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Javier Alvarez, Rhythm as motion discovered

This paper deals with structure and time. Structure, in how a piece of music might be structured to achieve a certain effect, in particular, the effect of “motion”; and time, in how time is experienced, how the experience of time might be manipulated, and how this manipulation interacts with structure.

One might cut to the heart of it all with this quotation:

“Since my first experiences with rhythmic objects, it has seemed very natural, if sound objects were short, self contained events, to articulate them into larger phrases and up to a large structural status by means of repetition.”

Here Alvarez is describing the process of composition via repetition. Composition is, of course, a general process, and one that can be achieved in other domains by other means. For example, one might compose a picture by including in it a diversity of elements: a woman, a bowl of fruit, a tub of water. In such an example the nature of the composition is spatial. One might also compose the units of a computer program, in which case the composition is logical.

In the latter example (and perhaps the former; I’ll have to think on this) composition is a tool to reduce complexity, not because there is anything inherently wrong with complexity but because the human brain has a finite capacity to deal with it. What “dealing with it” means will depend on the nature of the domain. Alvarez says:

“Our appreciation of temporal structures is determined by the limits of what we can represent in memory [...]”

With regard to music, “dealing with it” means being able to appreciate it. What are the extremum within which one can appreciate musical structure? There are likely several components to the answer. The first is biological: working memory resources are limited. One can only grasp the structure of what fits into one cognitive mouthful. This, of course, begs the question: how much can fit? This leads to the second component: expertise.

Structure can become familiar, and turn from chaos to pattern. Pattern is information, and information can be compressed. In the psychological literature this is called “chunking” and the effects are well known, if not the exact neurological underpinnings. The rule of thumb is 5 plus or minus 2. So a piece of music might be inscrutable to a novice as a series of 100 notes, but to an expert it is 5 sequences of 20 note chunks, which are themselves five sequences of 4 note chunks. In this manner a novice and an expert extract completely different chunks from the same atoms.

There is a relationship between chunks and information, and information and pleasure. This was formalized in vision by Irv Biederman in a paper last year (**Biederman, I., &**

Vessel, E. A. (2006) Perceptual pleasure and the brain. *American Scientist*, 94, 247-253) but has, I think, a more general application, which is this: people take pleasure in structure – any kind of structure – after the point when structure can be identified, and before the point when it becomes tedious. There’s a sweet spot between the utterly familiar and the utterly novel, when structure can be ascertained, pattern recognized, without overloading the organism. In this way, Biederman postulates, we hunger to know (though some hunger more than others.) Alvarez elaborates a similar idea when he says:

“It was my idea to create a work where the listener was constantly struggling to understand simple pulses, yet never entirely fulfilling his desire. [...] This, in dance, is an exhilarating experience, one in which you’re always about to loose[sic] your balance, [...] one where keeping your balance *is* the poetics of movement.”

One must, of course, have one’s balance in order to keep it, but it is the symphony of dislocations that turn standing into dance, and which are its source of pleasure. These dislocations are the essence of “motion” as Alvarez terms it, and for which this paper is titled.

But what kind of dislocation? One might systematically alter any parameter, or set of parameters, and produce permutations on a pattern that generate multi-model analogues of Biederman’s perceptual pleasure. Speaking once again of music, we might expect the nature of the permutations to lend a characteristic flavor to the piece, the way the dirt comes out in the strawberries. In this article, Alvarez states his own *modus creandi*:

“For this reason, dynamic musical structures only emerge when the music engages in motion between the complex and the simple, precisely because motion defines a perceptual framework for the apprehension of timbre, shape, dynamics, and musical time.”

To my mind this seems overly limiting; perhaps in time there will be a more precise science of these things, but for now pattern is pattern. No particular dynamics are more sacred than any other.