusion

An exhaustive analysis of the entire first movement, and indeed the entire work, reveals many of the same principles that I have discussed above. *Asyla* as a whole can be mapped out as a network of both large- and small-scale convergences and divergences between conflicting elements. I have illustrated how Adès adapts the methods in Nancarrow’s work to a live medium, choosing to manipulate both the horizontal and vertical interactions

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<sup>31</sup> See examples 23-29, pages 28-32.

<sup>32</sup> Please see Appendix 3 (page 42) for an excerpt from *Study No. 27*.

between smaller segments by ordinary divisions of the measure. Adès’ also frequently “resets” a given process, choosing to have elements “coincide with reasonable frequency<sup>33</sup>” in order to best emphasize the interaction he is using.

But Adès, as I have previously noted, does not employ the mathematical rigor of Nancarrow’s techniques. In the domain of pitch, as Aaron Travers notes in “Interval Cycles, their Permutations and Generative Properties in Thomas Adès’ *Asyla*”, the pitch material of the work is not globally governed by interval cycles<sup>34</sup>. More orderly relationships, instead, occur on the local level. This lack of truly systematic manipulation is therefore consistent with *Asyla*’s rhythmic language. There are two possible conclusions to draw here. First is that Adès, in spite of some of the rigor I have shown, is a more pragmatic composer concerned only with approximating Nancarrow’s temporal misalignments rather than employing the logic behind them. Such a conclusion would explain the cavalier and nonchalant way in which he describes his own compositional process<sup>35</sup>. This, however, contradicts the second conclusion: that *Asyla*, on certain levels, is a meticulous application of some of Nancarrow’s methods. The temporal interactions of *Asyla* are no less perceptible than those of Nancarrow’s *Studies*, but any listener will certainly hear the key differences between Nancarrow and Adès that I have outlined above. It is safe to unequivocally assume that the exactitude of Nancarrow’s music requires mechanical precision, and that successful translation of a tempo canon at 17:18:19:20 to live performance is simply not

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<sup>33</sup> Cowell, 72.

<sup>34</sup> Travers, Aaron, “Interval Cycles, their Permutations and Generative Properties in Thomas Adès’ *Asyla*”, 34

<sup>35</sup> Adès is known for quotes like the following: “I went home and said, ‘I’m going to become a composer today, and do it properly.’ I started at the top note of the piano and went on from there.” (Ross, Alex. “Roll over Beethoven: Thomas Adès” *The New Yorker*, 2 November 1998.)

possible due to human inaccuracy. But do *Asyla*’s simple ratios, quantized transformations and frequent coincidences therefore arise out of practical concerns? If so, this may explain why Adès has employed less structural rigor than Nancarrow, as I have outlined above. The question that remains, however, is whether such an adaptation of these techniques is the only possible translation of Nancarrow’s work into music for live performance. But it is nevertheless clear is that Adès has found one compositional solution in *Asyla*, and that the work of the “man who lived in a garage in Mexico” is undoubtedly important to this surrealist examination of the intersection between a madhouse and a citadel.

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Appendix 1: Nancarrow's *Study No. 36* (excerpt), page 1

1.

*ff* sempre

$\text{♩} = 85$

$\text{♩} = 90$

Appendix 1: Nancarrow's *Study No. 36* (excerpt), page 2

2.

The image shows a handwritten musical score for Nancarrow's Study No. 36, page 2. The score is organized into four systems, each containing a grand staff (treble and bass clefs) and a single bass staff below it. The notation is in black ink on white paper. The first system shows a grand staff with a treble clef and a bass clef, and a single bass staff below it. The second system is similar. The third system includes a tempo marking "♩ = 95" above the treble staff. The fourth system shows a grand staff with a treble clef and a bass clef, and a single bass staff below it. The notation includes various rhythmic patterns, including sixteenth and thirty-second notes, and rests. The handwriting is in black ink on white paper.

Appendix 1: Nancarrow's *Study No. 36* (excerpt), page 3

3.

The image shows a handwritten musical score for Nancarrow's *Study No. 36*, page 3. The score is organized into three systems of staves. The first system consists of three staves. The second system consists of four staves, with a tempo marking  $\text{♩} = 100$  above the top staff. The third system consists of four staves. The notation includes various rhythmic values, accidentals, and dynamic markings.

Appendix 1: Nancarrow's *Study No. 36* (excerpt), page 4

4.

NO. 3 MONOGRAMA EXTRA WARSZAWA 12 PAŁTAC

Appendix 2: *Asyla*, third movement, rehearsal L (bar 111): winds, brass, percussion


This musical score page, labeled 'Rehearsal L' and corresponding to bar 111, is a complex orchestral arrangement for winds, brass, and percussion. The score is organized into several systems of staves:

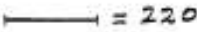
- Woodwinds:** Flutes (Fl.), Oboes (Ob.), Clarinets (Cl.), Bassoons (Bsn.), and Contrabassoons (Cb.).
- Brass:** Trumpets (Trp.), Trombones (Tbn.), and Euphoniums/Tubas (Eup.).
- Percussion:** Includes a section for 'Percussion I' and 'Percussion II' with various instruments like snare, cymbals, and tom-toms.
- Other:** A 'Cymbals' part and a 'Drum Set' part are also present.

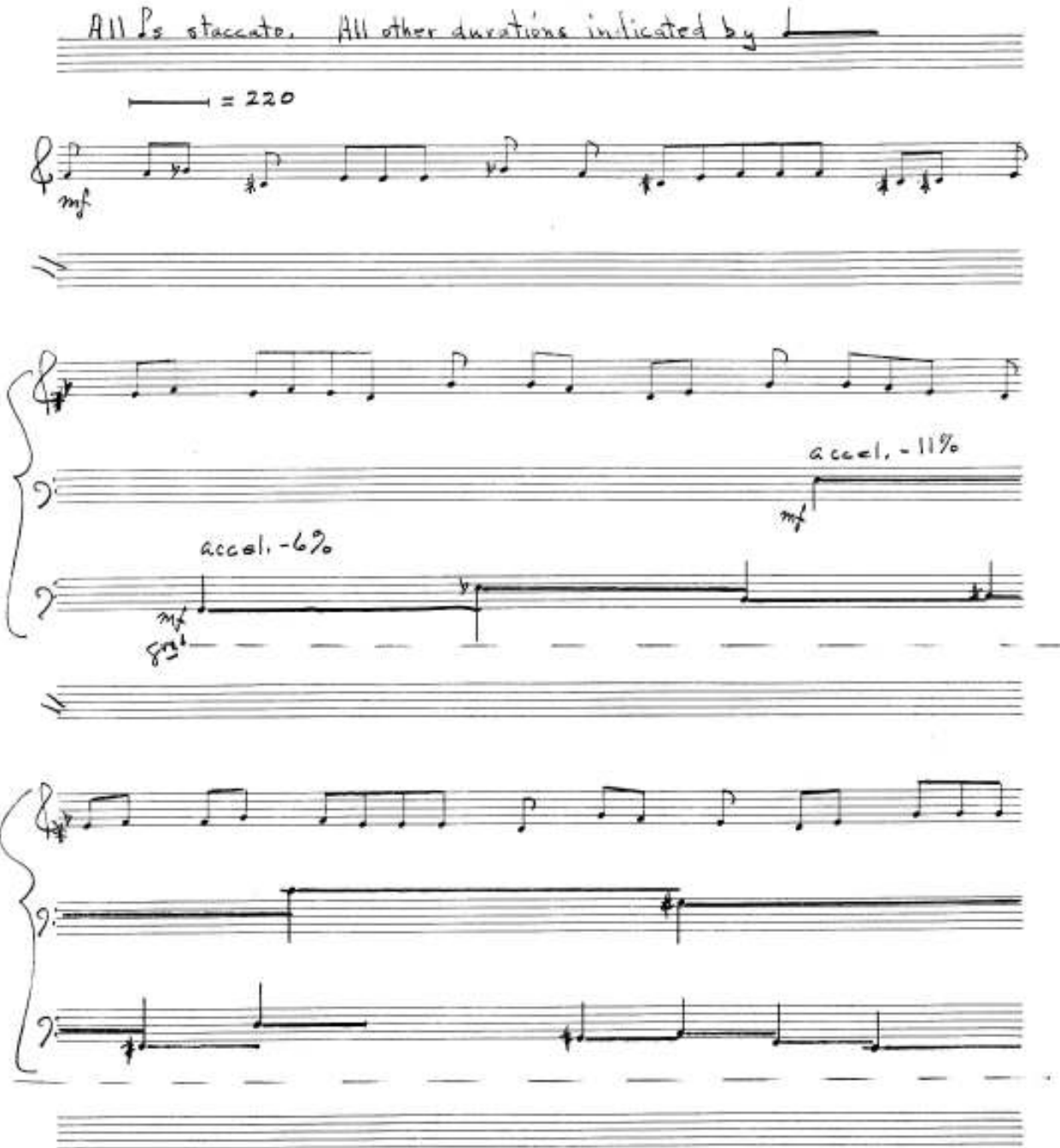
The score is written in a common time signature and features a variety of rhythmic patterns, including complex syncopations and polyrhythms characteristic of Nancarrow's influence. Dynamics range from *pp* (pianissimo) to *ff* (fortissimo). The rehearsal mark 'L' is placed at the beginning of the section, and the bar number '111' is indicated at the start of the first staff.

Appendix 3: Nancarrow's *Study No. 27* (excerpt), page 1

1.

All *Ps* staccato. All other durations indicated by 

 = 220



Appendix 3: Nancarrow's *Study No. 27* (excerpt), page 2

2.

**Appendix 3: Nancarrow's *Study No. 27* (excerpt), page 3**

3.

The first system of handwritten musical notation consists of three staves. The top staff is in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It contains a sequence of eighth and sixteenth notes. The middle and bottom staves are in bass clef and contain a rhythmic accompaniment with various note values and rests. The system concludes with a double bar line and a repeat sign.

The second system of handwritten musical notation consists of three staves. The top staff is in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It contains a sequence of eighth and sixteenth notes. The middle and bottom staves are in bass clef and contain a rhythmic accompaniment with various note values and rests. The system concludes with a double bar line and a repeat sign.

The third system of handwritten musical notation consists of three staves. The top staff is in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. It contains a sequence of eighth and sixteenth notes. The middle and bottom staves are in bass clef and contain a rhythmic accompaniment with various note values and rests. The system concludes with a double bar line and a repeat sign.