Recurrence in Acousmatic Music: Creative and Analytical Possibilities

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1.   Introduction

This paper discusses the concept of recurrence within acousmatic music, and explores its application in my own compositional practice. My interest in this research stems from the desire to rationalise and understand musical structuring processes both by examining existing works, and by developing new ideas through my own composition work.

Notions of musical structuring can often be traced to the perception of recurrent phenomena within a work; in other words, recognising returning sound identities and their transformations, and drawing links between them. Sound material connections might be made through characteristics including common source associations, more subtle spectral attributes, or an evident process of progressive transformation. The recurrence approach assumes that temporal structure is memory dominated, and that the perception of sound material connections is expected. As such it is not applicable to all electroacoustic works. However, as a creative tool such an approach may bring compositional coherence through limited sound identities and the creation of structure through self-referral.

This is not to imply that this recurrence concept is new, and only applicable to acousmatic music. Much music (for example certain areas of jazz, popular and western art musics) uses recurrent musical identities and their derivations to create a sense of structure. However, in the acousmatic realm the way in which connections between sound materials are made needs to be explored and clarified, because the range of potential sound materials, and transformations, available to the composer is so broad.

In this paper I will introduce the concept of recurrence in relation to sound material identity, and then discuss its relevance to my own composition *Fouram* (2005).

2.   The Recurrence Thesis

A recurrence can be defined as a repeatedly occurring event, both in immediate proximity and over longer timescales. However, the Oxford English Dictionary definition of recurrence stimulates a deeper consideration of the concept within musical contexts. The definition appears as follows:

> 1. Return (of a thing, state, event, etc.); renewed, frequent or periodical occurrence… 2. Resort, recourse, reference *to* something…3. The action of going back mentally or in discourse *to* something.

With points 2 and 3 in mind, I will extend my view of musical recurrence to include not just returning identities, but also returning states, event types, and the perception of their derivations through transformation processes. In these cases, interesting connections between sound materials may be made. Where certain features are seen to unify various sounds, then broader groupings can be established, from which recurrences and structural significances may be deduced.

3.   Identity

In order to hear that a recurrence has occurred, the sound material must have a strong identity and be memorable in the first instance. Recurring identities may be experienced through explicit referral to previously heard instances, yet subtler connections between sounds may also be perceived through particular common characteristics, such as spectral content or a repeated morphological archetype. Such ideas are supported by the Oxford English Dictionary definition, which defines identity as:

> 1. The quality or condition of being the same; absolute or essential sameness; oneness… 2. Individuality, personality.

So, by definition the perception of a musical identity is intimately linked to recurrence; in order to perceive sameness, the phenomenon must be apprehended more than once. Furthermore, the qualities of individuality and personality are of particular relevance to

musical contexts, because they imply that sound identities must be noticeable and distinguishable.

This then raises the question of what contributes to the perception of a memorable identity in the first instance. I will now propose some factors for consideration.

3.1 Contour

Composers working with melodic materials have noted the significance of shape and contour to identity. Schoenberg's concept of the *motive* focuses on "intervals and rhythms, combined to produce a memorable shape or contour" (Schoenberg 1967, 8). Similarly, Jonathan Harvey has emphasised the need for strong melodic shape; his concern is that when material returns after a long absence "it is still recognizable, it is a strong enough shape and personality" (Whitall 1999, 22) to articulate musical form. Both Schoenberg and Harvey are concerned with the memorability of their sound materials, sustained over longer periods of time. While their musical materials may be different from those of acousmatic music, a view of identity in terms of a strong, memorable sound shape with 'personality' is relevant.

3.2 Source links

Sound recording technology allows composers to use the sounds of real world phenomena that are not traditionally considered the property of musical exploration. Connections to possible source origins may stimulate all manner of 'real world' associations, influencing both the perception of that sound's 'identity', and in turn, the interpretation of the musical work.

The strength of identity of sounds that do *not* bear strong source or cause relationships is particularly significant in the acousmatic realm. The exploration of spectromorphological features and the ambiguity of possible source association can become the subjects of musical play. For such sound materials the perception of dominant spectromorphological characteristics aids the apprehension of similarities between sounds, and the recognition of recurrent phenomena. Consequently, there may be a biasing of listening focus that

establishes the sound's identity separately from any specific source or cause implications. For example, listening may concentrate on spectral evolution or textural detail.

3.3   Temporal relations

Once sound identities are established in listening consciousness, the musical exploration of recurrent phenomena through temporal structural relationships may be discerned. Changed attitudes to timings and temporal relationships within a piece will occur once previously heard material is referred to, and returning events may act as indicators of time passing on short-, medium- and long-term time scales. These returning events will attain different musical significances depending on their relative temporal locations within a work. Temporally proximate sounds will relate differently to distant ones, and notions of identity and musical function may shift.

3.4   Sound streams

When listening to musical works, it is likely that some degree of grouping of the constituent sound materials will occur. Streaming mechanisms are well known as a result of Bregman's book, *Auditory Scene Analysis* (1990). The concept of *streaming* (Watkins and Dyson 1985), originally developed around tempered melodic materials, is useful when attempting to understand grouping processes:

> "streaming organises acoustic events into an auditory scene, which is simultaneously populated by various auditory objects. An ideal stream is formed from homogeneous features such as similar pitch height or timbre…If a set of acoustic features do not possess sufficiently similar properties, then another stream must be formed." (Watkins and Dyson 1985, 83-84).

In electroacoustic terms, an 'ideal stream' might be formed by connecting common spectromorphological features, contours, or source associations, between sound materials. However, there will be a threshold at which sound entities cease to be strongly connected, and beyond this threshold sounds may become part of a new grouping or *stream*. The apprehension of different streams will depend on the nature of that individual's listening focus (whether of detailed or broader tendency) and the retention of details to make such connections.

3.5   The perception of units

Recurrence brings with it the problematic notion of units. Sound identities imposed strongly on listening consciousness will be perceived as units to some extent, distinct from the surrounding musical texture. Schaeffer's concept of the *objet sonore* (sound object) (Chion 1983, 34) provides a useful viewpoint on perceived sound units.

However, not all musical works can be conveniently sub-divided into discrete objects. Indeed, recurrence is not solely unit-based, and significant recurrent features may be missed if such an approach is adopted exclusively. Textural combinations or features such as acceleration or fragmentation may all recur, but such recurrences are not dependent on the perception of discrete sound units. Therefore, the examination of recurrence must take a flexible view that accommodates both unit based and non-unit based phenomena.

4.   Recurrence in *Fouram* (2005)   duration 11'02

The key sound identities within *Fouram* (2005) will now be outlined, illustrating how their varied occurrences within the shifting contexts of the music affects their identities. The use of these identities to articulate the structure of the music will also be discussed.

4.1   Local level identities

Three families of sounds exist within the piece, which may be viewed as general stream identities. These are rhythmic sounds, gesturally active metallic sounds, and slowly evolving sustain material or drones. These key identities are deliberately based on spectromorphological contrasts, and are types of sounds rather than thematic or source-bonded identities. In many instances, the identities themselves are based on internal recurrent features.

4.1.1   Rhythmic identities

During the opening section, a rhythmic identity composed of short time-scale repetitions can be heard; the cyclical nature of the sound initially appears more important than any supposed source connections. The aim is to present a sound entity that gradually steals up and instils itself at the centre of listening attention over a period of time (**example 1**,

0'00 – 1'05). This sound is composed from a number of synchronous layers; the repetitions are mechanistic due to their similar temporal cycles, yet the changing spectral content and dynamic level create a sense of evolution. In this sense, the notion of short time-scale repetition soon becomes secondary to the sense of gradual evolution within the sound.

By contrast, a second rhythmic identity can be heard in **example 2a (solo)** and **2b (in context)**, occurring at 2'03. In this instance, the repetitive nature of the rhythmic looping is partnered by a static spectral content, creating a background identity. This acts as a foundation over which the musical activity within the immediate listening space takes place.

In these examples short time-scale *imitations* (in Roy's sense of the term (Roy 1996, 1998) initially characterise the identities, but their individual roles within the music are quite different.

4.1.2   Gesturally active metallic sounds

The next three examples possess metallic source associations, fast iterative instigation, and exist in close spatial proximity. They also share similar pitch contents, dynamic shaping of the iterative material, and intensity of physical instigation. Yet each exists in a different context within the piece, altering its musical significance.

In **example 3**, which like **example 2** occurs at 2'03, the metallic iterative identity makes a number of interjections into the existing rhythmic texture. In one sense, the sound attempts to seize listening attention from the established rhythmic identity. These events might be seen as a series of reiterations of the initial interjection, and as such represent a recurrent phenomenon over a short-time scale. But there are also subtle variations of the gestural instigation and spectral balance present in each instance. **Example 3a** illustrates the sound solo, while **example 3b** features the sound material in context.

Example 4 is a derivate of **example 3**. A temporally expanded and filtered version can be heard, and subtle links to the dominant features, such as metallic association, iterative texture, and the rhythmically regular dynamic swells can still be detected. The sound acts as a reminder of **example 3**, almost as an after-image of this previously experienced identity.

By contrast, in the next examples a sound identity similar to the interjections of **example 3** now acts as a climactic agent. This identity emerges from an existing texture of inharmonic sustains, and gradually becomes the dominant aspect of the musical texture through a process of reiteration and eventual hierarchical dominance. **Example 5a** is a solo version of this particular metallic identity, **example 5b** is of the inharmonic sustain material from which the first metallic, iterative swells can be heard to emerge (6'35), and **example 6** is of the final climax of the process, approximately 3 minutes later (at 9'06).

4.1.3   Pitch sustain identities

There are two main instances of sustain identities within the piece. The inharmonic material of **example 7** is characterised by an internal mobility within the spectrum, while various pitch points emerge and recede (**example 7**, 4'51 – 5'27). The absence of an explicit source reference allows attention to settle on the subtle spectral motions and contours. These motions and contours recur and vary in close temporal proximity to each other, which may be enough to instil the phenomenon into consciousness. There is also a sense of stasis as it eventually becomes apparent that the sound is not moving 'towards anything'; it exists as a point of calm following the previously active material.

In **example 8** (9'14 – 11'02), taken from the final minutes of the piece, a similar identity reappears. However, the sense of stasis in **example 7** is now replaced in the final moments of this example, and the piece itself, by an upwards pitch-based resolution. The returning sustain identity is now used to conclude the music rather than slow its progress. **Example 8** features the dynamic climax, which leads to the returning sustain material, and then the final minute of the piece.
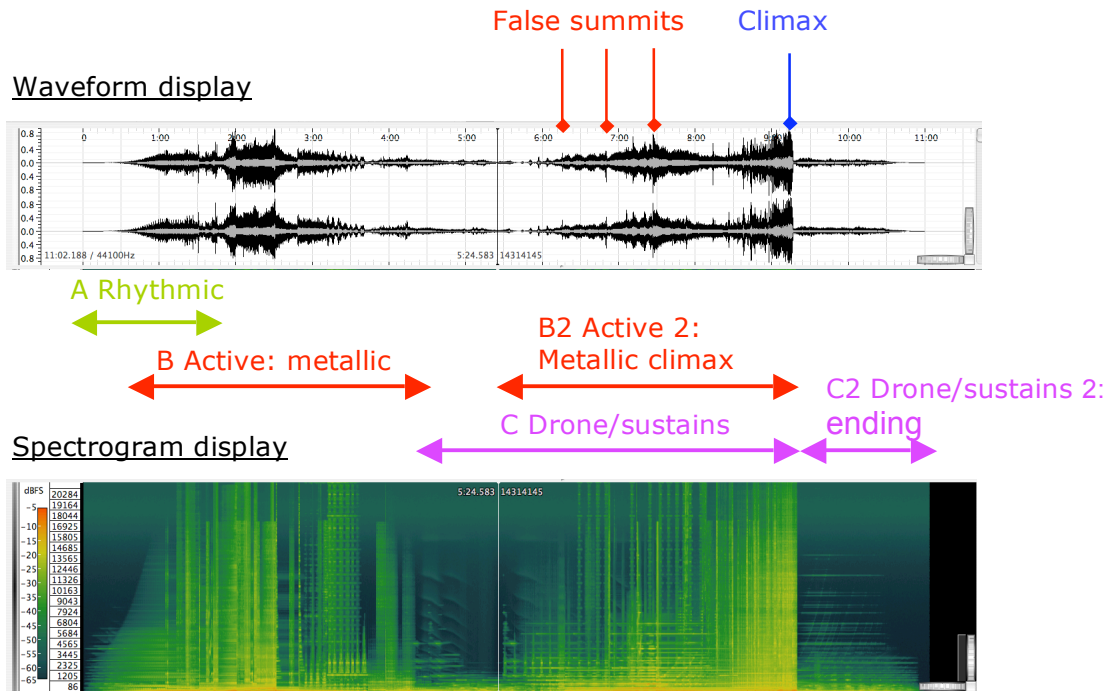
4.2   Sectional identities

Figure 1 *Overview Diagram*

The sectional identities of the piece express different states of activity. From the overview diagram, Figure 1, five sections can be seen. The A section features the rhythmic ostinato; section B features metallic, gesturally active sound materials; and section C features the first occurrence of sustaining drone materials. However, at B2 the metallic, active sounds begin to emerge and then contribute to the three false summits and a crescendo. Notably, the drone material of section C never actually disappears, although it recedes from listening consciousness as the foreground activity increases. A dynamic cut follows the dynamic climax at 9'19, leaving the drone material to exist on its own. So this piece could also be reduced to a series of textural identities: rhythmic; active; drone/sustain; active 2; drone/sustain 2. The drone based ending was selected because it provided a point of calm during which the music could slip away, mirroring the stealing-up of the opening material in dynamic terms, but contrasting in terms of texture and pitch motion.

5.   Final thoughts

Fouram is not an exemplar of recurrence composition in practice; I did not set out with a strong 'recurrent' agenda, but these concepts were developed as a result of the compositional process. I have presented this piece to explore how its stylistic agenda may rely on recurrence, in turn illustrating the concept. This piece largely involves local level recurrences and many of the identities are concerned with proximate patterning. Accordingly, my future research needs to address in greater detail more far reaching and temporally distant recurrences, and how these can be used in compositional practice.

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Discography

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