

## gesture >> texture

### spectro-morphological elements and structuring processes present in *ay'tik (we)*

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#### introduction

During the spring/summer of 2002, I completed the composition of *ay'tik (we)*, a piece commissioned by 'COMA' (Contemporary Music Making for Amateurs) for its 'voices' workshop, to be directed by Frances Lynch during the 2002 summer school. The piece, scored for any large number of voices plus percussion, was first performed by 'coma voices', conducted by Daryl Runswick, on the 26<sup>th</sup> of July at Bretton Hall, Wakefield.

This paper will attempt a dual purpose, the first of which is to analyse and describe certain processes that are (hopefully) audible in this work. Having set myself this task, an immediate discomfort arises: to what extent will I be able to separate my own subjectivity and intentions from the actual perceivable sonic results? - results, that is, which are perceivable by anyone other than myself. This is an unavoidable problem when composer and analyst are the same person. It is true, however, that this sometimes might not be considered a problem at all, but somewhat seen as an advantage, an ingredient adding a particular appeal to the analysis: in this case, I will accept the insurmountable job of pretending objectivity.

To achieve this, my *modus operandi* will simply be to discuss and then apply certain analytical tools of which I was *not* consciously aware of during the composition of *ay'tik*; in other words, to analyse my music using theoretical artefacts brought forward by other composers. And this brings me to the second purpose of this essay, namely: the discussion and application of the concepts involved.

My chosen tools for the de-composing of *ay'tik* are two of Denis Smalley's spectro-morphological and structuring descriptors, as explained in his essay 'Spectro-morphology and Structuring Processes'<sup>1</sup>: firstly, the term defined as 'spectral typologies'; secondly the concepts of 'gesture and texture'. I should also mention that Trevor Wishart's<sup>2</sup> definition of ideas such as *landscape* and *streaming* are – if not explicitly apparent – intrinsically present in my theoretical approach.

With these instruments in hand, I hope to study my work through some sort of 'alien' sensibility, and hence separate myself as much as possible from my own intentions, thus 'testing' the music with analytical tools devised for and with other music in mind.

#### an overview of *ay'tik (we)*

The piece could be broadly described as an aural study of 'the scream' in its multiple registers: the scream as subjective, intimate gesture, the scream as socio-

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<sup>1</sup> Denis Smalley, Spectro-morphology and Structuring Processes, in Simon Emerson ed., *The Language of Electroacoustic Music* (Houndmills RG21 2XS and London: Macmillan Press, 1985).

<sup>2</sup> Trevor Wishart, *On Sonic Art* (York: Imagineering Press, 1985).

political metaphor, the scream as musically viable sonic texture, and so on. As suggested both in the programme note and as written on page (i) of the score, *ay'tik* aims to “accomplish a collaborative process between the group of individuals who agree to realise it” - both concepts *collaboration* and *process* being structural to the whole work; the latter is summarised thus (roman numerals refer to movements):

1- the scream

(i) *sound*: non-verbal screaming articulated in 4 different modes (overall texture: soft/still >> loud/busy)

*action*: individual call/ response >> recognition >>gathering

(ii)-(iii) *sound*: verbal screaming, same 4 modes (chaotic/loud >> rhythmic/loud >> rhythmic/soft)

*action*: support, re-grouping, organisation, first articulation of metaphors through the uttering of chosen texts

2- the metaphor for hope

(iv)-(v) *sound*: choral singing, rhythmic >> still

*action*: towards stasis

(vi)-(vii) *sound*: drone, responsorial singing, improvisation

*action*: the search for a radically different beauty through improvisation of harmony and timbre

The philosophical and political source of the ideas which the performance mechanisms present in *ay'tik* intend to represent spring from John Holloway's book 'Change the World Without Taking Power'.<sup>3</sup> This socio-political work, as described on its back cover, is an enquiry on 'how can we reformulate our understanding of revolution as the struggle against power, not for power', a point of view which has, in the Zapatista uprising of Chiapas, in South-East Mexico, its clearest example.<sup>4</sup>

Holloway explains in the first chapters how 'the scream' as negation of *what is*, if pointing towards a certain *hope of what can be*, is a perfectly acceptable political stance *per se*, a starting point that does not need to provide any alternatives explaining what that *can be* explicitly consists of. In other words: we don't need to produce a utopian substitute in order to negate a state of affairs we feel is wrong. The meaning of power is also more deeply analysed through its various manifestations, either as enabler or restrictor of *doing*, whereas 'power-to is a uniting, a bringing together of my doing with the doing of others, the exercise of power-over is a separation' (ibid, p. 29).

My composition intends to depict this stance in a linear way: by explicitly transforming the primal, raw, *scream-as-point-of-departure* with which the piece starts, gradually through the delivery of texts from the Zapatista rebel army, to the call and response in the Tojolabal language of South-East Mexico (as the chosen metaphor for denoting 'hope') and the final return to the starting point using timbre as a means of both experiencing and conveying the idea of *beauty-in-difference* (*beauty* as a form of *struggle*). Performers are expected to keep making real-time decisions involving different members of the group, and to rely on each other's sounds in order to mould their own. Space is used symbolically (and literally) to represent a certain circularity within this journey, intended to somehow weaken, if not nullify, the feeling of ending, or closure, which would otherwise contradict Holloway's thought in the last paragraph of a book 'that does not have an ending. (...) Nothing in this book has changed the horrors of the society in which we live. (...) The scream continues' (ibid, p. 215)

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<sup>3</sup> John Holloway, *Change the World Without Taking Power* (London: Pluto Press, 2002).

<sup>4</sup> The Zapatista movement's philosophy features extensively in Holloway's book. Holloway, a Professor in the Benemérita Universidad Autónoma de Puebla, is also a collaborator in the movement's magazine 'Chiapas'. It is not difficult to guess that this ideological influence is a two-way correspondence.

## an introduction to Denis Smalley's 'Spectro-morphology and Structuring Processes'

The introduction of Smalley's article already provides me with three links, or justifications, for the use of a spectro-morphological analysis of *ay'tik*. The first justification comes with Smalley's account that 'Spectro-morphology is an approach to sound materials and musical structures which concentrates on the spectrum of available pitches and their shaping in time' (ibid, p. 61); though specifically arising from the development of electro-acoustic music, this approach is perfectly appropriate for the analytic exploration of any sound material emerging, amongst other twentieth century Western musical currents, from 'atonality, total serialism, (and) the expansion of percussion instruments (which) all contribute to the recognition of the inherent musicality in all sounds' (ibid, p. 61). By using, and hence recognising, a sonic event traditionally not considered to be a carrier of any aesthetic 'value' (the scream) as viable musical material *ay'tik* could, I think, be considered within this 'new tradition'.<sup>5</sup>

I find a second justification when, after discussing how the nature of traditional instruments will somehow always confine the musical possibilities to the harmonic terrain (in spite of the intentions to do otherwise by the use of, say, extended techniques), Smalley notes that 'The voice, because of its intimate human links, can never fade from musical usage.' (ibid, p.62). I think that 'can never fade away' can be read as 'can never fade away *even if subjected to extreme transformations*'; I will not discuss if a scream is or is not an extreme transformation (or deformation) of the voice: it is obviously a non-traditional, certainly non-tonal, use of vocal sounds within a musical composition.

I claim a third link in Smalley's discussion of the Schaefferian concept of *reduced listening*. This is described as an aural investigative process that needs to temporally ignore the source of a particular sound. Smalley exemplifies that 'in trying to describe the sound of an approaching car [a human being screaming] we should have to forget that it is a car [a human being] and ignore everything associated with 'car-ness' ['human-ness'], confining our aural observations to discovering how the spectrum of the sound changes in time' (ibid, p. 63, my brackets). Although a reduced listening in the context of the screaming in *ay'tik* will, I think, be of much difficulty, the fact remains that a scream *is* a sound and hence, in theory at least, conceptually separable from its source<sup>6</sup> - and this difficulty, in any case, provokes a build up of tension I have consciously brought into the composition. To this tension, caused by the near-impossibility of the listener to abstract the spectral, textural components of such a strongly gestural event as a scream, I shall return to in the final section of the paper, when discussing the structural and expressive functions of *gesture-framings* and *texture settings* within the work.

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<sup>5</sup> The 'old tradition' would be represented by 'tonality with its metrically organised harmonic and melodic relationships' (ibid, p. 61); Smalley thus describes a 'historic bifurcation' in twentieth century Western musical language.

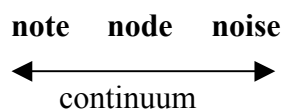
<sup>6</sup> Smalley makes an issue about the composer being able, through skilful manipulation of the sonic material, to draw the listener's attention to the abstract, rather than the referential significations of the sound in question.

With both the piece and the essay introduced, I will now focus on the first analytical aspect presented in the latter, specifically what Smalley calls ‘spectral typologies’, and subsequently see its relevance in the former.

## spectral typologies

By using the term ‘spectral’, Smalley brings forward a categorization that effectively ‘encompasses the totality of perceptible frequencies’ (ibid, p. 65), describing a frequency type in which the traditional distinction between ‘pitch’ and ‘timbre’ no longer stand.<sup>7</sup>

Smalley provides a description of what he calls the *note to noise continuum*, a totalising frequency band containing three reference points (I would say areas) for defining three spectral types: *note*, *node* and *noise* (figure 1).



*figure 1: note > noise continuum*

The *note* type, which concerns the perception of discrete pitches, is further subdivided into three categories: *note proper*, *harmonic spectra* and *inharmonic spectra*. The *note proper* defines the use of pitch in its traditional sense, in which the fundamental of the harmonic series acts as the main carrier of information, as it does within the tonal system (or, I will add, also within the serial and any other pitch-based harmonic organisation); Smalley notes the ‘overriding primacy of note perception both as a natural and a cultural phenomenon’ (ibid, p. 66). As the ear is drawn to the spectral qualities of the sound, away from a clear identification of the fundamental as the central hierarchy, the *harmonic* or *inharmonic* qualities of it come to the foreground – the latter case being exemplified by the sound of percussion instruments (or any sound whose harmonic components do not possess a simple ratio, i.e. are not related to the harmonic series), the former by that of sustained (generally low) pitched sounds in which we start noticing the dynamic behaviour of its harmonic envelope; I will include as a case of *transition* between harmonicity and inharmonicity, the sound of metallic percussion and bells.<sup>8</sup>

We are aurally confronted with the *node* type when the sound ‘resists pitch identification’ (ibid, p. 67). The sound of a cymbal at a distance, and the unified, non-pitched compactness of a note cluster provide examples of nodal spectrum perception.

*Noise* spectrum perception involves, together with the impossibility of hearing any internal pitch structure whatsoever, which tends to become of a granular nature, the shifting of focal aural strategy, through a buffer zone named *pitch-effluviuum* in which the ear is forced away from the parsing of internal pitch activity, towards the awareness of external shaping drive. Natural models of noise spectrum are present in the sounds of the wind and sea.

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<sup>7</sup> At this stage only a preliminary description is given: due to its dynamic nature, spectral behaviour is perceived through time, and therefore spectral typologies cannot be fully discussed without an account on morphology and motion, which is provided later in the paper.

<sup>8</sup> The pioneering FM sounds explored by John Chowning in *Turenas* (1972) come to mind as a beautiful example of continuous harmonic/inharmonic spectrum manipulation (ref: Wergo WER 2012-50).

## spectral typologies present in *ay'tik*

I would not say, looking at the global structure of *ay'tik*, that the passing from 'noise to note' is achieved through the pitch-effluvium continuum. Though the general shape of the piece does tend to have that single purpose direction: from *the scream* (movements i, ii, iii) towards the *metaphor for hope* (movements iv, v, vi, vii) it does follow a certain gradual spectral transformation: starting with non verbal screaming (say, at the *node/noise* end of the continuum), through verbal, chaotic shouting, to unpitched, half-whispered, rhythmic delivery (still containing white and pink noise qualities (I would say at the *nodal/note- inharmonic spectra* area), arriving in movement v (*towards hope*) to the first sounds identifiable as pitched (now at the *note proper* end of the continuum). In spite of this general route being quite clear, the different stages in the overall process are discernibly scaled, rather than continuous<sup>9</sup> (figure 2). And, as I understand it, linearity is a *sine qua non* condition for spectral articulation: as I said earlier, perception of spectral behaviour is an inside-time phenomenon and such should be its articulation. Thus a conceptual (and perceptual) distinction between *spectral manipulation* proper and mere *timbre variation*, rather associated with models of *instrumental streaming* in the traditional sense.<sup>10</sup>

movements	spectral typologies
i     the scream	<i>noise/node</i>
ii     no	↓
iii    we	<i>node/inharmonic spectra</i>
iv     dignity	↓
v      towards hope	<i>note proper/harmonic spectra</i>
vi     hope	↓
vii    farewell	<i>note proper/harmonic spectra/node</i>

figure 2: global spectral typology scaling in '*ay'tik*'

Spectral transformations at local levels are a whole different matter. And it should be so: from the moment I am regarding *timbre* as a metaphorical vehicle for representing ideas as extra-musical (and unclear) as *difference*, *beauty*, *struggle*, and which contain the whole thrust of the composition, it should follow that spectral articulation of some sort *must* be present. It does, I think, but at local structural levels.

The first appearance of spectral articulation is during movement iv (*dignity*): by gradually increasing the amplitude of the rhythmic half whisper of syllables, the pink noise component of the whispering tends to become voiced, and thus, pitched (though not temperate). So, if we consider whisper as noise, there is a shifting to the nodal area of non-temperate note clusters, and back again to a pink noise spectrum<sup>11</sup> (example 1).

<sup>9</sup> The first caveat of ordering in *ay'tik* is rhythmic; if there is a transitional buffer zone from chaos to order, this resides in the rhythm, rather than the pitch, domain.

<sup>10</sup> For a detailed discussion of *instrumental streaming* see Wishart (1985).

<sup>11</sup> The effect is quite difficult to obtain linearly, as the voice tends to 'jump' from whispered to voiced emission.

iv  
dignity

11

♩ = 90 rhythmic

**women 1**  
*f declamato*  
 [1 solo] (cue)  
 we come from afar  
 (we, we are the least)  
 repeat x2 *dim al niente*

**women 2**  
 [1 solo] *f declamato*  
 we walk through time

**men 1**  
 (we, we are the least)  
 repeat x2 *dim al niente*

**men 2**  
 [1 solo] *f declamato*  
 we walk through time

**perc 2**  
 ♩ = 90  
 [1 solo] *f declamato*  
 we walk through time  
 bass drum (muted)  
 ppp

16

example 1: noise > node > noise articulation

In movement v (*towards hope*) we have an analogous colouring technique, only this time shifted from the *node* area of the continuum, to the *note proper* area: hence the gradation, instead of being continuous from-noise-to-node-(back)to-noise, happens from-note proper-to-harmonic spectrum-(back)to-note proper. The voice-production indication, *percussive* > *nasal* > *percussive*, aims to achieve this spectral modulation in a continuum, over the same number of syllables, for each performer, at every repeat of the six bar phrase (example 2). I attempted to make the text direct the singer naturally towards this by selecting the placing of syllables which would tolerate a naturally percussive ('t' and 'k' sounds) or nasal emission (diphthongs), according to the 'percussive' or 'nasal' area in the phrase (i.e. *te nek tik* allows for a more percussive voice production; *ti kui ma ya*, a rather nasal one).

This gradually builds up in a kind of 'timbral canon' manner, reaching a climax at number 19 of the score, in which every performer, while singing different melodic material on different syllables, modulate their voice production in parallel, thus reinforcing the articulation of each spectral transformation (example 3) and bringing the spectral content of the general texture to the foreground – causing what Smalley describes as a 'change in focal strategy as aural attention is forced away from charting pitch behaviour' (ibid, p. 67). The obstinate use of the tritone, by maintaining a certain harmonic fixation on to which the ear eventually stops focusing, facilitates in achieving this goal.

V  
towards hope

15

q= 120 ecstatic

percussive mp nasal

women 1  
te ne k ti k tla ui ka ti k ia ki ti kon ke ti ku i maya ti ka i mame ti k na ua tl

women 2  
tenekti ku i tikonke pame ti ka i ua ve ti k kumi ai

men 1

men 2

perc 1  
unison: centre and rim  
f mf

perc 2  
bass drum  
f mf

22

example 2: individual spectral colouring of syllables (percussive > nasal > percussive)

19

percussive nasal

ti k na ua tl sste ko mi ti k tla ui ka ti k ia ki ti kon ke ti ku i ma ya ti ka i ma me

percussive nasal

na ua tl ti k sso ke ti ku i ti kon ke pa me ti ka i ua ve ti k ku mi ai gua ri hio ti k

percussive nasal

na ua tl ti k sste ko ua ti k to ho ti kon ke ki ka pu ti k ku ka pa ti k ma yo ti ka i

percussive nasal

ma yo na ua tl ssa ua ma ti k ki ka pu ti k to ho ku ka pa ti ku i ma yo ti kon ke to ho

27

example 3: parallel build up of spectral modulation

Further into the movement, the use of lengthy modulated diphthongs such as *ua* (pronounced *ooa*) in long sung syllables are introduced - the most common

technique for obtaining a modulation from *note* to *harmonic spectra* sound production (example 4):

22

The musical score for Example 4 consists of two systems of staves. The first system features a vocal line with lyrics 'ti ka i ma me na ua tl' and a piano accompaniment with lyrics 'na ua tl na ua tl na ua tl na ua tl'. Dynamics include *p* (piano) and *mf* (mezzo-forte). The second system begins with 'al niente' and includes lyrics 'sso ke ti ku i' and 'ma yo na ua tl ssa ua ma' followed by 'ti ku i ma yo ti kon ke to ho ma yo na ua tl ssa'. Dynamics include *pp* (pianissimo) and *f* (forte). Performance instructions include 'non sync' and 'al niente'.

31

example 4: first appearances of long syllables (*note* > *harmonic spectra*)

Movement vi (*hope*) picks up those long syllables, which now construct the main sonic colour of the piece: the *note*>*harmonic spectra* modulation, presented sparsely towards the end of the previous movement, suddenly takes over as the main textural character of this one (example 5). As the pulse accelerates slightly and the Bb – E tritone opens to an E double octave, these long notes soon settle in *note proper* type of emission and aural strategy is shifted to pitch perception in the ‘old tradition’ sense. This is now a very stable texture, sung by a division of the ensemble (3 to 4 singers in each group), is punctuated with clusters (the syllable ‘ay’) and clouds (the noise ‘tik’) produced by the tutti, sharply contrasting the *note proper* general colour of the octaves (later fifths) with *node/noise* interjections of the cluster/clouds (example 6).



**VI**  
**hope**

**27** still (1 sound/breath when cond's hand points at us)

**conductor** sweep

women 1 mi

women 2 she

men 1 no

men 2 ua

perc 1  $q=80$

perc 2 [bass drum (muted)]!

39

example 5: classic note > harmonic spectra articulation in movement vi (hope)

**29**

**tutti** *mp* cluster cloud

ay - tk

sat chab chab cha - wook cha - kal sat

ki - nal ti - ke\_ hoo - ma - sa

ba\_ ba\_ ha\_ ha\_ ha\_ ssok\_

*mp* ay\_ *mf* ay\_ *mf* ay\_

43

example 6: node/noise interjections within the note proper texture

Movement vi concludes with the most explicit articulation of *note proper* typology in the whole piece: the broad A-E harmonic aggregate, into which the lengthy tritone finally opens-up, leading the piece into the last section, *farewell* (example 7).

example 7: note proper conclusion of movement vi

It is in the final movement where the contradictions between the gestural and textural elements I referred to earlier are explicitly addressed (and deliberately not solved). Before analysing its working within the section, I'll briefly describe Smalley's definition of *gesture* and *texture*.

### gesture and texture

After clarifying the 'multi-level focus' of these two 'fundamental structuring strategies' (ibid, p. 81), Smalley lists the different, if slightly opposing, attributes implied in each term. Without embarking in an account of each one these attributes (which seem, in any case, self-explanatory), a chart as the one shown in figure 3 can be drawn from Smalley's description:

gesture	texture
<i>interventionist</i>	<i>laissez-faire</i>
<i>growth/progression</i>	<i>contemplation</i>
<i>presses forward</i>	<i>marks time</i>
<i>external shape</i>	<i>internal activity</i>
<i>higher-level focus</i>	<i>lower-level focus</i>

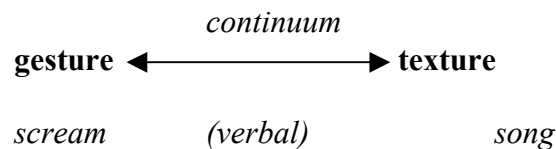
figure 3: gestural v textural attributes

The main difference to point out between gestural and textural sound, is the varied level of perceived human input associated with the source and modulation of the sound. Smalley grades this into *first order*, *second order* and *remote surrogacy*, according to the different levels of human-linked energy identified - as explained in page 83 (ibid):

While gesture has its origins entirely in the human body, texture is based either on the spectro-morphological detail found in the first-order surrogacy of gesture, or on objects and phenomena independent of the human body.

Now, it being obvious that the human voice can *never* be fully dissociated with its human source, unless extremely manipulated through electronic means, it is nonetheless possible, I believe, to gradate its association with verbal human *utterance*, and hence apply the diverse surrogacy grades at a lower focal level (i.e. *within* the human voice realm) and in doing so, underscoring and articulating the gestural/textural qualities of the sound without the need of divorcing it from its human-body source. As a result, the aural dichotomy I was mentioning before takes place: provided the appropriate spatial/temporal setting has been prepared, the listener will effectively focus her aural attention on the textural aspects of the sound *while still being aware of its human source*.

How can this be aurally organised? Imagining a gesture>texture continuum, I would say that the human scream is at the gestural end of it, while the harmonic spectra/note proper typologies implied in ‘singing’ can be placed at the textural end of the line. Verbal utterances, while screamed, spoken, and suchlike, can be graduated in the buffer zone (figure 4).



*figure 4: gesture>texture continuum of human utterance*

The possibility of gradation of the gestural/textural features in human utterance has a global structural role in the composition, which I shall briefly discuss next.

### **gestural > textural process in *ay'tik***

The structural process involving these features could be described as a global cross-fade: starting from a strong gestural frame, the piece gradually lets the textural setting take over, as the scream explicitly articulated at the beginning, passes through different stages of non-verbal, verbal, spoken utterances, towards the metaphor contained in the intense, spectrally driven chanting of the last movement, *farewell* (figure 5):

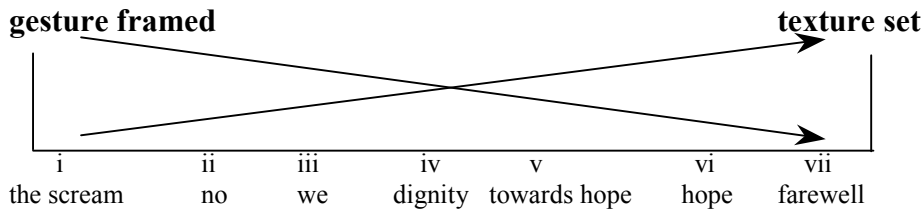


figure 5: gesture frame > texture set global cross-fade

In movement vii, the ‘metaphor for hope’ is explicitly notated with the indication ‘with a different voice’ (fig. 8).

vii  
farewell

**31**

♩ = 96      with a different voice

*thick heterophony, grace, develop ad lib; improvise parallel harmonizations*

nasal, etc

**tutti**  
(incl perc)

ha we wo mee sha\_\_ sa\_\_ ka\_\_ nook\_\_

*f*

*very expressive, improvise phrasing*

**solo**

ha we wo mee sha\_\_ sa\_\_ ka\_\_ nook\_\_

*f*

45

example 8: gestural/textural dichotomy opening movement vii

By striving to find a voice that’s not ‘hers’, the performer articulates the necessity of finding ‘beauty in difference’: through strongly modulating her presumed natural timbre, thus reinforcing the spectral qualities of the sound, and consequently underscoring a textural setting which clashes with the unavoidable gestural frame that the action of ‘distorting’ her own voice strongly conveys, tension remains un-resolved, and so does the primary negation which drove the whole piece.

once in place, we get back to our starting position

PPP

heard voices *PP* no ending... no...  
our song has no ending...

tutti

hum when head is resting on arms repeat 3-4 times al niente

*mp* sad and free

repeat dim

solo a

la han la han ay tik

51

*example 9: maintaining negativity whilst conveying 'hope' within a non-ending journey*

Whilst still articulating a quest for beauty (as a tool for 'struggle'), however maintaining a tense negativity while returning to the starting positions (figure 9), there is now a direction towards hope – nonetheless, nothing has changed: the horrors which produced 'the scream' in the first place are still real, out there. And therefore, almost verbatim with Holloway's final phrase, 'our song has no ending'.

## **bibliography**

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## **discography**

Chowning, J., *Turenas*, Wergo WER 2012-50, (1977).