

[diferãs] for orchestra

Yigit Kolat

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

Doctor of Musical Arts
University of Washington
2015

Reading Committee:
Joël-François Durand, Chair
Juan Pampin
Huck Hodge

Program Authorized to Offer Degree:
Music

© Copyright 2015

Yigit Kolat

University of Washington

Abstract

[difeɤãs] for orchestra

Yigit Kolat

Chair of the Supervisory Committee:

Dr. Joël-François Durand

School of Music

The systematics of deferral and hierarchization, embodied in the Derridean term *différance* is inherent to the language as well as to music. The interplay between the musical materials that attempt to attain “meaning” via yielding to a chain of future materials or by assuming different functions within a hierarchical system provides the compositional terrain for this work. The first section of the piece aims to emphasize this systematic play of differing and deferring via employment of nine formal foci, dubbed as “forces.” The second section utilizes these forces outside their native context, transforming them to mere sound events which are immune to the effects of *différance*.

A number of local events in the piece are created via a computer-based generative process that provided pitch, rhythm and timbral data. Powered by a Music Information Retrieval System developed by the author, the aforementioned generative process derives the local material out of the “forces.” However, this procedure is utilized dynamically as an aid for resolving local compositional matters rather than as a tool to provide fixed pre-compositional data. In a similar manner, the timbral comparison feature of the MIR system provided a guide for orchestration by informing the user the timbral similarity of two sound inputs. In [difeɤãs], this method is used to create orchestral sequences of similar as well as contrasting timbres.

This dissertation consists of two separate documents: A report that summarizes the global and local compositional processes, and the full score of the piece.

TABLE OF CONTENTS

List of Figures	iii
List of Tables	iii
Acknowledgements	iv
<i>DIFFÉRANCE AND [difeṽās]</i>	
1. A brief note on <i>différance</i>	1
2. <i>Différance</i> as a basis of formal organization	1
2.1. First section, “the dewy path”	1
2.2. Second section, “the pine hut”	4
3. Derivation of local structures from spectral differences	4
The MIR System	4
3.1 Frequency extraction	5
3.2 Rhythmic extraction	6
3.3 Timbral comparison	8
4. Prospective Work	9
Endnotes	11
Bibliography	12
[difeṽās] for orchestra	
Cover Page	13
About the Piece	14
Instrumentation	15
Performance Instructions	16
Score	21

LIST OF FIGURES

Figure 1a.	2
Figure 1b.	2
Figure 2	2
Figure 3	5
Figure 4	5
Figure 5	6
Figure 6	6
Figure 7	7
Figure 8	7
Figure 9	8
Figure 10	8
Figure 11	9

LIST OF TABLE

Table 1	3
---------	---

ACKNOWLEDGEMENTS

My graduate studies at the University of Washington has been a transformative process that has deeply affected me not only as a musician, but also as a human being. My advisor Professor Joël-François Durand has been the primary force behind this process: his unique capability of instantly detecting my artistic, technical, and intellectual weaknesses has challenged me to constantly improve my craft and my working methods; while his endless support has given me courage to face these weaknesses. It is not a coincidence that I often address him as *Maître*: I have always enjoyed our unique master-apprentice relationship, and for years to come, I will continue to ask myself after each note I write: “What would *Maître* say?”

I have been extremely lucky to attend the classes of Professor Juan Pampin, from whom I learned to listen and look deeper into sound. As one of the rare figures in contemporary music scene who creates within the gray area between the art and science, he has guided me and my colleagues to explore uncharted territories of compositional thinking without losing the artistic sensibility.

I also owe thanks to Professor Huck Hodge, who is an inspiration for me and for many composers in my generation not only because of his stellar career, but also for his profound intellectual insight and his capability to synthesize this insight with a strikingly visceral musical language. I am immensely grateful for his support, guidance, and friendship.

I also would like to convey my deepest gratitude to the following people:

To Professor Richard Karpen, Professor Jonathan Bernard, Professor Lawrence Starr, and Dr. John Hanford, who have generously supported me and my work in every phase of my education.

To Professor Selim Kuru, who gratuitously served as a Graduate School Representative for my exams.

To the “guardian angel” of all UW School of Music graduate students, Dr. Brenda Banks, who made the entire process smoother with her unlimited insight, patience and friendship, as she does for all grad students on a daily basis.

To my colleagues at the UW School of Music and at the DXARTS, who have been a source of inspiration for me with their creative energy, dedication and friendship.

To my parents in Turkey, Neptün and Vildan Kolat, my grandparents Muammer and Şükran Çıraklar, as well as my uncle, aunt and cousin, Kudret, Nermin and Baran Çıraklar, who have always believed in me and supported me, and have proved that the 6,300 miles between us is only a minor detail.

To my parents-in-law, Ricardo and Shirley Marroquin, my brothers-in-law Andrés Tellez and Nathan Marroquin, and my sisters-in-law Rachel Marroquin and Renee Marroquin, for their endless support and love. For me, the “-in-law” suffix is just a petty formality.

Last, but not least, to my wonderful life partner, my muse, Sarah Kolat. It is certainly a formidable task to be a partner of a composer, and she undertook such an ordeal with immense commitment, love, and patience. Saying that “nothing would have been possible without her love and support” would be definitely true, but would be such a cliché. Allow me to say that *everything* is possible when she is by my side.

DIFFÉRANCE AND [diferãs]

“... [I]n the absence of a center or origin, everything becomes discourse—provided we have a consensus on this word—that is to say, a system in which the central, the original or transcendental signified, is never absolutely present outside of a system of differences.”

J. Derrida, *L'écriture et la différence*¹

1. A brief note on *différance*

Différance is a term coined in 1968 at the *Société française de philosophie* by French philosopher Jacques Derrida. The term is deliberately homophonous with the French word *différence*, and refers to the double meaning of the verb *différer*, meaning both “to defer” and “to differ”.

The notion of deferral arises due to the incapacity of the words and the signs to create a full meaning by themselves: one always requires additional signs in order to infer the meaning. The constant appeal to additional signs create a deferral of meaning through an infinite chain of signifiers. The term’s relation to meaning of differing is referred as *espacement* (“spacing”) by Derrida, indicating a spatial force that creates binary oppositions and hierarchies by differentiation. It should be noted that for Derrida, *différance* itself is neither a word, nor a concept—therefore distinct from Saussurean difference as well—rather, it is a systematic play of spacing and deferring that governs the language.

For Saussure, there are two types of differences: diachronic difference implies the distinction between different manifestations of the same thing at different times; whereas synchronic difference is the distinction between different things co-existing at the same time. Paul Livingston states that Derrida’s *différance* in fact combines these two types, expressing and covering the entire systematics of the deferral and spacing.²

The piece explores this systematics by employing elements that deliberately emphasize (or challenge) it. The title, written in the International Phonetic Alphabet (IPA) transliteration of both *différance* and *différence*, not only implies this exploration, but also refers to an attempt to disrupt the effects of *différance* in the second section of the piece—details of which is discussed in the related section of this text.

2. *Différance* as a basis of formal organization

2.1. First section, “the dewy path”

Différance plays a significant role in musical semiotics, since musical materials can be subjected to both spacing and deferring.

Musical “meaning” can be created via a chain of references that addresses the listener’s working memory (diachronic difference), and/or via structures that begin assuming hierarchical roles when they are placed within a context where they co-exist with others

(synchronic difference). The first section of the piece attempts to emphasize both deferral and spacing in a particular musical context where nine “forces” are featured. These forces are short events whose main function is to trigger textural changes in the subsequent moments of the music. During these passages, the triggering force is constantly referred to, creating effects of deferral and spacing: these initially unassuming materials gain formal importance over the other elements, and this acquired importance signals their deferred “meaning.”

Each force is structurally different and can affect various lengths of musical time with different levels of abstraction. The first force triggers a gesture that is echoed in almost all the active instrumental groups, and later exported to percussion (Ex. 1a, 1b). This type of reference is the most apparent. A more abstract reference generates another “force,” (m. 12, Cl. 1), where *sforzando* attack portions of the original gesture are substituted with grace notes (Ex. 9). Another example for the abstract usage of the first force can be found in mm. 73-84, where the expansions in the *tremolo* strings resolve to tutti attacks. This structure is simply a texturally enlarged version of the first force.

Ex. 1a: Musical notation for Flutes (+Picc.): ORD. It features a melodic line starting at measure 4 in 5/16 time, marked *p*. A dashed line labeled "flatterzunge" spans from measure 4 to measure 8. At measure 8, there is a dynamic shift to *f*. At measure 12, there is a *[sfffz]* marking. Tronbones, Tuba: palm smack is indicated at measure 12.

Ex. 1b: Musical notation for percussion. It shows Cymbal 22, Tam Tam, and Tenor Drum. The notation starts at measure 16 in 7/16 time, marked *p*. It transitions to 3/4 time at measure 22, marked *f*. A *sfz* marking is present at measure 22.

Figure 1a, 1b: Different occurrences of the first force

Not all of the forces function at the textural level. For example, the third and fourth forces trigger a directionality of sorts—their subtle but deliberate descending and ascending movements (Ex. 2) eventually initiate similar motions in a larger textural setting. See the table below for a summary of “forces,” each of which is indicated with Roman numerals in brackets in the attached score.

Figure 2: Musical notation for Cl. 1 & Cor Ang. and Timpano. The Cl. 1 & Cor Ang. part starts at measure 18 in 3/8 time, marked *pp*. It features a descending melodic line with a *f* marking at measure 20 and a *sfz* marking at measure 22. The Timpano part starts at measure 25 in 3/8 time, marked *pp*. Roman numerals 1/3 are indicated in brackets above the Cl. 1 & Cor Ang. part.

Figure 2: Directional triggers in third and fourth forces

Table 1: Nine “forces”

Force	Instruments & Location	Function	Areas of activity (RL=Rehearsal Letter)
I	Flutes, Low brasses mm. 4-5	Introduces a prominent gesture (see Ex. 1)	RL A-C, G-H; Force II (m.12), VII (m. 65), VIII (m. 92); entire second sub-section of <i>the dewy path</i> (I-K), starting with Oboes & Cor Ang. in mm. 96-97
II	Clarinet 1 m. 12	Introduces a prominent gesture (see Ex. 9)	RL A-F; Force III (m.18); entire second sub-section of <i>the dewy path</i> (I-K), starting with Piccolo & Flutes in m. 97
III	Cor Anglais & Clarinet 1 m. 18	Initiates vectorial, directionally-oriented texture	RL B-F; Force IV (mm. 24-25); entire second sub-section of <i>the dewy path</i> (I-K), starting with Trombones & Tuba in mm. 98-99
IV	Bass Drum, Timpani mm. 24-25	Provides material for the percussion solo (Ex. 7-8), triggers ascending motion	RL C-F; Force VI (m. 54); entire second sub-section of <i>the dewy path</i> (I-K) starting with Cellos in m. 98, Timpani in m. 97 (inverted motion)
V	Woodwinds m. 41	Introduces the ascending patterns	RL D-F; Force VI (m. 54); Vlas. in mm. 121-122 (final form, inverted pitch content); the rest of the sub-section
VI	Pianos m. 54	Extinguishes the rhythmic pattern, provides material for the following harmonic structure (Ex. 3-6)	RL F-G; Force VII (m. 65); Harp, Bassoons, Cbsn. and Timpani in mm. 107-109 (final form); the rest of the sub-section
VII	Pianos m. 65	Triggers the “orchestral hit,” strengthens the shock effect	RL F-H; Force VIII (m. 92); entire second sub-section of <i>the dewy path</i> (I-K), starting with Vlns. I in mm. 97-98
VIII	Winds m. 92	Carries a “compressed” form of the sound objects emerging in the following sub-section	Force IX (mm. 107,108); entire second sub-section of <i>the dewy path</i> (I-K)
IX	Piccolo mm. 107-108	Breaks the pattern, triggers the “anomaly” that emerges on the Piano 1 part.	Rest of the sub-section (J-K), especially Piano 1 from m.116 on

The eighth force (m. 92) appears in the wind parts (except contrabassoon) and contains the pitch content of certain sound objects that emerge in the second sub-section of *the dewy path* (starting on rehearsal letter I). This collective gesture pushes these sound objects forth and creates momentum for their constant repetition. However, this sense of momentum conceals the formal inertia governing the second sub-section: in contrast with the textural transformations that characterize the first sub-section, only slightly altered recurrences of “sound objects” are heard.

While the first sub-section (rehearsal letters A-H) presents the transformation of the forces throughout the entire sub-section (diachronic difference), the second sub-section features the difference of the forces that appear simultaneously (synchronic difference). The seven sound objects that emerge between mm. 95-99 stem from first seven forces. Table 1 also addresses these formal connections, some of which are subtler than others. Among the subtler connections, the relation between the sixth force (Ex. 4) and the group of sound objects appearing in the mm. 107-109 (Harp 2, Bassoons, Cbsn., Timpani) is notable, since the function of both materials is to decelerate their rhythmic structure to trigger a monorhythmic global texture. In the first case, the rhythmic structure is reduced into pulses that repeat every quarter note (rehearsal letter F); in the second case, a pulse of 32nds gradually disperses into the entire texture between mm. 108-119.

Measures 108-119 also includes the ninth force, which introduces an “anomaly,” a melodic/rhythmic alteration that takes place in the piccolo part. This alteration triggers a larger deviation in the same part on mm. 113-114, which itself triggers “anomalies” in several parts, most importantly in m. 116 in Piano 1. At this point, the formal inertia that has been governing the sub-section is severely damaged, despite the ongoing recurrences of the objects.

2.2. Second section, “the pine hut”

An attempt to disrupt the effects of the *différance* in the second section was briefly mentioned earlier. The title of the piece, [*difekās*], written in the International Phonetic Alphabet (IPA), directly relates with this attempt. When a word is written in IPA, its semantic potential becomes irrelevant, transforming the word into a sound object. Reading a word written in IPA renders it free from the effects of *différance*: it does not/cannot bind with other words to create a semantic hierarchy.

A similar effect is sought in the second section of the piece. The entire section is comprised of a parade of forces that are taken out of their native context and placed after each other, segregated with silence. Since there is no formal center in this context, it is expected that any type of formal hierarchy between the materials would be absent, creating an environment where “everything becomes discourse,” in reference to the quote at the beginning of this text. Within such an environment, these materials can only affect a span of a moment, rather than minutes, inviting the listener to focus at the present moment and at the minute timbral deviations deliberately emphasized in the score. Such an experience could be analogous to the experience of “enhanced sensory perception” reported by the attendants of a traditional Japanese tea ceremony. The attendant of a tea ceremony is expected to prepare herself for the ceremony before entering the tea room—or “the Pine Hut”—while walking through the path that leads to the tea room—“the dewy path”. On the path, the attendant still defines herself by yielding to numerous social signifiers, yet once she is in the tea room, these signifiers become irrelevant. In the tea room, a *samurai* would leave his sword at the entrance and would drink tea from the same cup as a peasant. In the tea room, the *différance* does not exist.

3. Derivation of local structures from spectral differences

The MIR System

A Music Information Retrieval (MIR) system I started to develop in Spring 2014 is used to obtain timbre, pitch, and rhythm data.³ The system provides three main functions:

- 1) Extracting frequency data from a spectrum,
- 2) Deriving rhythmic data from the deviations in the spectral flatness, i.e. the constantly changing "noisiness" of the spectrum,
- 3) Providing guidance for orchestration by measuring timbral similarity.

The forces are the only material that are analyzed (except the second force, which itself is a resultant of an analysis of the first force). In accordance with the concept of the piece, deviations between (or within) the spectra are used as source material for three musical parameters.

3.1 Frequency extraction

To extract frequency data from the spectrum, the system uses an implementation of ATS (Analysis, Transformation and Synthesis), a spectral modeling method that utilizes a psychoacoustic evaluation algorithm which is able to extract the pitch data based on psychoacoustical prominence. ⁴

Figure 3 shows the notation of the sixth force (a glass being slid on the piano strings while a *trill* is played on the keyboard) and its repetition. The spectrum of the recorded material can be seen in Figure 4.

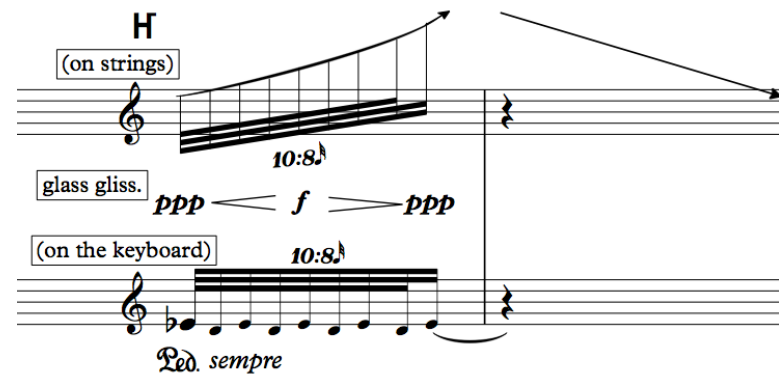


Figure 3: Sampled material (sixth force, piano)

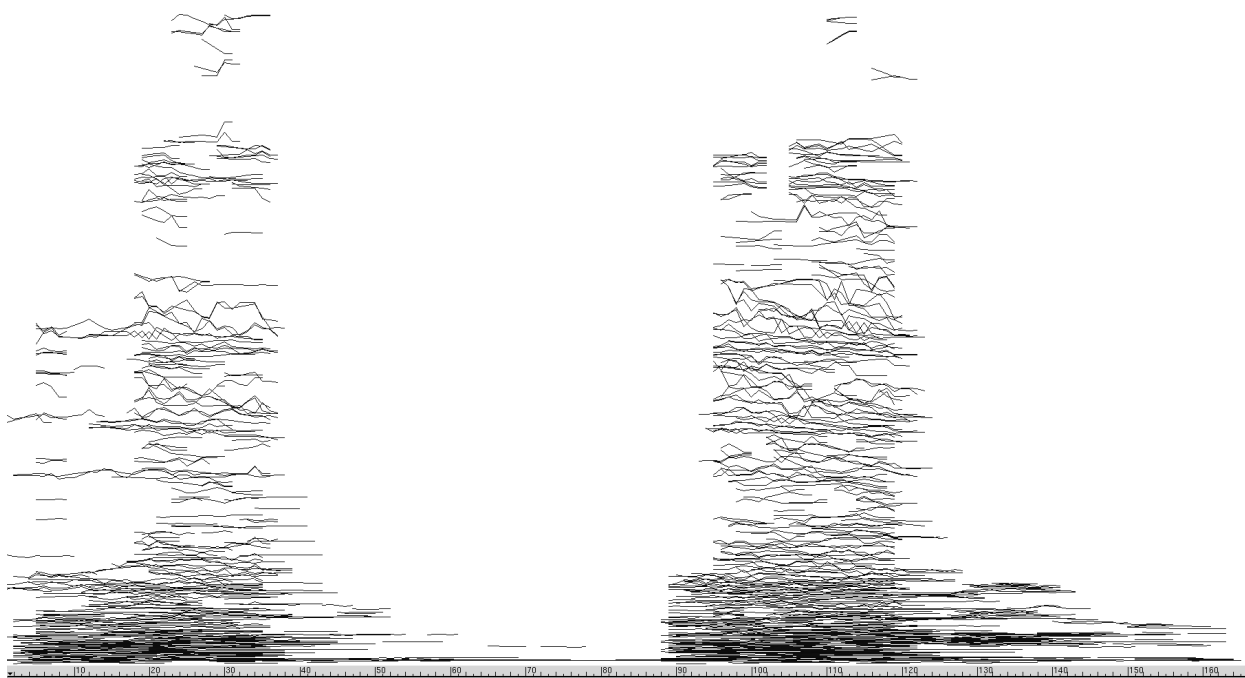


Figure 4: Spectral visualization in ATS

The analysis provides a list of frequencies, converted into MIDI note numbers. Since a gesture and its repetition is analyzed, the similarity of the gestures is reflected in their frequency contents. However, in accordance with the concept of the piece, only the different frequencies are used as pitch material. From each analysis frame, the first different MIDI note pairs are taken.

1st sample:

```
// frame no: 5
// most prominent freqs: [ 46.5, 48, 47.5, etc... ]

// frame no: 6
// most prominent freqs: [ 46.5, 82.5, 48, etc... ]

// frame no: 7
// most prominent freqs: [ 80.5, 63, 70, etc... ]
```

2nd sample:

```
// frame no: 5
// most prominent freqs: [ 46.5, 52, 68.5, etc... ]

// frame no: 6
// most prominent freqs: [ 49, 82.5, 70, etc... ]

// frame no: 7
// most prominent freqs: [ 80.5, 70, 82, etc... ]
```

Figure 5: First different MIDI note pairs are used

In the example below, the first measure shows the resultant aggregate, which is built by using MIDI note pairs that are shown in the previous example as pitch classes (only three pairs are included in both examples).

COMPLETE AGGREGATE
(mm.82-84)

MIDI numbers: 48 52 46.5 49 63 70 etc...

Figure 6: The resultant aggregate

3.2 Rhythmic extraction

Rhythmic material is derived by creating onsets whenever the spectral flatness or the “noisiness” level of the spectrum significantly changes. The system follows the instantaneous deviations within the overall power spectrum in real-time, and creates a “flag” when the amount of these deviations surpass a certain threshold. The time between two flags (onsets) are translated from seconds into “musical time” by dividing the duration of a whole note to the onset values. The system provides the user a verbal output such as “32nd septuplet,” “16th quintuplet within quarter-note triplet,” etc. In the current version, if the system yields a value shorter than 1/128, the program simply outputs “Grace note.”

For example:

Duration between two onsets = 0.04821526 seconds;

Tempo = 100 bpm → Beat (quarter note) duration = 0.6 seconds → Whole note = 2.4 seconds;

$2.4 / 0.04821526 = 49.776771918262$ → the duration is roughly 1/50 of a whole note (the system rounds the values to the closest integer).

1/50 of a whole note = 32nd quintuplet within 8th quintuplet:

The percussion solo at rehearsal letter D largely depends on this method. A single bass drum attack which is part of the fourth force (m. 24-25) is analyzed and following rhythmic values are extracted:

```
// frame no: 1
// most prominent freqs: [ 42.75, 52, 61.25,
// most prominent amps: [ 0.023257271729908,
// rhythm: 16th septuplet
//
//
// frame no: 2
// most prominent freqs: [ 43.25, 39.5, 53.5,
// most prominent amps: [ 0.037448531003768,
// rhythm: 8th triplet
//
//
// frame no: 4
// most prominent freqs: [ 39.25, 26.5, 52.5,
// most prominent amps: [ 0.032080048813893,
// rhythm: 32nd
//
//
// frame no: 4
// most prominent freqs: [ 39, 26.5, 43, 56,
// most prominent amps: [ 0.028547088481198,
// rhythm: Grace note
```

Figure 7: SuperCollider output for the rhythmic values

In musical application, these values are repeated to create chains of equal rhythmic values. They also serve as “models” for each measure: the rest of each measure is loosely based on them. When figures 7 and 8 are examined, it can be seen that each rectangle in Figure 8 includes rhythmic patterns that are made of the resultant rhythmic values in Figure 7 (the grace notes in the second pattern are simply ornaments). Note that the missing frame 3 is not a mistake—the repetition of frame 4 means that two different onsets were created within the fourth frame.

The image shows two staves of musical notation for a percussion solo. The top staff is labeled 'ONE PERFORMER' and the bottom staff is labeled 'Perc.'. The music is in 4/4 time and marked 'ben marcato'. The score includes several rhythmic patterns and groupings:

- Measure 37: A 3/4 note followed by a 4/4 note. A box labeled '1' contains a 7:4 note.
- Measure 38: A 6/8 note (labeled '(2+2+2)') followed by a 3:2 note. A box labeled '2' contains a 3:2 note.
- Measure 39: A 7/16 note (labeled '(3+4)') followed by a 5/8 note (labeled '(2+3)'). A box labeled '3' contains a 3:2 note.
- Measure 40: A 5/8 note (labeled '(2+3)') followed by a 3:2 note. A box labeled '4' contains a 3:2 note.

Dynamic markings include *sffz*, *ppp*, *fff*, *p possibile*, *poco a poco crescendo...*, and *T. D.* (Tutti Drum). The bottom staff includes a box labeled 'B. D.' (Bass Drum).

Figure 8: Generated rhythmic groups from the single rhythmic values (in rectangle, numbered) and the rest of the percussion solo

None of these methods were used to derive pre-compositional material; rather, they functioned as guides within specific musical contexts, as these contexts were being developed. The methods were useful to introduce new and contrasting local material that are later embedded to their relevant environments. In each case, only a limited portion of a structure is “computer-generated,” the rest of the structure is—for the lack of a better term—“hand-written” based on the example set by the derived material. In the example below,

the computer-generated gesture is gradually developed, and rendered to be the most prominent material in the following passages (mm. 15-37).

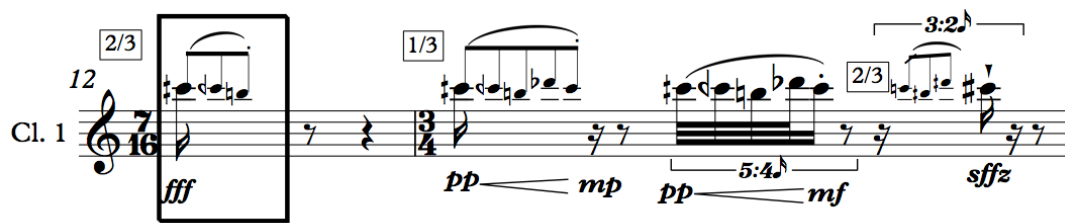


Figure 9: Development of a “generated” (in rectangle) clarinet gesture (second force)

3.3 Timbral comparison

The timbral comparison feature of the tool is based on a method that takes the spectrum as a statistical input, and applies a risk function named Mean Square Error (MSE). MSE takes the average of the squares of the “errors”—in this context, the differences between the magnitudes of each pair of analysis frames (denoted as X and Y below)— and outputs a single float value between 0.0 and 1.0 (0.0 denotes identical timbre).

$$MSE = \frac{1}{n} \sum_{i=1}^n (X_i - Y_i)^2$$

```
(
{
  var mse, big_n, x, y, z, out;
  x = ~array1;
  y = ~array2;
  z = if (~array1.size < ~array2.size,
    { ~array2.extend(~array1.size) },
    { ~array1.extend(~array2.size) });
  //so that the size of the arrays is always equal

  //MSE equation
  big_n = z.size;
  mse = big_n.collect({|i|
    (x[i] - y[i]).squared;
  }).sum * big_n.reciprocal;
```

Figure 10: MSE and its implementation in SuperCollider

This feature is used in two different ways in the two sub-sections of *the dewy path*. In the first sub-section (rehearsal letters A-E) most of the entries carry a certain level of timbral similarity with the previous entry (MSE values are < 0.5, see Figure 11). The procedure followed in the second sub-section (starting from rehearsal letter I) is the opposite of the first: most of the entries are selected from “timbrally distant” options (MSE values are > 0.5). Each timbral material that couples with the previous material is selected from a number of “candidate” samples. Some of these samples are recorded, some of them are extracted from existing recordings. From among the candidates, the ones that yield the lowest or highest MSE values (depending on the sub-section) are used for the orchestration.

Figure 11: Timbral similarity in the first sub-section (reduced score, double-headed arrows indicate pairs of similar timbres)

4. Prospective Work

1) One could argue that the intended effect in *the pine hut*, discussed in section 2.2 of this text, is locally achieved. The manner in which the parade of forces is presented (extremely slow tempo, low level of overall loudness, subtle timbral undulations, segregation with rests, etc.) will likely transform these structures into mere sonic events that are free of any local spacing or deferral, thus completing a chain of transformation for the formal function of all forces: focal points (first sub-section of *the dewy path*) → sound objects (second sub-section of *the dewy path*) → sonic events (*the pine hut*).

However, the origins of the forces are still recognizable. Recognizing them by binding them with their original context would immediately create an instance of *différance*, putting them back to the hierarchical scheme of the universal formal structure, regardless of the local effect. Therefore, the compositional challenge persists: to transform these materials into mere sonic events, devoid of all formal nexus both in local and overall level. Future work on the piece will concentrate on this problem.

2) The MIR system is being developed to become a full-fledged tool that will be able to visually describe instrumental timbres in a 3D space as vector points, and to couple them with relevant action parameters in order to provide the composer with a finer level of parametric control. Additionally, the real-time timbral comparison feature of the tool will provide an intuitive practicing environment for performers, allowing them to learn specific combinations of playing parameters by providing constant feedback on timbral similarity between their input and the intended timbre.

ENDNOTES

1. “[E]n l'absence de centre ou d'origine, tout devient discours —à condition de s'entendre sur ce mot— c'est-à-dire système dans lequel le signifié central, originaire ou transcendantal, n'est jamais absolument présent hors d'un système de différences.”

Jacques Derrida, *L'écriture et la différence*, trans. Yigit Kolat (Paris: Éditions du Seuil, 1967), 411.

2. Paul Livingston, *The Politics of Logic: Badiou, Wittgenstein, and the Consequences of Formalism* (New York: Routledge, 2012), 116-117.

3. An earlier version of this system was presented as a final project for DXARTS 565: Spectral Modeling of Sound course taught by Prof. Juan Pampin in Spring 2014, University of Washington, Center for Digital Arts and Experimental Media.

4. Juan Pampin, “ATS: A System for Sound Analysis Transformation and Synthesis Based on a Sinusoidal plus Critical-Band Noise Model and Psychoacoustics,” in Proceedings of the International Computer Music Conference, (Miami: 2004), <http://quod.lib.umich.edu/i/icmc/bbp2372.2004.099/1> (accessed March 19, 2015).

5. The timbral comparison component is enhanced with a Mel-frequency cepstrum coefficients (MFCC) extraction feature in the most recent version of the system (as of March 2015). This feature is out of scope of this text, since it was not implemented in the compositional process of *[diferās]*.

For a pioneering usage of MSE with MFCC in the context of automatic parameter estimation, see Jonathan Berger, Julius O. Smith and Hiroko Terasawa, “Using a perceptually based timbre metric for parameter control estimation in physical modeling synthesis,” in Proceedings of the International Computer Music Conference, (Barcelona: 2005), <http://quod.lib.umich.edu/i/icmc/bbp2372.2005.096/--using-a-perceptually-based-timbre-metric-for-parameter?view=image> (accessed March 19, 2015).

BIBLIOGRAPHY

Derrida, Jacques. *L'écriture et la différence*. Paris: Éditions du Seuil, 1967.

Livingston, Paul. *The Politics of Logic: Badiou, Wittgenstein, and the Consequences of Formalism*. New York: Routledge, 2012.

Pampin, Juan. "ATS: A System for Sound Analysis Transformation and Synthesis Based on a Sinusoidal plus Critical-Band Noise Model and Psychoacoustics." In Proceedings of the International Computer Music Conference. (Miami: 2004),

<http://quod.lib.umich.edu/i/icmc/bbp2372.2004.099/--ats-a-system-for-sound-analysis-transformation-and-synthesis?view=text&seq=1&size=100> (accessed March 19, 2015).

Berger, Jonathan, Julius O. Smith and Hiroko Terasawa. "Using a perceptually based timbre metric for parameter control estimation in physical modeling synthesis," in Proceedings of the International Computer Music Conference. (Barcelona: 2005),

<http://quod.lib.umich.edu/i/icmc/bbp2372.2005.096/--using-a-perceptually-based-timbre-metric-for-parameter?view=image> (accessed March 19, 2015).

yigit kolat

[difevās]

for orchestra

2014

about the piece

The piece features nine “forces”, nine events whose appearances trigger significant changes in the musical discourse. Among these forces there are simple gestures that extend to the entire orchestral texture, unassuming rhythmic alterations that affect the local pitch structure, or a particular timbral cue that cause similar timbres to emerge. The main function of these forces is to create a seamless formal flow while leaving space for large-scale textural disturbances. This flow can be considered as a constant **deferral** of meaning through a chain of signifiers, where the listener’s attention is constantly pushed towards the future. Musical semantic depends on a network of references, and every reference to the past creates hierarchies, further emphasizing the **differences** between the materials. The title of the piece comes from this double-meaning, deferral and difference, embodied in the term **différance** in Jacques Derrida’s essay bearing the same title.

Two sections of the piece, *the dewy pathway* and *the pine hut* conceptually contrast each other. The first section follows the procedure of deferral and difference described above, whereas this procedure does not reemerge in the second section. The materials in the second section consist of the snapshots of the moments where the forces appear, however, now they are isolated from their native context--they can only affect a span of a moment, rather than minutes. All formal nexuses are unavailable: form is now only a fixed shape and it’s impossible to create any reference to defer the musical meaning or to build hierarchies between the materials within it.

The titles refer to the venue where the traditional Japanese tea ceremony is held (“pine hut” being the nickname of the venue), as well as the path that leads to the venue (*roji*). The attendant of a tea ceremony is expected to prepare herself before entering the tea room while walking through the path. On the path, the attendant still defines herself by yielding to numerous social signifiers, yet once she is in the tea room, these signifiers become irrelevant. In the tea room, a *samurai* would leave his sword at the entrance and would drink tea from the same cup as a peasant. In the tea room, the *différance* does not exist.

Premiere: Tokyo Philharmonic Orchestra, Kazumasa Watanabe, conductor. 31 May 2015, Tokyo Opera City Concert Hall, Tokyo, Japan.

instrumentation

Piccolo
2 Flutes
2 Oboes
Cor anglais
2 Clarinets in B \flat ,
Bass clarinet
2 Bassoons
Contrabassoon

4 Horns in F/B \flat ,

3 Trumpets in B \flat , (with straight, cup, harmon [without stem], bucket, solotone and practice mutes)

3 Trombones (with straight, cup, harmon [without stem], bucket, solotone and practice mutes)

Tuba

3 Timpani (I: ~80 cm diameter with a large reversed cymbal on the surface. II: ~74 cm. III: ~66 cm.)



Percussion (see the Performance Instructions):

2 Bongos

Large suspended Cymbal

2 Brake drums

3 Toms

Thunder sheet

Tenor drum

5 Woodblocks

Large Tam-tam

Bass drum

2 Crotales:



Marimba

Harp 1

Harp 2

Piano 1 (grand piano) with a medium size glass

Piano 2 (grand piano) with a medium size glass

Violin I (A: 8, B: 8, with mutes)

Violin II (A: 7, B: 7, with mutes)

Viola (A: 6, B: 6, with mutes)

Cello (A: 5, B: 5, with mutes)

Contrabass (A: 4, B: 4; at least 3 with 5-stringed instruments, with mutes)

THE SCORE IS IN C.

APPROXIMATE DURATION: 12'30"

performance instructions

GENERAL

Accidentals

♯̣ = Quarter tone sharp

♭̣ = Quarter tone flat

♯̣̣ = Three-quarter tone sharp

♭̣̣ = Three-quarter tone flat

♯̣̣̣ = Slightly sharp (eighth tone)

♭̣̣̣ = Slightly flat (eighth tone)

Woodwinds (except Contrabassoon) & Trumpets: Whenever possible, these instruments should execute microtones using the alternate fingerings.

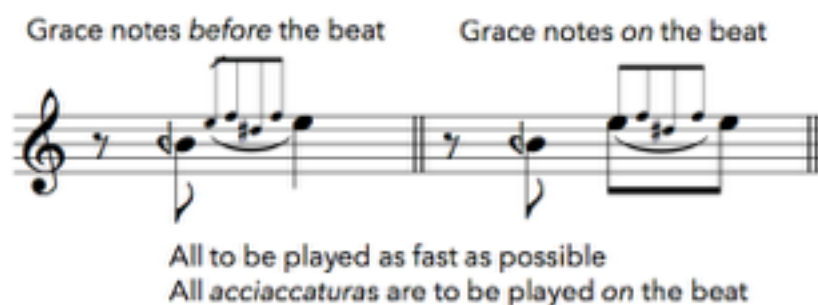
French Horns: By taking the F side (of a standard F/B-flat horn) main tuning slide and tuning it down a full quarter-step, the horn can play a quarter tone 'chromatic' scale throughout the entire range, except for the pedal gaps in the lowest octave. Similarly, whenever possible, the horns should execute microtones using alternate fingerings.

Contrabassoon and Tuba: Embouchure changes are to be used to attain the microtones.

Glissando/Portamento



Grace Notes



Vibrato

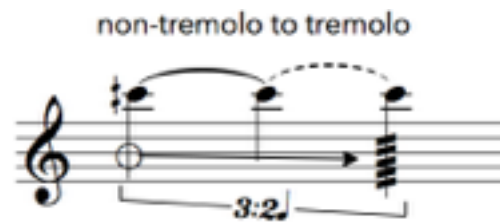
Only non-vibrato should be used, unless otherwise is stated.

Tremolo:

128th tremolos should be read as "as fast as possible" in all tempi until measure 125. From this measure on, the following notation is used for the tremolos that are to be played "as fast as possible":

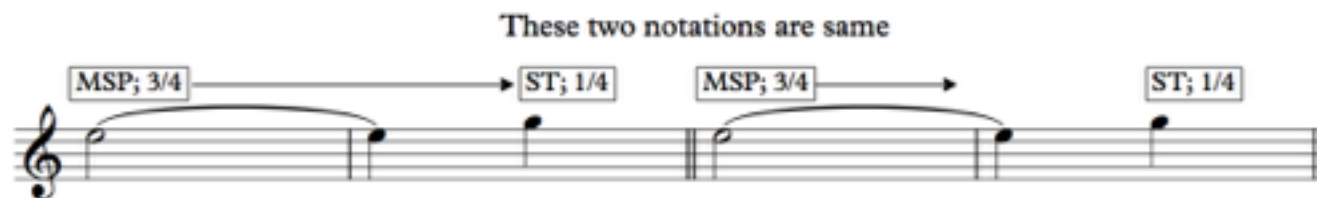


Gradual transition between non-tremolo and tremolo (tremolo to non-tremolo is also possible) is shown as follows. For wind instruments, this notation also describes a gradual transition from *ordinario* to *flutterzunge* (or, vice versa).



Other symbols

Arrows denote gradual change between any two parameters. Please note the following condition, where long arrows are substituted with shorter arrows, due to the notational density in the score:



Triangle noteheads denote the highest note possible.

The dynamics in brackets (i.e. *[fff]*) describe the physical force applied to the instrument rather than the loudness of the result.

TECHNIQUES USED IN "THE DEWY PATHWAY"

WOODWINDS

Air noise: **0:** Normale; **1/3:** More pitch content, less air noise; **2/3:** More air noise; **3/3:** Only air noise.

For the flute, the equivalent of 2/3 can be attained by tilting the instrument:

- ↘ : Tilt the instrument inwards, creating air noise
- ∨ : Normal position

Multiphonics: Fingerings are provided in the parts.

Flutterzunge

Slap-tongue: A quick release of the tongue.

Whistle tone (flute): With an open but at the same time controlled embouchure and a very low air pressure

Tongue ram (flute): Close the mouthpiece with the whole mouth, and make a big and very rapid movement with the tongue, against the teeth. The easiest way is to say "HOT!" or "HT!"

sfz multiphonic (clarinets): Blow abruptly with great force with slightly depressed embouchure.

Double harmonics (oboe and cor anglais): These dyads require a normal embouchure and a considerably low air pressure. Fingerings are provided in the parts.

Flap (bassoons): Hit the reed with the tongue like when playing staccato. The air pressure must be very slight.

Teeth on reed

BRASS

Flutterzunge

Growl: A glottal growling through the instrument.

Air tones

Half-valving

Lip gliss: Use lip glissandi for all short-distance bends except the hand glissando for horn.

Palm smack: Hit the mouthpiece with palm, creating a percussive effect.



Slap-tongue: A quick release of the tongue creates this timbre.

Fully-stopped/Open (Horn): These two playing modes are often used with a gradual transition from/to each other, creating change in timbre as well as pitch.

PERCUSSION

Beaters & Special attacks

Symbols are as follows:

soft xyl.	med. xyl.	hard. xyl.	soft timp.
			
med. timp.	hard timp.	soft b.d.	med. b.d.
			
hard b.d.	soft yarn	med. yarn	hard yarn
			
triangle b.	brush	superball	bow
			
hand	hold the beater down after the strike	center	edge
			

Bowing

Bow changes must be imperceptible as possible.

Crescendo indicates an increase in bowing speed or pressure level for the superball, and diminuendo indicates vice versa.

HARP

Chords are non-arpeggiated unless otherwise is stated.

Swift arpeggiation and nail pluck notation:



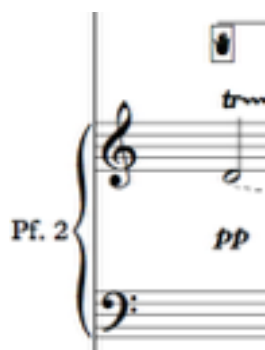
PIANO

On the keyboard

Thumb: Use the side of the thumb to cover certain second intervals on the white keys.

On the strings

Muffling the strings:



Glass glissando: Place the glass horizontally on the string. Slowly slide the glass on the string, following the lines in the R.H. part. L.H. part shows the attacks on the keyboard. Do not lift the glass until the passage is over.

Thunder effect: Horizontally swipe the lowest strings with four fingertips after silently depressing the intended pitches. Let the strings clash, then gradually diminish the sustain pedal. When the hold pitches are slowly released, a specific buzzing sound will emerge.

Sustain Pedal

Gradual release:



STRINGS

Vertical bow position

AST: Alto sul tasto; **ST:** Sul tasto; **ORD:** Ordinario; **SP:** Sul ponticello; **MSP:** Molto sul ponticello

Bow pressure

1/4 = Flautando; **2/4** = Normale; **3/4** = Noisy with pitch content; **4/4** = Noise without pitch

Special Bowing

Arco gettato: the bow bounces off the string and rebounds to make successive attacks in a controlled motion.

Finger pressure

ORD. <--> harmonic <--> half-harmonic <--> none: various levels of finger pressure, used with or without gradual transitions.

Intended pitch results for non-conventional artificial harmonics (m3, M3 etc.) are shown in the score.

Miscellaneous right hand techniques

Nail pizzicato, Bartók pizzicato, Strumming

TECHNIQUES USED IN "THE PINE HUT"

The standard techniques described above produce timbral results that are rather pre-determined. The second section of the piece differs from the first by its usage of non-deterministic timbral structures. Here, the performers are asked to continuously and irregularly alter several playing parameters at a time. Two timbral inputs are provided for each event: a starting point, and the names of the playing parameters to be altered.

For example, the violinist sees "ORD." as the starting point, followed by the parameter "Bow pressure". This means continuous, irregular and minute changes in bow pressure is expected. Please note that these oscillations imply a heightened perception of sound, analogous to heightened sense of taste experienced in a tea house. None of these techniques to be applied dramatically, they need to be on the threshold of perception, as liminal as possible.

Although the performers are encouraged to seek for the richest timbral results, any outcome is welcomed. Following are the parameters to be continuously and irregularly "oscillated":

WOODWINDS

Air pressure

Tonguing: Disturbing the air stream with random tongue movements

Reed position (oboe, cor anglais, bassoon): Reed's position in the mouth, pushed inwards etc.

"Bite" pressure (clarinets): The lip pressure on the mouthpiece.

Diaphragm vibrato

BRASS

Air pressure

Diaphragm vibrato

Tonguing

PERCUSSION

Bow speed (and superball pressure)

Contact point: Edge (rim) or center. See above for the symbols

STRINGS

Vibrato

Bow pressure

Bow skewness: Refers to deviation of the bowing direction from orthogonality of the string

Vertical bow position: AST to MSP.

Finger pressure: Left fingers' pressure on the strings

seating

The two pianos should be placed symmetrically on an axis, as close as possible to the end of the podium, on each side of the conductor.

the dewy path.

A
♩ = 52

I

3/4 4/4 3/4 5/16 7/8 3/4 7/16 3/4

Piccolo
Flute 1-2
Oboe 1-2
Cor Anglais
Clarinet in Bb 1-2
Bass Clarinet in Bb
Bassoon 1-2
Contrabassoon
Horn in F 1-3
Horn in F 2-4
Trumpet in Bb 1
Trumpet in Bb 2-3
Trombone 1
Trombone 2-3
Tuba
Timpani
Percussion
Marimba
Harp 1
Harp 2
Piano 1
Piano 2
Violin I A
Violin I B
Violin II A
Violin II B
Viola A
Viola B
Violoncello A
Violoncello B
Contrabass A
Contrabass B

esistando
whistle tone
p
mp
f
ppp
p
palm smack
[fff]
[palm smack]
[fff]
palm smack
[fff]
CROTALE
TAM-TAM
CYMBAL
TAM-TAM

3/4 4/4 3/4 5/16 7/8 3/4 7/16 3/4

II

9 **3/4** **2/4** **7/16** **3/4** **2/4** **4/4** **7/8**

Ficc. *fluttertongue* *tongue ram* *whistle tone* *ORD* *HTI* *sffz* *mf* *pp* *f* *sffz* *pp* *f* *sffz* *pp* *f* *sffz*

Fl. 1-2 *à 2* *tongue ram* *ORD* *ORD* *fluttertongue* *à 2* *pp* *f* *sffz* *pp* *f* *sffz* *pp* *f* *sffz*

Ob. 1-2 *ORD, non vib.* *pp* *mf* *pp* *pp* *mp* *pp* *sffz* *à 2* *slap tongue (on the written pitch)* *ORD, non vib.* *à 2* *slap tongue* *à 2* *fluttertongue* *à 2* *pp* *f* *sffz*

Cor Ang. *slap tongue (on the written pitch)* *ppp* *f* *sffz*

Cl. 1-2 *1/3* *fluz.* *ppp* *mp* *ff* *1/3* *pp* *mp* *pp* *mf* *sffz* *3-2* *sffz* *1/3* *pp* *f* *sffz*

B. Cl. *fluttertongue* *1/3* *pp* *ppp* *mf* *1/3* *pp* *mp* *pp* *pp* *sffz* *1/3* *pp* *f* *sffz*

Bsn. 1-2

Cbsn.

Hn. 1-3

Hn. 2-4

Tpt. 1

Tpt. 2-3

Tbn. 1 *sffz* *pp* *sffz* *pp* *sffz* *pp* *sffz*

Tbn. 2-3 *à 2* *sffz* *pp* *sffz*

Tba. *sffz* *pp* *sffz*

Timp.

Perc. *(TAM-TAM)* *S* *BASS DRUM* *p*

Mar.

Hp. 1

Hp. 2

Pf. 1

Pf. 2

Vln. I A **3/4** **2/4** **7/16** **3/4** **2/4** **4/4** **7/8**

Vln. I B

Vln. II A

Vln. II B

Vla. A

Vla. B

Vcl. A

Vcl. B

Cb. A

Cb. B

D

V

37 **3/4** **6/8 (2+2+2)** **7/16** **5/8** **2/4** **7/16**

Picc. *whistle tone* *mf* *mp* *p* *fff* *slap tongue*

Fl. 1-2 *whistle tone* *mf* *mp* *p* *fff*

Ob. 1-2 *whistle tone* *mf* *mp* *p* *fff*

Cor Ang. *whistle tone* *mf* *mp* *p* *fff*

Cl. 1-2 *whistle tone* *mf* *mp* *p* *fff*

B. Cl. *whistle tone* *mf* *mp* *p* *fff*

Ban. 1-2 *whistle tone* *mf* *mp* *p* *fff*

Cbsn. *whistle tone* *mf* *mp* *p* *fff*

Hn. 1-3 *mf* *pp* *mp*

Hn. 2-4 *mf* *mp* *p*

Tpt. 1 *mf*

Tpt. 2-3 *mf*

Tbn. 1 *p* *mp* *p*

Tbn. 2-3 *p* *mp* *p*

Tbn. *flutterzunge* *p* *rit.* *p*

Timp.

Perc. *ben marcato* **(5 WOODBLOCKS)** *ppp* *fff* *p possibile* *poco a poco crescendo...* *fff*

ONE PERFORMER **2 BONGOS, 3 TOMS** **(ONE PERFORMER)** **T. D.** **B. D.**

BRAKE DRUMS (another performer)

Mar.

Hp. 1 *ben marcato* *p* *f*

Hp. 2

Pf. 1 *ben marcato* *p* *fff* *half ped.*

Pf. 2 *ben marcato* *p* *fff* *half ped.*

Vln. I A *ben marcato* *pp* *fff* *MSP 3/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Vln. I B *ben marcato* *pp* *fff* *MSP 3/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Vln. II A *ben marcato* *pp* *fff* *MSP 3/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Vln. II B *ben marcato* *pp* *fff* *MSP 3/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Vla. A *ben marcato* *pp* *fff* *MSP 1/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Vla. B *ben marcato* *pp* *fff* *MSP 1/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Vc. A *ben marcato* *pp* *fff* *MSP 1/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Vc. B *ben marcato* *pp* *fff* *MSP 1/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Cb. A *ben marcato* *pp* *fff* *MSP 1/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

Cb. B *ben marcato* *pp* *fff* *MSP 1/4* *ORD 1/4* *mf* *pp* *fff* *ORD 2/4* *mf* *pp* *fff*

F VI

This page of the musical score, numbered 8, contains the following parts and instructions:

- Woodwinds:** Flute 1-2, Oboe 1-2, Clarinet 1-2, Bass Clarinet, Bassoon 1-2, Contrabassoon, Horn 1-3, Horn 2-4, Trumpet 1, Trumpet 2-3, Trombone 1, Trombone 2-3, Tuba, and Timpani.
- Brass:** Percussion (ONE PERFORMER, TENOR DRUM, BASS DRUM, TAM-TAM (another performer)), Mace, Maracas, and Gong.
- Strings:** Violin I A, Violin I B, Violin II A, Violin II B, Viola A, Viola B, Violoncello A, Violoncello B, and Double Bass A/B.
- Piano:** Two piano parts (Pf. 1 and Pf. 2) with instructions like "prepare the glass" and "hit the lowest strings w/palm".
- Performance Instructions:** Numerous annotations such as "without the reed", "without the mouthpiece", "half-valving", "solotone", "OSSI: Harmonic gliss. w/ half-valving", "OSSI: same gesture, without specified tritone pitches between E and D", "OSSI: Bend w/ half-valving", "hit the lowest strings w/palm", "prepare the glass", "glass gliss.", "on strings", "on the keyboard", "sempré", "arco", "arco gestato", "ST", "MSP", "ORD", and "SP".
- Time Signatures:** The score transitions from 2/4 to 3/4 and back to 2/4.
- Dynamics:** A wide range of dynamic markings including *pp*, *ff*, *p*, *mp*, *f*, and *sub. pp*.

56

[pitches are unspecified]

PPP < f > PPP

PPP < f > PPP

without the reed

without the mouthpiece

without the reed

briefly and lightly strike the surface with the beater

bowing with hair

col legno tratto

col legno battuto

bowing with hair

col legno tratto

col legno battuto

col legno tratto

col legno battuto

VII

♩ = 72

Note to the conductor:
Please avoid a large cue for m. 71:
the attack should be utterly
unexpected.

♩ = 68

G

♩ = 76

The score is divided into two main sections, G and H, with a tempo change from 72 to 68 to 76. The key signature is G major. The score includes parts for a full orchestra and piano. Key performance instructions include:

- Reed Instruments:** "replace the reed" and "replace the mouthpiece" for Oboe, Cor Anglais, Clarinet, Bass Clarinet, and Bassoon.
- Brass Instruments:** "remove the glass" and "Thunder effect" for Horns, Trumpets, and Trombones.
- Percussion:** "BRAKE DRUMS" and "BASS DRUM" instructions.
- Piano:** "keep the glass on the strings, but stop moving it" and "silently depress the keys beforehand" for both pianos.
- Strings:** "hit the lowest strings w/palm" and "let the strings clash with each other" for Violins, Violas, and Cellos/Double Basses.

The score features complex rhythmic patterns, including 1/4, 3/8, 3/4, 4/4, 9/32, and 3/8 time signatures. Dynamic markings range from *ppp* to *fff*. The score concludes with a *ppp cresc.* marking and a tempo change to 76.

75

3/4 4/4 2/4 3/4 4/4

Picc. *sfff*

Fl. 1-2 *sfff*

Ob. 1-2 *sfff*

Cor Ang. *sfff*

Cl. 1-2 *sfff*

B. Cl. *sfff*

Bsn. 1-2 *sfff*

Cbn. *sfff*

Hr. 1-3 *sfff*

Hr. 2-4 *sfff*

Tpt. 1 *sfff*

Tpt. 2-3 *sfff*

Tbn. 1 *sfff*

Tbn. 2-3 *sfff*

Tba. *sfff*

Timp. *sfff*

Perc. *sfff*

Mar. *sfff*

Hp. 1 *sfff*

Hp. 2 *sfff*

Pf. 1 *sfff* *let the strings clash with each other* *slowly release the keys* *ppp*

Pf. 2 *sfff* *let the strings clash with each other* *slowly release the keys* *ppp*

Vln. I A *sfff* [MSP, 4/4] *sfff*

Vln. I B *sfff* [MSP, 4/4] *sfff*

Vln. II A *sfff* [MSP, 4/4] *sfff*

Vln. II B *sfff* [MSP, 4/4] *sfff*

Vla. A *sfff* *ppp poco a poco cresc.* [MSP, 3/4] [ST, 1/4] *ff*

Vla. B *sfff* *ppp poco a poco cresc.* [MSP, 3/4] [ST, 1/4] *ff*

Vc. A *ppp poco a poco cresc.* [MSP, 3/4] [ST, 1/4] *ff*

Vc. B *ppp poco a poco cresc.* [MSP, 3/4] [ST, 1/4] *ff*

Cb. A *ppp poco a poco cresc.* [MSP, 3/4] [ST, 1/4] *ff*

Cb. B *ppp poco a poco cresc.* [MSP, 3/4] [ST, 1/4] *ff*

[MSP, 3/4] [ST, 1/4]

Gradual transition from the initial timbre to ordinario. Any pitch can be used between the highest note and the target note.

VIII

The score is divided into measures with various time signatures: 3/4, 5/8, 2/4, 5/16, and 2/4. The woodwind section includes Piccolo, Flutes (1-2), Oboes (1-2), Cor Anglais, Clarinets (1-2), Bass Clarinet, Bassoons (1-2), Contrabassoon, Horns (1-3, 2-4), Trumpets (1, 2-3), Trombones (1, 2-3), and Tuba. The brass section includes Percussion, Maracas, and Horns (1, 2). The string section includes Violins (I A, I B, II A, II B), Violas (A, B), Cellos (A, B), and Double Basses (A, B). Performance instructions include dynamics such as *sfffz*, *sffz*, *sfz*, *mp*, *p*, and *ff*, as well as articulation like *sfz in mp*. Specific techniques are noted, such as 'Teeth on reed' for woodwinds and 'Multiphonic on a high fundamental note' for strings. The score also includes rehearsal marks (ST, ORD, SP, MSP) and performance directions like 'immobilità' and 'sub. p'.

101

Picc.

Fl. 1-2

Ob. 1-2

Cor Ang.

Cl. 1-2

B. Cl.

Bsn. 1-2

Cbsn.

Hn. 1-3

Hn. 2-4

Tpt. 1

Tpt. 2-3

Tbn. 1

Tbn. 2-3

Tba.

Timp.

Perc.

Mar.

Hp. 1

Hp. 2

Pf. 1

Pf. 2

Vln. I A

Vln. I B

Vln. II A

Vln. II B

Vla. A

Vla. B

Vc. A

Vc. B

Cb. A

Cb. B

This page of a musical score, numbered 18, contains staves for various instruments. The score is divided into four measures, each with a different time signature: 2/4, 7/8, 3/4, 9/8, and 2/4. The instruments and their parts include:

- Flutes (Fl. 1-2):** Flute 1 has a *marcato* section in the second measure. Flute 2 has a *marcato* section in the third measure.
- Oboes (Ob. 1-2):** Oboe 1 has a *marcato* section in the third measure.
- Cor Anglais (Cor Ang.):** Part for the English horn.
- Clarinets (Cl. 1-2):** Clarinet 1 has a *marcato* section in the third measure.
- Bass Clarinet (B. Cl.):** Part for the bass clarinet.
- Bassoons (Bsn. 1-2):** Bassoon 1 has a *marcato* section in the second measure.
- Contrabassoon (Cbsn.):** Part for the contrabassoon.
- Horns (Hn. 1-3, Hn. 2-4):** Horn 1 has a *marcato* section in the second measure.
- Trumpets (Tpt. 1, Tpt. 2-3):** Trumpet 1 has a *marcato* section in the second measure.
- Trombones (Tbn. 1, Tbn. 2-3):** Trombone 1 has a *marcato, staccato, ritmo preciso* section in the second measure.
- Tuba (Tba.):** Part for the tuba.
- Timpani (Timp.):** Part for the timpani.
- Percussion (Perc.):** Includes *BRAKE DRUMS* and *BASS DRUM*.
- Mariage (Mar.):** Part for the mace.
- Harps (Hp. 1, Hp. 2):** Harp 1 has a *marcato* section in the second measure.
- Pianos (Pf. 1, Pf. 2):** Piano 1 has a *marcato* section in the second measure.
- Violins (Vln. I A, Vln. I B, Vln. II A, Vln. II B):** Violin I A and B have *marcato* sections in the second measure.
- Violas (Vla. A, Vla. B):** Viola A has a *marcato* section in the second measure.
- Violoncellos (Vc. A, Vc. B):** Cello A and B have *marcato* sections in the second measure.
- Double Basses (Cb. A, Cb. B):** Double bass A and B have *marcato* sections in the second measure.

The score includes various dynamic markings such as *ppp*, *ff*, *mp*, *f*, *sfz*, and *pp*. It also features performance instructions like *marcato*, *staccato*, *ritmo preciso*, *immobila*, and *poco a poco decres.* There are also numerical markings like *OREA*, *1*, *2*, *3*, *4*, *5*, *6*, *7*, *8*, *9*, *10*, *11*, *12*, *13*, *14*, *15*, *16*, *17*, *18*, *19*, *20*, *21*, *22*, *23*, *24*, *25*, *26*, *27*, *28*, *29*, *30*, *31*, *32*, *33*, *34*, *35*, *36*, *37*, *38*, *39*, *40*, *41*, *42*, *43*, *44*, *45*, *46*, *47*, *48*, *49*, *50*, *51*, *52*, *53*, *54*, *55*, *56*, *57*, *58*, *59*, *60*, *61*, *62*, *63*, *64*, *65*, *66*, *67*, *68*, *69*, *70*, *71*, *72*, *73*, *74*, *75*, *76*, *77*, *78*, *79*, *80*, *81*, *82*, *83*, *84*, *85*, *86*, *87*, *88*, *89*, *90*, *91*, *92*, *93*, *94*, *95*, *96*, *97*, *98*, *99*, *100*.

K

♩ = 96 → ♩ = 25

121

2/4 1/4 2/4 4/4

Picc.

Fl. 1-2

Ob. 1-2

Cor Ang.

Cl. 1-2

B. Cl.

Bsn. 1-2

Cbsn.

Hn. 1-3

Hn. 2-4

Tpt. 1

Tpt. 2-3

Tbn. 1

Tbn. 2-3

Tba.

Timp.

Perc.

Mar.

Hp. 1

Hp. 2

Pf. 1

Pf. 2

Vln. I A

Vln. I B

Vln. II A

Vln. II B

Vla. A

Vla. B

Vc. A

Vc. B

Cb. A

Cb. B

pp, f, mp, sffz, sub. p, ppp, ff, p, f, strum, sub. ff, pp

grace notes slow down as well

dramatically slow down

1/4, 2/4, 3/4, 4/4

the pine hut.

Hieratic. ♩ = 25

I

II

III

129 $\frac{4}{4}$

Picc. [ORD] air pressure, tonguing p

Fl. 1-2 [à 2] Whistle tone [flz.] p

Ob. 1-2 [flz.] p

Cor Ang.

Cl. 1-2 [2/3] air pressure, tonguing [pizz.] PPP p PPP [1/3] air pressure, "bite" pressure [flz.] PPP

B. Cl.

Bsn. 1-2 [flz.] p

Cbsn. [slap tongue] sfx in p

Hn. 1-3 [à 2] slap tongue sfx in p

Hn. 2-4 [à 2] slap tongue sfx in p

Tpt. 1 harmon without stem

Tpt. 2-3 harmon without stem [palm smack] [à 2] [sfx] sfx in p

Tbn. 1 [cup] [palm smack] [sfx]

Tbn. 2-3 [cup] [palm smack] [à 2] [sfx] sfx in p

Tba. [palm smack] [sfx]

Timp.

Perc. [CROTALE] [bow speed] [TAM-TAM] [CYMBAL] [bow speed] [TAM-TAM] [bow speed] [BASS DRUM] [perform a full round over the edge part of the surface] [supercell pressure and speed]

Mar.

Hp. 1

Hp. 2

Pf. 1

Pf. 2

Vln. I A [con sord.]

Vln. I B [con sord.]

Vln. II A [con sord.]

Vln. II B [con sord.]

Vla. A [con sord.] [ST] 2/4 Vibrato, Bow pressure, Bow skewness p

Vla. B [con sord.]

Vc. A [con sord.] [AST] 2/4 Vibrato, Bow pressure, Bow skewness p

Vc. B [con sord.]

Cb. A [con sord.]

Cb. B [con sord.]

IV

V

VI

132

Picc.

Fl. 1-2

Ob. 1-2: take the reed off

Cor Ang.

Cl. 1-2: take the mouthpiece off

B. Cl.

Bsn. 1-2

Cbsn.

Hn. 1-3

Hn. 2-4

Tpt. 1

Tpt. 2-3

Tbn. 1

Tbn. 2-3

Tbn.

Timp.

Perc.

CYMBAL

TAM-TAM

BASS DRUM

5 WOODBLOCKS

2 BONGOS, 3 TOMS

Mar.

Hp. 1

Hp. 2

Pf. 1

Pf. 2

Vin. I A

Vin. I B

Vin. II A

Vin. II B

Vla. A

Vla. B

Vc. A

Vc. B

Ch. A

Ch. B

Annotations: air pressure, reed position; diaphragm vibrato; air pressure; tonguing; diaphragm vibrato; air pressure; wipe the lowest strings w/ fingertips; glass glass; Vertical bow position, Bow pressure, Vibrato; Half-harmonic, 2/4; Bow pressure, Finger pressure, Bow skewness; Bow pressure, Finger pressure, Bow skewness; Vertical bow position, Bow pressure, Vibrato; Vertical bow position, Finger pressure, Bow skewness; Vertical bow position, Bow pressure, Bow skewness; Vibrato, Bow pressure, Bow skewness; arco

Dynamic markings: *ppp*, *p*, *pp*

Performance instructions: perform a half round over the edge part of the surface

Rehearsal marks: 3/3, 5-4, 5-4, 2/3, 3-2, 2/3, 5-4, 5-4, 1, 7-6, 5-4, 10-9, 10-9, 10-9

VII

VIII

IX

135

Picc. *as fast as possible* *p*

Fl. 1-2 *highest whistle tones* *as fast as possible* *p*

Ob. 1-2 *Ob. 1-2: replace the reed* *ORD* *sfx in p*

Cor Ang. *Cl. 1-2: replace the mouthpiece* *ORD* *sfx in p*

Cl. 1-2 *slap tongue* *à 2* *sfx in p*

B. Cl. *slap tongue* *sfx in p*

Bsn. 1-2 *ORD* *sfx in p* *à 2* *ritmo preciso* *air pressure, reed position* *p*

Cbsn. *ORD* *sfx in p* *ritmo preciso* *air pressure, reed position* *p*

Hn. 1-3 *à 2* *sfx in p* *Half-closed, half-valve* *diaphragm vibrato, air pressure* *p*

Hn. 2-4 *à 2* *sfx in p* *Half-closed, half-valve* *tonguing, air pressure* *p*

Tpt. 1 *ORD* *sfx in p* *air pressure* *fluz.* *p*

Tpt. 2-3 *à 2* *ORD* *sfx in p* *air pressure* *fluz.* *p*

Tbn. 1 *ORD* *sfx in p* *à 2* *ORD* *air pressure* *fluz.* *pp* *PPP*

Tbn. 2-3 *ORD* *sfx in p* *à 2* *ORD* *air pressure* *fluz.* *p*

Tba. *ORD* *sfx in p* *fluz.* *PPP*

Timp. *II, I* *sfx in p* *L.v.* *PPP*

Perc. *BRAKE DRUMS* *sfx in p* *TAM-TAM* *mm* *L.v.*

Mar. *sfx in p* *pp dolce*

Hp. 1 *A# G# F# E#* *B# C# D#* *A# E#* *sfx in p*

Hp. 2 *E#* *sfx in p* *G# F#* *ppp* *ritmo preciso* *p* *PPP*

Pf. 1 *ben marcato* *the edge of the glass briefly touches the string* *sfx in p* *2da*

Pf. 2 *pp dolce* *con sord.* *2da*

Vin. I A *ORD* *Timbral alterations start here. Vibrato, Bow pressure, Bow skewness* *p*

Vin. I B *ORD* *Timbral alterations start here. Vertical bow position, Bow pressure, Vibrato* *p*

Vin. II A *ORD* *Timbral alterations start here. Vibrato, Bow pressure, Bow skewness* *p*

Vin. II B *ORD* *Timbral alterations start here. Vertical bow position, Bow pressure, Vibrato* *p*

Vla. A *ORD* *Timbral alterations start here. Vibrato, Bow pressure, Bow skewness* *p*

Vla. B *ORD* *Timbral alterations start here. Vertical bow position, Bow pressure, Vibrato* *p*

Vc. A *ORD* *Timbral alterations start here. Bow pressure, Finger pressure, Bow skewness* *p* *pizz.* *PPP* *PP* *p* *PP* *PPP*

Vc. B *ORD* *Timbral alterations start here. Bow pressure, Finger pressure, Bow skewness* *p* *pizz.* *PPP* *PP* *p* *PP* *PPP*

Cb. A *ORD* *Timbral alterations start here. Bow pressure, Finger pressure, Bow skewness* *p* *ORD* *3/4* *1/4* *Bow pressure, Bow skewness, Vibrato* *sfx in p* *PP*

Cb. B *ORD* *Timbral alterations start here. Bow pressure, Finger pressure, Bow skewness* *p* *ORD* *3/4* *1/4* *Bow pressure, Bow skewness, Vibrato* *sfx in p* *PP*

VITA

Turkish composer Yiğit Kolat, D.M.A (b. 1984), described as “a voice of integrity and vision,” has garnered international acclaim for his compositions. In 2013, his Concerto for Piano and Orchestra was a finalist for the Queen Elisabeth Competition in Belgium, and his work Echoes of Tinder premiered in Seattle by the Talea Ensemble. In 2012 he was awarded the Second Prize in the 7ème Concours International de Composition Henri Dutilleux, chaired by H. Dutilleux, one of the most prestigious composition competitions in the world, and he was selected as a winner for the Nieuw Ensemble's Turkish Composer Competition, with premieres in Amsterdam and the Hague. Other prizes include First Prize in the Dr. Nejat F. Eczacıbaşı Composition Contest (2008), The Tennessee MTA Composer of the Year Award (2009) and Greater Memphis MTA Composer of the Year Award (2009). In December 2014, Kolat was announced as a finalist for the Toru Takemitsu Competition. His new work for orchestra, [difeκās], will be premiered by the Tokyo Philharmonic in May 2015.

His works have been performed by some of the leading artists and ensembles in the US and abroad, including the Solistes de L'Orchestre de Tours, Pascal Gallois, and Donatienne Michel-Dansac (France); The Nieuw Ensemble, The Black Pencil Ensemble, and The Duo Mares (The Netherlands); Talea Ensemble (New York), The Argento New Music Project (Columbia University), The Athelas Ensemble (Denmark), Inverted Space (University of Washington), the Presidential Symphony Orchestra of Turkey, and Peter Sheppard-Skaerved and Aaron Shorr, (Royal Academy of Music).

BA, MA—Hacettepe University State Conservatory in Ankara, Turkey. MMus—University of Memphis. Received his Doctorate of Musical Arts from the University of Washington (2015) under the tutelage of Joël-François Durand.