

Digital Synaesthesia

An experimental action is one the outcome of which is unforeseen. Being unforeseen, this action is not concerned with its excuse. Like the land, like the air, it needs none.

- John Cage, *Composition As a Process*

Separation itself is part of the unity of the world...

- Guy Debord, *Society of the Spectacle*

One simple definition of aesthetics might be: the study of beauty. While obviously something that is, in specific terms, culturally in flux, beauty as defined by Webster's New Collegiate Dictionary is that "quality or aggregate of qualities in a person or thing that gives pleasure to the senses or pleasurably exalts the mind or spirits." This definition sets up a two-staged system of stimulation and perception wherein stimulation is an external feature that, when detected by the senses, triggers an internal function of perceptual qualification (What is it? Is it good or bad? (or, in the context of detecting beauty, does it exalt the mind?)). We respond to external stimuli and categorize the responses in the context of a common aesthetic environment. Something may be too bright or too loud or too mundane or, conversely, wonderfully colored or a comfortable volume or intriguingly structured, all within a context of individual sensory capacities (physical, emotional and intellectual) and environmental and cultural norms (American broadcast television standards find nudity unacceptable whereas the Classical Greeks found it the height aesthetic representation).

Synaesthesia, again in Webster's, is "a subjective sensation or image of a sense other than the one being stimulated." Another way of thinking about it is multi-sensory perception from a single stimulus. There are many fascinating instances of people who are considered synaesthetes. Some see specific colors associated with hearing specific pitches, thus augmenting their ability to identify the pitch. A. R. Luria famously presents in his book, *The Mind of the Mnemonist*, the case of S, a man who became intellectually and socially dysfunctional due to an overwhelmingly pronounced synaesthesia that produced in him, for every stimulus, a potential flood of memories or perceptual responses. S notes, for example, that the clanging of a trolley bell produces pain in his teeth,

or “If I read when I eat, I have a hard time understanding what I’m reading – the taste of food drowns out the sense.”

This kind of multi-sensory stimulation has a strong history as an artistic pursuit. As the term has been traditionally used, artistic synaesthesia has a goal of providing multiple complementary manifestations of a single concept or expression. In this thinking, theatre exhibits some pronounced synaesthetic elements in its design with costumes, sets, etc., all in the service of the essence of the production. Sound and dance have collaborated similarly over the centuries, forming an almost symbiotic artistic bond. Film scoring comes to mind as an example of a predominant contemporary version of this form of synaesthetic composition (though, as in theatre, overall production design in film works in this way as well). The composer is charged with creating an alternate informational model to transmit the ideas or emotions of a scene, using music to simultaneously amplify the script and action to the audience. This model of artistic synaesthesia, however, is problematic as it becomes an inversion of our definition. What is actually being constructed for the audience is not a diversity of *perceptions* from a single *stimulus*, but instead, a pointed collection of *aesthetically driven stimuli* reinforcing a single *idea*, a single *artistic perception*. We all will culturally understand that the overly consonant string section and the slightly foggy lens are indicating “tenderness” for us as the hero and heroin discover their mutual affection. Compositionally, the perception comes first, then the carefully contrived means of stimulation.

Synaesthetic composition, as the term has been used, is a model for unity or conformity wherein the various artistic mediums reinforce one specific telling or understanding via their diverse channels. This one-from-many model directly contradicts our original premise of the synaesthetic experience. The synaesthete lives in a many-from-one world of experience where multiple perceptions (such as simultaneous sensations of color and pitch) are generated from a single stimulus, not one in which a variety of stimuli generate, or reinforce, a single perception. He or she experiences different senses competing with or complementing each other in a diverse perceptual episode. It is here that a very recent (by historical standards) tool for the artist might pose a new and alternate way of exploring synaesthetic composition, one that more accurately avails the composer to the original idea: that a single stimulus can be

simultaneously translated to a variety of diverse physical, psychological and cultural perceptions. That tool is the computer.

Unlike previous technologies, to do what it does (perform computational tasks) the computer reduces all incoming information (think stimulus) to a shared, common representation: numbers. These numbers are subsequently moderated by mathematical processes and reconstituted once again as outgoing information. Language, perhaps the closest previous model for parsing out information, is not nearly as formal or absolute in its procedural requirements; the syntax of the computer accepts no variation or digressive individuality. This computational process formally disconnects the original *context* of the information coming in from that of the information later coming out. The computer doesn't care about information as functional source material, only as data to be manipulated. The transference from analogue information (such as a sound wave (again, think stimulus)) to a packet of numbers *representing* that information neutralizes the information modally. The table of numbers created is not specific to the (in this case, sound) stimulus, but specific to the computers method of operation. A table of numbers will not be understood to be inherently audio data, video data, text data, weather data, traffic pattern data or any other kind of data until it is reconstituted as specific information in a context that can be understood or experienced by the user of the computer (such as software drawing waveforms from the numbers and hardware (amplifier and speakers) creating soundwaves in space from those drawn waveforms).

This computer-specific process of receiving information, neutralizing it and repackaging it for export allows the digital artist a new and direct method for synaesthetic composition. Even though the incoming stimulus might be a sound, which the computer then translates into a table of numbers, that table of numbers can subsequently be exported as audio information (output to speakers), visual information (output to a screen of some kind) or environmental information (controlling light, heat, air movement, etc.), or whatever else. In this way, returning to our cinematographic model of designing a "tender love scene", the information that is generated from the recorded scene itself (thinking stimulus) can potentially be "transcoded" into an accompanying sound score. By applying the table of numbers the computer created when digitizing the video (or the spoken text for that matter), an audio score can be generated using the exact same digital information (new

perception of the digitized *stimulus*). One obvious difference here is that the final artistic product will inherently lack conformity to existing cultural or compositional norms, meaning the overly consonant string stuff will not naturally occur as the result of this process. But then, it won't naturally occur in real life either, it is a convention used to steer the audience, a countermand to individualized perception.

It is here the sensual diversity of synaesthetic composition comes to life. The artistic possibilities of what might occur range across the digital universe, with all of them manifestations gleaned *directly from the initial stimulus*, like the voices of differing opinions surrounding a topic. The original stimuli are transformed into a variety of unique potential perceptions. The artist employing the techniques of digital synaesthesia is provided with the opportunity to explore the sensory diversity of competition and complementation, much as S experienced various (and often conflicting) perceptions resulting from the same stimulus. Whether the final result is dysfunctional or not is dependent on the skill, insight and goals of the artist who is regulating the process. This is indeed the from-one-many compositional model.

Almost fifty years ago, in his address *Experimental Music*, John Cage wrote (regarding the "possibilities of magnetic tape"), that "we are, in fact, technologically equipped to transform our contemporary awareness of nature's manner of operation into art." Digital synaesthesia, the from-one-many model of diversity described above, can be thought of as a way for the New Media artist to engage this Cagean prerogative and embrace a more organic compositional model. This process will also neatly provide, as a by-product, a requisite exploration of the many ways meaning is generated and inferred, both by the artist and by the culture at large. In this way, it may pose a valuable composition/design alternative to intuitively recycling and reshuffling popular cultural indicators as a means of artistic expression.

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