

Signal: An Expanded Semiotics of Periodicity (Part II)

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ABSTRACT In this extended essay I revise the semiotic concept of Signal, updating it in relation to post-phenomenological perspectives on the technical extension of human perception by mediation. I define signal as *periodicity* and trace the structure of “regular recurrence” from wavelength to percept to memory. The discussion is situated as an “expansion” of semiotics towards cognition, applied science, and post-phenomenology. Deleuzian and Peircean engagements are developed with some further comment on Ihde, Simondon, Massumi, Kant, and Heidegger in connection with the status of percept in relation to affect and concept.

11. NOTE ON DELEUZE, SIMONDON, AND IHDE

The five modalities of signal (s1–s5) have been derived phenomenologically through reflection on my own experience “at the helm” of mediation technologies. This note is to address three other sets of terms that may prove fruitful for further elaboration, albeit at diagonals or tangents away from the focus on periodicity that I argue is the primary basis for a semiotics of signal.

“Rhythms and rhythms alone become characters, become objects. Rhythms are the only characters, the only Figures.”¹ This statement of Deleuze on Francis Bacon’s paintings may suggest that Deleuze’s thought of “rhythms” is germane to a discussion of signal. On the contrary, they are more conducive to noise (aperiodicity), for clearly Bacon painted what are better-termed *noise images* than *signal images*. The very *vagueness* of what Deleuze means by “rhythm” points in the direction of noise. To take a step back from the Deleuzian enthusiasm, let’s note what a rhythm “is” (Deleuze would no doubt criticize this as ontology stepping on his ontogenesis). Rhythm in its most basic definition² is a *composite* of the following:

- **PULSE:** identical intervallic units of time, proceeding in a sequence of event densities (units within a given time) that constitutes tempo,

which can be either heard or implied

- **METER:** groupings of stressed and unstressed pulses, recurring in measures, which can be partially implied but needs to be at least partially heard
- **RHYTHM “PROPER”:** building hierarchically on the organization of pulse, tempo, and meter, rhythm consists of the actual soundings either on (synchronization) or off (syncopation) the underlying intervallic (implied or heard) units

Rhythm as *signal* (in reference to the framework developed here) would need to assemble these groupings of periodicities. Rhythm as Deleuze actually uses the term (in connection to Bacon, and forces in the universe) is aperiodicity, or properly speaking, a rhythm of noise. Deleuze defines the *signaletic* as follows:

It is a plastic mass, an a-signifying and a-syntactic material, a material not formed linguistically even though it is not amorphous and is formed semiotically, aesthetically and pragmatically.³

Visually the “plastic mass” that is “not amorphous” is enough to suggest that Deleuze is referring to aperiodicity, but what *logically* connects Deleuzian-Baconian rhythm to *noise* is this notion of the “a-syntactic” which jettisons rhythm into free time, or at least free jazz, which is nicely illustrated in a YouTube clip of Peter Brotzmann performing with Michael Zerang⁴.

Simondon’s *signaletics* is elaborated in a theoretical assemblage of individuation, autopoiesis, organism-in-an-environment, and equilibrium that is redolent of first generation cybernetics. Like Deleuze, Simondon does not connect signal to periodicity but rather (according to a somewhat standard semiotic model) to a general “material basis” of signification, which I discussed earlier.

According to the distinction between signals and signification, we will say that there is an individual when there is a process of real individuation, i.e. when significations appear: the individual is that by which and that in which significations appear, whereas between the individuals there are only signals.⁵

For Simondon, individuation occurs against the pre-individual (the non-organism) through an intermediary site

of the trans-individual (e.g., one's body, which concatenates both the pre-individual and the individual). Individuation is a never-ending process in which affective forces play off of the pre-individual character of the environment through the transductive force of affect. The notion of signal as periodicity that I am developing here does not consign signal to the pre-individual or pre-signifying status. While constitutive of signs and images, I "terminate" the semiotic character of periodicity at the level of cognitive rehearsal, which is well within the sphere of individuation. Simondon's notion of affect has a closer affinity to the effect/affect pairing above:

*Affectivity and emotivity would then be psyche's transductive form par excellence, intermediary between clear consciousness and the subconscious, permanent link between the individual to itself and the world, or rather between the relation of the individual to itself and the link of the individual to the world.*⁶

For Simondon, affect is "the ground of emotion" and is sited at the trans-individual divergence of the individual from the pre-individual, or of the organism against the environment, or to use a more standard language, subject against object (so long as we take "object" to be the environmental field. "Self" against "world" would perhaps be more apt).

*[...] the individuated being is not entirely individuated, but still contains a certain charge of non-individuated reality, pre-individual, that it preserves and respects.*⁷

Simondonian signaletics thus has features that a general media neutral semiotics of periodicity may find useful toward understanding signal existentially and in relation to other theories that take systems thinking as formative.

With respect to affect especially, Simondon's notion of the trans-individual relates signalitics to the s2 organic level. Affect clearly extends well into the organism, but is produced responsively against mediations that proceed from the s3 level of phenomenality (what I previously referred to as the *level offset* between percept and affect).

Finally, Don Ihde has used the terms microperception and macroperception to delineate the levels here described as s3–s5. Microperception is attuned to the phenomenal-phenomenological linkage, from perceptual givens to perceptual constitution of intentional objects. Microperception "focuses upon...the action and perception which occurs in our bodily or incarnate engagement with the immediate environment or world."⁸ Microperception interacts with macroperception (in the zone of s4-s5), which is more highly impacted by cultural factors. Ihde references a passage in Merleau-Ponty's *The Visible and the Invisible* that notes the cultural influences on formal (s5) perception:

*It is a remarkable fact that the uninstructed have no awareness of perspective [in art] and that it took a long time and much reflection for men to become aware of the perspectival deformation of objects...I. I say that the Renaissance perspective is a cultural fact, that perception itself is polymorphic and that if it became Euclidean, this is because it allows itself to be oriented by the system... What I maintain is that: there is an informing of perception by culture, which enables us to say that culture is perceived.*⁹

With reference to the expanded semiotics of signal argued here, we have already discussed the difference between hermeneutics and semiotics. Each discourse in historical formation has different aims: hermeneutics endeavors to elaborate through exegesis historically determined interpretive fields, while semiotics seeks

SIGNAL	LEVEL	SIMONDON	IHDE	COMMENTS
S1	Physical	Preindividual		
S2	Organic	Transindividual		"Ground" of Affects
S3	Phenomenal	Transindividual	Microperception	"Ground" of Percepts (technically extended)
S4	Phenomenological	Individual	Micro/Macro	
S5	Formal	Individual	Macroperception	

FIGURE 2I: *Five signal modes*

atemporized models that are productive of meaning across historical and cultural contexts. Mediated periodicity operates at a level of generality that is clearly not “tied down” to any particular social context, and envelopes physical, biological, technological, and subjective scales of organization in which cultural formations are not excluded. Ihde’s notion of the *interaction* between micro and macro perception should remind us that the modes (s1–s5) are not to be understood conceptually as frozen or separate layers somehow detached from each other, but rather there is necessary interaction between them.

We can tentatively relate these ideas of Simondon and Ihde to the five signal modes, which would yield the table in the previous page (see FIGURE 21). The overall concept here is of signal modes as an inter-related system, and thus should be thought *systemically* (with systems taking other systems as their environment, a basic tenet of contemporary systems theory). Systems are elements interacting to form wholes within environments. By contrast, Massumi’s discourse on affect retains postmodernist psychoanalytic resonances: “The children, it turns out, were split: factuality made their heart beat faster and deepened their breathing; but it made their skin resistance fall.”¹⁰ My view is that systems form identifiable wholes and interact with other systems as such, and that what in common theoretical parlance is called “split” or “separation” is better understood as positive differentiation or articulation. I read the “autonomic” in Massumi as a system interacting with consciousness-as-a-system rather than as physical evidence that the body is “split” in the manner that postmodern psychoanalysis understands subjectivity. Additionally, we can understand the Deleuzian difference between being in the world and being of the world. In Simondonian language: we are *of* the world *trans-individually*, and *in* the world as *individuals*, noting the strong influence of Simondon on Deleuze and Guattari, as is evident in such formulations as: “*Affects are precisely these nonhuman becomings of man...*”¹¹ [emphasis in the original].

12. THE ATTENUATION OF SECONDNESS IN MEDIA NEUTRALITY

As we will see, there is a “recessive” quality to secondness in mediation that deserves a brief discussion. In Peirce’s scheme, there is a notable “bias” toward subjectivity. Secondness is existential brute actuality, not as raw “quality” but as an “againstness” to the subject. Firstness is also existentially brute but only as potential

or quality for the perceiving subject, whereas secondness is brute towards, and with respect to, an additional object. The movement from firstness to thirdness can thus be modeled as:

- **FIRSTNESS:** subject perceives raw potentials and qualities in a self-positing “I perceive”
- **SECONDNESS:** awareness of relation, typically to an object as an external non-self
- **THIRDNESS:** subject synthesizes *for itself* some general rule or relation

Thus secondness can be understood as a detour or a midpoint in a loop or oscillation that returns the self (subjectivity) to itself:

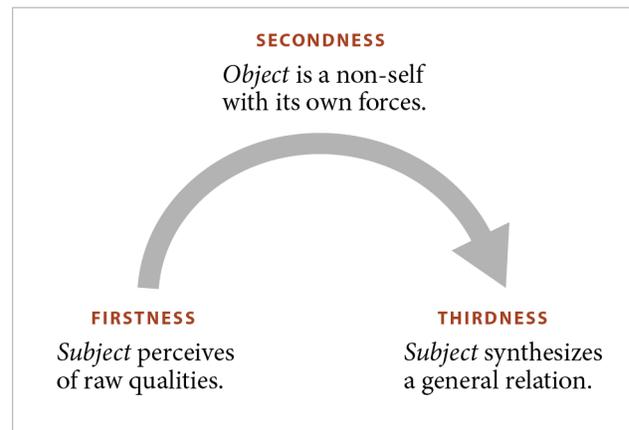


FIGURE 22

Two out of three of the categorical divisions refer to activities within subjectivity, while one (secondness) posits something against subjectivity. This means that any media object, from a Peircean perspective, will entail what we can call a *primacy of subjectivity*. Whether we take this primacy in a Kantian direction—“all objectivity is objectivity for consciousness”¹²—or a Husserlian route—“objectivity as the achievement of intersubjective confirmation and acceptance”¹³—the *objectness* of any sign will be at an attenuated remove from, and a moment in the field of, subjectivity.

For our purposes, secondness is *additionally* attenuated from any media neutral semiotics of mediation because *sinsign/index/dicisign* are necessarily *media specific*. One of the consequences of this attenuation is that a media neutral semiotics will in a sense have to “do without” secondness, or not do very much with



FIGURE 23¹⁴

it, outside of base causality or existential facticity. It also means that the firstness of iconicity (which we can expand to include likeness in general, the analogic and analog) is “what remains” when we attenuate secondness (and as will see below, this is true also of non-mimetic signs if we expand the notion of the analogic-icon to be inclusive of temporal processes rather than restrict it to spatial likeness). This primacy of subjectivity, with regards to secondness, can help us to understand such statements by Deleuze and Guattari as: “It is the affect that is metallic, crystalline, stony and so on; and the sensation is not color but, as Cézanne said, coloring.”¹⁵ However, some may criticize this attenuation of secondness (material fact, causal existential connectivity, brute opposition to subjectivity) as a failure to properly historicize or materialize media artifacts. The response to this criticism is that historicizing media objects is a hermeneutic project, not a semiotic one.

13. IMAGE PROCESSING

The next point to be addressed regards my earlier introduction of the terms *image* and *imaging* in relation to *signal* (the telos of signal is to image). Obviously, it is not the point of electronic media (signal-based media) to present us with a field of a/periodicities, mere patterns of threshold differences across luminance and chrominance, or frequency and amplitude. Electronic media do indeed present—very directly—merely waveforms—and notwithstanding the fabulous efforts of experimental media artists, the “telos” of the signal (at least if we follow manufacturers’ recommendations!) is ultimately to provide us with images (and signs, which the manufacturers do not mention, except in the ‘Warning: Electrocutation’ signs in the owner’s manual). Thus we can modify our earlier levels of Signal to take account of this Imaging function:

- s1: *Physical signal*, electrons in the circuits.
- s3: *Phenomenal signal*, signal shaped to conform to our perceptual “apparatus.”
- i: *Images*, forms of analogic-iconic likenesses playing across the screen, surface or speaker cone.
- s: *Signs*, the interpretive matrix of understanding the images, or subtitles flashing across Deleuze’s Eurocentric crystalline time images

This describes the “normal mode” of signal is to image (+sign). My distinction between image and sign synthesizes a range of distinctions in Peirce, Saussure, and Bateson amongst others (analog/digital, continuous discrete, icon/symbol, positive/negative differences). In the schema below, the term “sign” is used to refer to “negatively differentiated” (in Saussure’s sense) “symbols” (in Peirce’s sense) that are discrete and “digital” (in Bateson’s sense), whereas the term “image” will be used to connect Peirce’s icon to Bateson’s analog and a perceptual economy of positive difference. Sign and image are understood as being of different orders but interacting and inter-related. As Julian Bigelow stated at the 8th Macy Conference on Cybernetics:

*I think that somebody ought to make the very platitudinous remark that it is impossible to conceive of a digital notion unless you have as a reference the notion of a continuous process by which you are defining your digit; that is to say, the slide rule has continuous length and it has on it numbers which are digital.*¹⁶

This way of “being different and being together” of the analog and digital can be modeled signaletically as shown in FIGURE 24. It is beyond the scope of this study to explicate this synthesis; here we will address the thematic of signal in relation to analogic (iconic, resembling) and discrete symbolic (systemically embedded) signs. To be discussed in detail is the modification to the Peircean “standard model” is with regards to the trinity of index-symbol-icon as three “types” or “categories” of a sign’s relation to its object (the object relation, OR). Rather, as indexicality is directly linked to causality, and causality is a feature of physical existence in general, a signaletic perspective would model the symbolic (digital) and iconic (analog) as dependent in differing ways on indexicality. Photographs, often described as “indexes” in

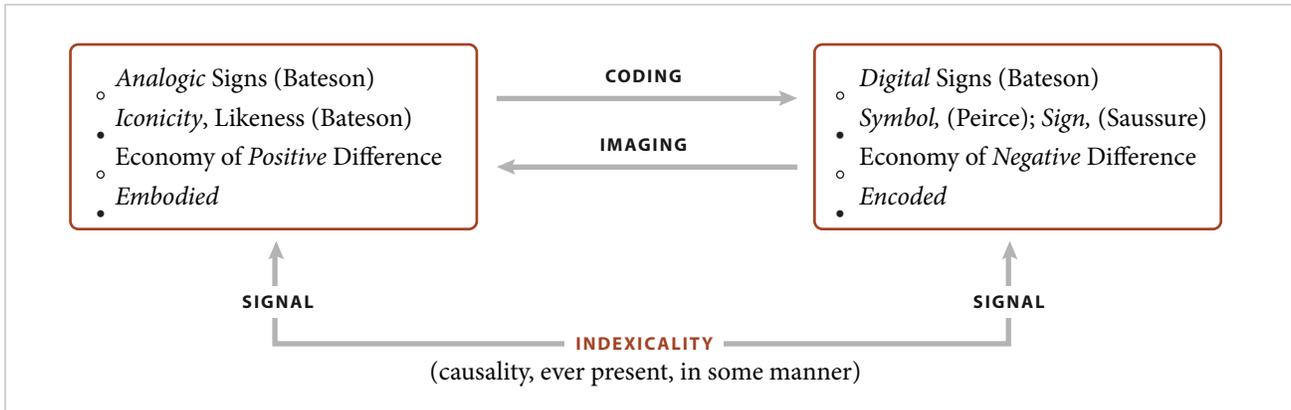


FIGURE 24

the theoretical literature are clearly also iconic. If we assume a photograph that clearly renders a subject in some way (as opposed to a splash of base or acid in the developing room and framed on the wall as a photograph), if we were to grant Peirce’s three categories of object relations, we would be left defining the photograph as *equally* indexical and iconic, being caused by x amount of light registering on a surface (sensor or film) in a causal fashion, and also resembling its subject in all ways analogic or mimetic. Similarly with a figurative painting, we can find indexicality at the level of the brush stroke, but this is merely the manner in which the iconic resemblance came into being. In other words, both painting and photograph are in some way, as real objects in the physical world and thus subject to physical laws, brought into being through causality, which ultimately is not very significant (worth noting) since the same thing applies to everything else. The indexical is a mode of secondness, meaning a relation to something through existential or “brute” actuality. In mediated sign or image, what is brutally actual is signal.

Indexicality is also a feature of the symbol, though less obviously so. I illustrate the indexical feature of symbolic signs as shown in FIGURE 25. The indexicality of symbolic signs is their linkage to a material universe, as something has caused them to appear. The example above also illustrates the symbolic relation to signal as periodicity at s4, the phenomenological level of complexity: within the range of conscious experience, the construction of the symbolic register often overlooks the regular rhythmic (periodic) order, an order that typically takes years of rote-repetitive schooling in order to make “second nature” (e.g., font, typeface, the binary of black on white, or phonemes against noise or silence) the underlying periodicities that symbols depend on

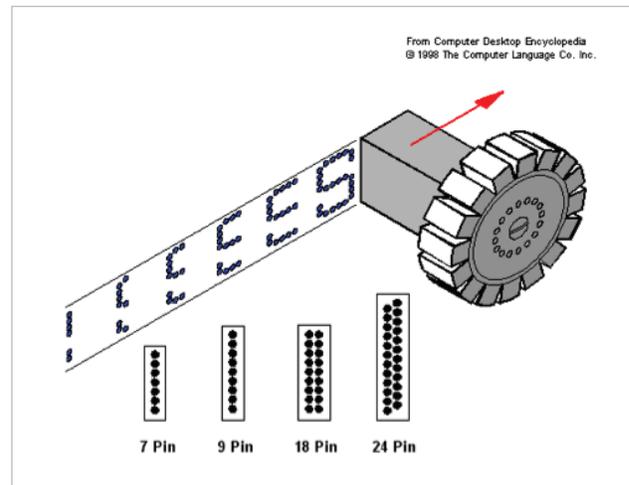


FIGURE 25¹⁷

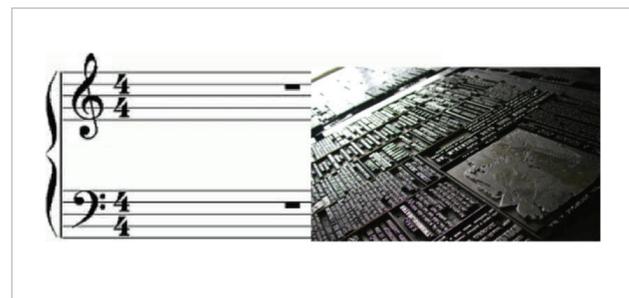


FIGURE 26¹⁸

(in order to subsequently understand them through their embeddedness in a code and so forth).

Before being subject to the “rule of interpretation” as Peirce describes (or negative difference in Saussure’s sense), symbols need to be perceived, to be embodied in some manner. In the model described above, symbols (discrete, digital, encoded) emerge out of signals, which have indexical properties (formed out of causal relations). This is not to deny that they *also* emerge from fields of negative differences vis-à-vis other symbols. However, that is not the only plane of their emergence.

This leads us to indexical signs, such as smoke = fire, tire marks on pavement = car skidding, and red lines on back = back scratching. Are there not indeed signs that are only indexical (distinct from all signs being indexical in some way)? Such signs are icons (analogues) of processes, rather than things. Peirce’s notion of the icon is limited to spatially defined resemblances. If we add a temporal dimension to analogic/iconic signs, we can include (temporal) processes as well as spatially bound entities in the field of likeness. Moreover, linking the icon to the *analog* allows for a different way of understanding the “continuity” between the sign and the referent, with the referent as either *source* of the sign. The spatial bias of iconicity is evident in his repeated use of the term *Object* in the explication of his triad (FIGURE 27 & 28):

An Icon is a sign which refers to the Object that it denotes merely by virtue of characters of its own... Anything whatever, be it quality, existent individual, or law, is an Icon of anything, in so far as it is like that thing and used as a sign of it.

An Index is a sign which refers to the Object that it denotes by virtue of being really affected

by that Object...In so far as the Index is affected by the Object, it necessarily has some Quality in common with the Object, and it is in respect to these that it refers to the Object. It does, therefore, involve a sort of Icon, although an Icon of a peculiar kind; and it is not the mere resemblance of its Object...but it is the actual modification of it by the Object.²⁰

Even in Peirce’s formulation, there is contamination of iconicity and indexicality: the index is in fact described as a peculiar icon. Above I suggested that the mere fact that a photograph is both iconic and indexical is enough to warrant a modification in terms. The difficulty in distinguishing the iconic from the indexical appears to be related to effects that can be traced to causality and temporality at larger scales. Let’s take a symbol, a sign whose meaning is determined by its placement within a general system or law. However, given time and human migration, a word changes, and the changes in its sound or use can be related not to the system against which it is interpreted, but by indeed being “affected” by new sounds, new languages, new peoples, and so forth. The symbol in a diachronic dimension will exhibit indexical traces: it will be altered not by differences internal to its initial general economy but through external influences of likenesses and causes (e.g., the formation of a new dialect out of two pre-existing ones, or the creation of an urban slang like Sheng in Nairobi, mixing Swahili and English under the influence of long crowded commuter rides and hip hop). Additionally, what appears to make indices signs is temporality, the passage of time. For instance, if I look at how a bookshelf bows under the weight of books, I could take the bowing of the shelf to be a “sign” (indice) of the books’ mass, and indeed it



FIGURE 27 & 28¹⁹

is. The problem is that similar inferences about indicity can be drawn from pretty much everything in the visual field. I could infer that the wax coating on the dining table is an indice of how smooth it is, the light reflected in it from the bulb overhead is indexed by the wax, the cabinet in the corner leaning forward slightly is an index of an uneven 100-year-old floor, and so on. Indexes become more “sign-like” with the passage of time. In the example above, remove the books from the shelf and the continuous sag in the shelf is more “like a sign” because the books are gone but their effect remains. In short, given the ever-presence of cause and effect in the environment, or even in the universe as such, its usefulness as a category of sign is undermined by the fact that every other kind of sign has some indexical component. However, if we expand the field of the analogic to include processes, and note causality as a feature of existence in general, we can then investigate indexicality in either iconic-analogic signs, or symbolic-digital signs. I am not dismissing indexicality, but given its limited value and inherent confusion with the Icon, I am arguing to modify the triad into a dyad (icon/symbolic) with shared and constitutive indexical characteristics. In short, expanding the iconic/analogic to be inclusive of processes and forces and less fixated on Objectness seems to solve these difficulties (that cause and effect are everywhere and affect everything anyway).

Even if this relocation of indice and expansion of the capacities of icon to process were merely hypothetical, I would suggest we could make distinctions among “categories of meaning in general” (which Peirce’s typology addresses) and forms of mediation meaning. We mediate through specific technologies and techniques of mediation—we do not make use of every existent thing around us in the world as a system of mediation (not even interior design does this, because objects placed to communicate a look, feel, or style continue to go on saying the same thing—“all these objects are modern,” “all these objects are Italian countryside” etc., and systems of media are such because they are capable of saying many different things). Every piece of furniture in my living room is an index of the force of gravity exerted upon it (in their uprightness, stability, inertia etc.). If my living room were on a space station, the movement of my furniture across space would be an indice of the force I exerted in touching it. The scope of mediation potential with mere indexicality is limited. In *Art as Experience*²¹ John Dewey notes that a man who punches someone out of anger is not “expressing” his anger, but rather merely giving in to an “impulse.” One may express anger by

yelling (analogic register) or cursing (symbolic register) but punching is immediate (impulsive, not expressive) and in fact indexical (affecting, leaving marks of causality) and devoid of mediating potential (which is also why war, for example, is often the end result when “mediation” breaks down). For an example of how restricting our modification of indices to meaning in forms of mediation (as opposed to meaning in general, which is intermixed with causal forces in general), consider the application of this modified model to Nam Jun Paik’s installation *Magnet TV* (1965):

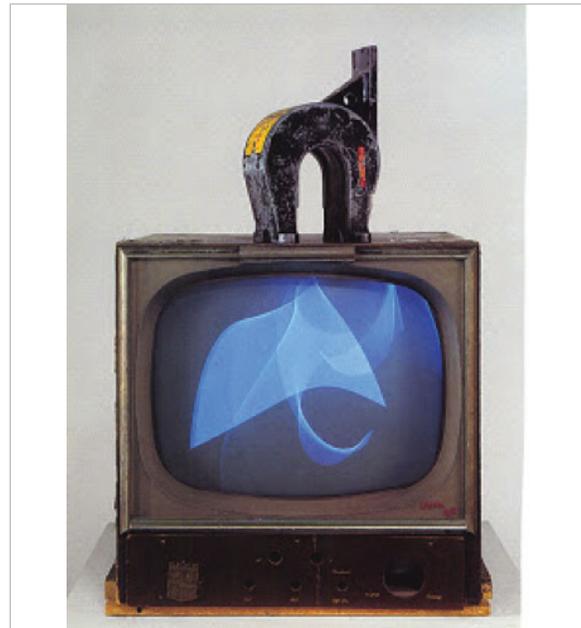


FIGURE 29²²

Consider two possible statements about the semiotic status of the image here:

- The image is an index of the magnetic forces exerted on the television by the magnet.
- The image is an analogue (or icon) of the forces exerted on the television by the magnet (and caused by the magnet).

There is not much difference between these two statements. The second is longer due to the parenthetical words, which remind that indexicality is still in the model (causing the icon) and that I am linking Peirce’s icon to Bateson’s analogic communication (to be discussed elsewhere). Moreover, if this artwork featured little flecks of metal stuck to the actual magnet, this adherence would

also be an indice of the magnetic forces. In which case, it would be more interesting in fact to understand the image in the television as an analogic representation of magnetic forces, rather than merely an (additional) indice.

14. EFFECTS FOR AFFECTS

Images, as Icons (resemblances, analogues) are in the modality of Firstness in Peirce's schema. There are many modalities of first-second-thirdness throughout the range of Peirce's thinking in a variety of areas, depending on what field is under review. In the following I have put quotation marks around the headings that Peirce did not supply, indicating what the general category might be to a contemporary reader, and I have summarized or paraphrased his definitions:

SEMIOTICS:

Firstness = icon
Secondness = index
Thirdness = symbol²³

GENERAL LOGIC:

Firstness = the conception of being independent of anything else
Secondness = the conception of being relative to something else
Thirdness = the conception of mediation, bringing the previous two levels into a relation

AN EXAMPLE PEIRCE GIVES:

Firstness = the origin of things, leading nowhere
Secondness = the end of things
Thirdness = mediating between the origin and end of things

“ANCHE”:

Firstness = the One, or Arbitrary Variety (which refuses secondness)
Secondness = the One vs. the Many (firstness posed against a manifold)
Thirdness = trying to make some kind of rationale or dialect of the one vs. the many

PSYCHOLOGY:

Firstness = feeling
Secondness = sense of reaction
Thirdness = general conception

BIOLOGY:

Firstness = arbitrary sporting

Secondness = heredity
Thirdness = Process of fixing the accidental characters

“HABITUS”:

Firstness = chance
Secondness = law
Thirdness = tendency to take habits

“EVOLUTION”

Firstness = mind
Secondness = matter
Thirdness = evolution

Such are the materials out of which chiefly a philosophical theory ought to be built, in order to represent the state of knowledge to which the nineteenth century has brought us. Without going into other important questions of philosophical architectonic, we can readily foresee what sort of metaphysics would appropriately be constructed from those conceptions. Like some of the most ancient and some of the most recent speculations it would be a Cosmogonic Philosophy. It would suppose that in the beginning—infinately remote—there was chaos of unpersonalized feeling, which being without connection or regularity would properly be without existence. This feeling, sporting here and there in pure arbitrariness, would have started the germ of a generalizing tendency.²⁴

We will not follow Peirce into the “Cosmogonic” (since Big Bang theory has already addressed this), though I do take a certain cosmogonic satisfaction in the fact that Peirce identifies “regularity” (what I have referred to as periodicity and Signal in general) as a precondition for existence (and the end of chaos as such). To return to our themes of signal, icon, and imaging, I propose that signal processing is a good fit for what Peirce elsewhere calls the “hypoiconic” (the firstness of the icon, but which sounds even cooler because it translates as “under iconic” as in hypodermic...). Signal processing as “hypoiconic” gives us that nice feeling of getting “under” the image and working it in a hypo manner (that levels s1–s3 imply). But let's gather up all of Peirce's kinds of (domain-specific) firstnesses above and see if this may shed any additional light on my discussion about signal processing:

- Iconicity
- The conception of being independent of anything else
- The origin of things, leading nowhere
- The One, or Arbitrary Variety (which refuses secondness)
- Feeling
- Arbitrary sporting
- Chance
- Mind

This is a useful set of descriptors for varieties of firstness that may apply to signal processing, and be adopted as an aesthetic, ethos, or manifesto for the plasticity of electronic media. Indeed, in a sense we find everything here that we need: the relation to analogic orders (perceptual magnitudes rather than codes or logic), a disregard for surrounding context (getting lost in the “bells and whistles” irrespective of the surrounding context), playing at the very “foundations” of the image (dwelling at the electronic origins of the image, leading nowhere), arbitrary variety (all the cool things one can do with the image) and yet strangely focused on The One image in front of one (undergoing arbitrary variations, such as even hitting the “Variations” button in Photoshop), Feeling (no thought needed, just feel the stream of newly refreshed percepts), arbitrary sporting (noodling around), chance (let’s see what happens if I slide this slider, invert this inverter), and finally, Mind (it’s all in the mind, ultimately, psychedelic brain effects).



FIGURE 30²⁵

As exciting as this Peircean exegesis of firstness as signal processing sounds, it does not quite work as a pedagogy—typically one wants to wean novice media students, in the early semesters of their education, off an excessive reliance on the technology, and guide them all the way to thirdness, if they are to produce any kind of aesthetically satisfying work of electronic media, so that the special effects are “in balance” with the “needs of the project as a whole.” However, perhaps it is possible to save (revel in, intensify) firstness in media; perhaps a Becher-esque *typology* of “moments of firstness” could be laid out on a website: instead of a series of grain elevators photographed from the same perspective one would present, in essence, moments of “here I was in firstness, here I was in firstness”—the question, then, is: would typology respect (preserve, support) firstness, or undermine it in the end (lead it, at the very least, towards secondness, relations to other moments of firstness...). These are questions for another day. In the meantime, pedagogically, allow students to continue to satisfy themselves with *FX*...

We can also use other Peircean semiotic categories to describe the affective and habitual oscillations that occur in signal processing (technically modifying percepts and affects). In another division of his semiotic relating to the sign’s own phenomenological quality to itself (qualisign, sinsign, legisign), we find a similar lack of need for the middle category (secondness-sinsign) as we found earlier for the sign’s indexical object relations, when we consider signal processing in a Peircean context. The example I will use is *sepia*, which is a specific quality (firstness as an pseudo-orangeness), and a “habit of men” (makes images look old) firmly grounded in thirdness. Let’s imagine two scenarios for *sepia* in this semiotic division:

SCENARIO 1: Someone is manipulating a photograph intentionally in Photoshop or taking photographs using the Hipstamatic app to achieve an antique look. As a legisign (habit or rule or law), the appearance of antiqueness is produced by manipulating the color spectrum toward an appropriate *sepia* (orange brown) perhaps combined with some desaturation. The habit-law (antique images are *sepia*) is in mind as the software is manipulated to produce various spectral qualities that play out in front of the eyes, until the “right” specific quality of *sepia* (qualisign) resonates with the desire of the legisign. The oscillation between firstness and thirdness (quality, habit) doesn’t need to pass through any

secondness (the sinsign, which is singularity). Peirce's example of a sinsign is not very exciting (the word "the," not its 25 instances per page, but its each individual use). In the case of sepia, "each individual sepia image" seems adequately subsumed by the general habit of "making it look old." An oscillation between specific quality (qualisign) and a general habit (legisign) seems adequate to describe this scenario (a similar pattern to what was earlier noted where the icon, when expanded to include temporal process, accounted well enough for the index).

SCENARIO 2: A photographer is noodling around in Photoshop and accidentally moves an image's spectrum toward sepia, and then thinks, "Hey this makes it sorta look like an antique image." In this example, the qualisign is stumbled upon (not guided by habit or law) but immediately triggers the legisign (what antique images look like). One moves immediately from specific quality to general law, with no apparent need of the secondness of the sinsign (individual instance).

Again, it may be that in media semiotics, secondness is no more important than the "brute existence" of anything else. We can say, then, that a television is in secondness when it is not turned on, or a painting is in causality when covered by a sheet. But once the media object is activated (starts in fact *mediating*), secondness recedes into a recessive position, and becomes "dominated" by firstness and thirdness (particular positive qualities and synthetic generalities). An useful analogy may be the manner in which middle voices in triadic-harmonic music tend to be obscured by the highest and lowest pitched notes of a polyphonic melody, with the middle tones inflecting or modulating the predominant course of the bass and treble notes—secondness seems to recede in this manner, when we apply the Peircean scheme to mediation, since perception of the quality "jumps right to" the habit of association, with the actual facticity of sepia (e.g., the specific ranges of its hues) typically only attended to via a hermeneutic engagement with manipulation of the functives that concretize the effect. But even here at the "actual occurrence" of signal, operation of the functives oscillates most strongly between firstness and secondness. Another possibility is that secondness is a better candidate for noise rather than for signal (material specificities disruptive of subjective appropriation).

A phenomenological analysis of working with signal processing yields an additional typology of practice. Peirce, as a logician, asserted his categories unempirically (as long as the math looked good after the assertions): he did not need evidence to back up his "architectonics" (though some of his examples are better than the word "the"). The approach I am taking, however, requires a grounding in media neutral actualities of practice (which is different from "specificities" because actualities are non-prescriptive empirical configurations). In this respect I must acknowledge my thousands of hours experience as a practitioner and try to describe what appear to me to be the prevalent "modalities" of signal processing (with regards to percept and affect):

CONDITIONING

Much effects work involves relatively "minor" adjustments that do not call attention to themselves as effects at all, but due to a media saturated environment, the media would be "off" (unpolished, unprofessional, lackluster, too casual, consumeresque, amateurish etc.) without this application. Media exist amidst other media, and not applying basic "conditioning" imparts a "substandard" or at least raw and unfinished quality. In photography, conditioning means simply adjusting the dynamic range, black and white levels on the histogram so that the image "snaps" into the right range of exposure, giving the image a little extra "punch" (with "right" or "punch" being definable relative to either "objective" criteria such as what black and white levels "should be" expressed as a dynamic range, or to contextual criteria such as what all the other published images are doing that is part of the look and feel of imagery produced at the right level of craft or to subjective criteria such as personal taste). In audio, conditioning may involve adding compression to a voice, removing low frequency "mud" from the bottom end of a mix, and "brightening" the high end with equalization. In video it may entail color correction based on rendering flesh tones, cropping the image around a chunk of skin with the software oscilloscope in view (which depicts a line for the industry standard "correct" spectrum of flesh tone, which is actually determined by the color of blood under the skin, and hence "race neutral"). A good metaphor for conditioning is tuning a piano. Piano tuning is anaesthetic (supportive of many different aesthetics) and in fact when played out of tune is an aesthetic in its own right (symbolic of social entropy etc.). Tuning a piano in well, equal, or meantone temperament are conditions of playing the piano, which can be an aesthetic

choice in some instances (e.g., in trying to compose music contemporaneous to Pythagorean sensibilities). Conditioning operates between s_3 and s_4 , since it operates between the levels of perceptual constitution (for example, we cannot choose not to hear the octave relationship between c_3 and c_4), and the gathering (s_4) that allows for formal (s_5) possibilities.



FIGURE 31²⁶

HERMENEUTIC/AFFECT

Effects work can also be engaged within an interpretive framework of embodying or incorporating specific intentions, presuppositions, meanings, directions given, and explicit goals into the texture of the media experience. This doubled term indicates the dual positioning of the effects operator in knowing what affect is being aimed at while also knowing why that affect is being sought and how to achieve it through technical knowledge. The effects operator who works with “dry” and “wet” media (unprocessed and processed) has typically received instructions from a creative director (such as a director or producer) ranging from general to highly specific goals to achieve in the effects work. Additionally, the effects operator will generally have a personal taste and knowledge of effects work, and so there is a field of practice and knowledge that is called upon. An example of this hermeneutic affect mode is the common practice in documentary production to give the male narrator the “Voice of God” treatment (this is the actual term used by producers, to describe the sense of authorial omniscience). On the hermeneutic side, the operator understands the instruction, knows what audio effects can give a heightened sense of authority, such as hard dynamic compression, removing “ums” and strategic boosting of low frequency resonances (a parallel to this in cinematography would be shooting a character from a low angle to increase their aura of power, the audience receives the affect—increased sense of danger or criminality in this character—but for the camera operator, the affect is also an intention, a goal aimed at, and perhaps

even an instruction from a director). While effects in the “conditioning” mode are typically not noticeable as effects (unless compared side by side, wet and dry), effects produced in a hermeneutic/affect mode can run the gamut from minimal (as in color grading, where perfectly well-produced media is subtly altered for purposes of achieving an overall look and feel), to maximal (an obvious special effects sequence). What distinguishes hermeneutic/affect from conditioning is that the latter has a much more restricted scope that is more about tweaking the percepts to make it look or sound not bad than aiming to produce affect in the media reception (which is not to say that conditioning, e.g., making basic image adjustments, cannot easily slide into intending to produce affects). Below, the image on the left can be understood as signal processing (alterations to the dyad percept-affect). The image on the right is better understood as *image processing*, because to composite a complex visual effects sequence requires working with *assemblages* of images as images, rather than manipulating base periodicities.



FIGURE 32 & 33²⁷

OPEN

It has been said of filmmaking²⁸ that the three most important elements are the script, the script, and the script. This adds an *interpretive* dimension to the prior category. But some scripts are more open than others—music video, for instance, is full of beats that may justify cutting at any one of them. And of course there is media production without script. The Open mode of signal processing is less dominated by interpretive requirements and is closer to a general play with the plasticity of percepts that signal processing affords. Signal processing is mediated through what Deleuze and Guattari call “*functives*,” logico-mathematical operations on a plane of reference, not necessarily electronic, but increasingly so, as for example in font design which is typically done in software. Here I am acknowledging that “*signal*” is not necessarily only the flow of electrons but can be thought of as a more technically inclusive category of manipulating the “*base periodicities*” of analogic or symbolic signs). Signal processing requires variables with ranges—some particular attribute is manipulable within a delimited set of values, typically from a low to high value of some kind. Because the image to be processed has been parsed out mathematically down to the electron charge of a pixel, or the range of hearing from silence to bleeding ear drums, the number of variables at hand to be varied, each scaled between minimal and maximal ranges, quickly adds up to levels of complexity approaching near-infinite. In fact, dealing with this probabilistic or theoretical “*infinity of forms and choices*” is one of the motivating aims of this research, in reference to parsing out the field of limitations into reflections on signal-sign-image-noise in the first place (these can perhaps be thought of as metacognitive organizing semantic structures). In openness towards signal processing, there is a kind of oscillation (cycling back and forth) between what one might call attitudes of

exploratory discovery and *affective resonance*. In *exploratory discovery*, the operator is making use of the *functives* of the processors, which may involve a mixture of one’s present and potential knowledge-in-the-making, with regards to outcomes of techniques performed. With unfamiliar software there may be “*noodling around*” that can produce startling results. Much learning in signal processing often progresses from this general noodling to the discovery of the effect produced—*functives* afford this kind of learning through the production of effects. One of the stark differences between coding in a programming language and working with “*off the shelf*” signal processors is that with programming languages, one cannot really noodle—noodling produces nothing but syntax errors and precisely nothing happens, whereas signal processing software based on interface allow an instantaneous learning of effects produced through causes that one need not necessarily know much about. Knowledge can be developed through subsequent re-tracing of actions, so that noodling progresses to knowledge derived from a specific case or type of action. *Affective resonance* is an aspect of the Open mode wherein one produces an affect that is not simply pure variability or alteration in the image but also has affective significance. This occurs when an affective value is produced beyond mere change, it may be a “*cool*” or “*ah-ha*” moment that resonates across other regions of subjectivity in some way. Openness is typically the result of a free oscillation between *affective resonance* and *exploration* (settling on the affect that one is going for, and perhaps co-discovering the affect one hopes to achieve through open *exploratory discovery* of the possibilities of the software). As the photography student who produced the image below states in her blog: “*I played with shutter speeds and apertures to capture different types of movements to see what sort of image they created.*”²⁹



FIGURE 31

EXPERIMENTAL

Elsewhere I have discussed the polysemy of the term experimental and suggested that a more determinate use of the term should avoid a general reference to “anything unusual” and be more explicitly connected to interventions in systems of mediation:

What does “experimental” mean today? The term has become something of an umbrella category—much like the “unclassifiable” category employed by the iTunes software—for a range of practices which might span from a desire to be “avant-garde” to the paradoxical intention of thwarting egoistic intentionality to creative processes highly dependent on the rules of specific techniques for generating the work (“the tool is the message” as it has been described). In this paper I will argue for a reconceptualization of what being “experimental” might mean. I will start with drawing a distinction between two kinds of play—what I will call parametric and originary play. This distinction rests upon the following premise—there is one kind of play we are engaged in when we are playing by the rules of the game, and another kind of play that has to do with inventing the game to be played in the first place. Experimental practice can be conceived as the dialectical “moment” when the originary becomes the parametric, and the parametric unravels into the originary.³⁰

As a mode of signal processing, Experimentation in my view means granting some autonomy to the technical apparatus. This autonomy can range from reserving an “editorial” function to the operator (the right of accepting or rejecting what the technology has produced) to completely erasing this editorial bearing and playing instead the role of a systems designer, entirely leaving effects production to the system designed. The Open mode described above still occurs within the defined “parameters” of the signal-processing environment—one is working with the given capabilities of the system where one is working (e.g., using Photoshop as the environment in which to manipulate a digital image. There are many tools in Photoshop, and it is a deep program, but all the processes are found in the menu somewhere and pre-defined at Adobe HQ). A prepared piano, such as that of John Cage or his student and practitioner Margaret Leng Tan, is considered “experimental” because the parameters of the piano (its tuning, timbre, what the keys are supposed to do) have been modified,

and this modification of the core parameters (because of screws, bolts, paper clips, twigs and other “foreign objects” inserted between the strings) makes the performative situation experimental. A degree of autonomy is given to the instrument, as it is not exactly predictable what sounds will be produced when various objects of differing sizes, materials and shapes are inserted at different locations and angles between the strings, despite an established tradition of prepared keyboards extending back through Cage and his *Concerto for Prepared Piano and Chamber Orchestra* (1950–51) to Erik Satie’s *Piège de Méduse* (1913 or 1914).



The notion of “experimental” here differs somewhat from common or historical characterizations. While the idea of a relative autonomy to the instrumental processes is shared with early formulations of “experimental” artistic practices, the terminology was typically related to the “lab-like” technical objects and spaces in which formal experimentation occurred. Because of all the “gadget-y” and “scientific” apparatuses lying about, the terminology of experimentation propagated. The discursive atmosphere suggested that artistic innovations with technology might enjoy the same “status” of scientific experiments. We can trace the scientific or lab-based notion of artistic experimentation in the writings of Cage and McLaren. For Cage, the experimental position is achieved largely through regarding sound as a physical phenomenon, in much the same way that science or experimentation is addressed toward some empirically constituted object:

Now, on the other hand, times have changed; music has changed; and I no longer object to the word “experimental.” I use it in fact to describe all the music that especially interests

me and to which I am devoted, whether someone else wrote it or I myself did. What has happened is that I have become a listener and the music has become something to hear. Many people, of course, have given up saying "experimental" about this new music. Instead, they either move to a halfway point and say "controversial" or depart to a greater distance and question whether this "music" is music at all.

*For in this new music nothing takes place but sounds: those that are notated and those that are not.*³²

Cage succinctly states the autonomy granted to the technicians as: "Those involved with the composition of experimental music find ways and means to remove themselves from the activities of the sounds they make." Norman McLaren's writing exhibits a complementary character to experimentation, which is the high degree of technical manipulation and control afforded by new technologies of mediation. His ethos does not share Cage's Zen project of ego effacement, but indeed regards technical apparatus as an expanded field for compositional control:

To this end, twenty-four degrees of dynamic level were used (representing a decibel scale) and opposite each note in the score the number representing the desired dynamic level of that note was written.

For instance, 0, 1, and 2 represent three differing degrees of ppp [pianississimo]; 9, 10, and 11, three shades of mp [mezzo piano]; 12, 13, and 14, three degrees of mf [mezzo forte]; 21, 22, and 23, three degrees of fff [fortississimo]; 24 represents a ffff.

Subdivisions of these twenty-four degrees were constantly being used (particularly in crescendos and diminuendos), but were seldom written into the score. In local or rapid crescendos and diminuendos, only the starting and finishing dynamic marks were written and the type of crescendos and diminuendos (such as "arithmetical" or "geometric"), were indicated by a small sketch.

The volume was controlled sometimes by manipulating the shutter or diaphragm of the camera and so affecting the exposure (variable density control) but more often by covering up the one-inch-wide drawing until only a half or fourth or other fraction of its width was visible (variable area control). Whichever method was used, the calibration was in decibels, giving the composer complete control of dynamics.

*The sound of a note, however, is affected not only by volume but by its attack, sustention, and decay, or tone contour....*³³

The newness of technology involves the need to create new rules to new games. Over time these rules and games congeal into styles or forms which have defined parameters that one "plays within," at which point they are no longer (in my definition) to be considered experimental, which I argue should properly refer to inventing the rules of the game to be played.

Clearly, these operational modes of signal processing have some overlap: there is no hard edge between them (as there is no hard edge between one's hand and wrist, yet they are distinct body parts—at the boundary of boundaries is zero, as the physicists say). Diagrammatically our modes should be thought of as similar to FIGURE 31 (i.e. it will always be possible to image border cases).

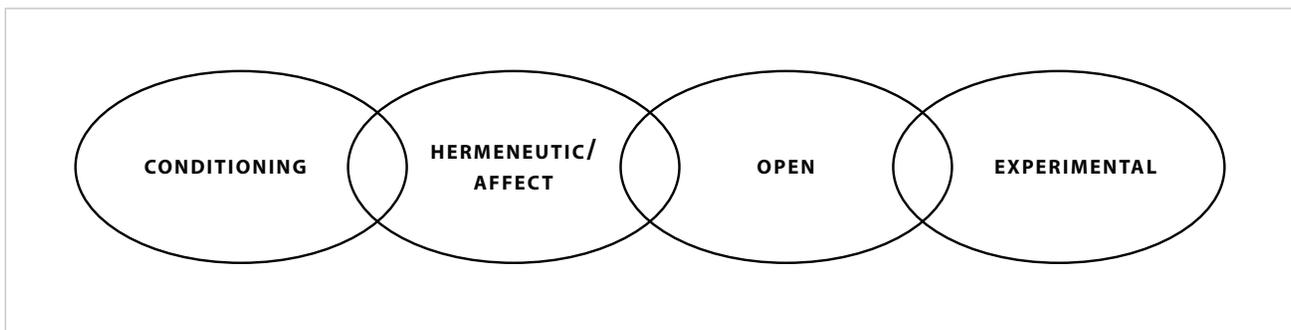


FIGURE 31

15. FUNCTIONS

Signal processing makes use of *functives* (which here will mean symbols of functions, with functions being the actual physical operations), to take up another term from Deleuze and Guattari's, *What Is Philosophy?* A function is a mathematical operation and proposition on a plane of reference. We do not need to bring in the entire metaphysics or the apartheid of brain labor introduced in this text (functions for scientists, percepts and affects for artists, concepts for philosophers, all converging as three independent planes in the brain which is creating order out of chaos). As noted earlier, in the discussion regarding signifier and signified as movement and time image, we found that a concept can be understood as "what repeats" across a manifold of percepts (the perceptual origination of the concept). So the framework here rejects reserving the conceptual in general as the privileged province of philosophers. In any event, Deleuze and Guattari's concept of the concept is under-articulated with regards to other kinds of abstract thought such as "universals," "contemplation, reflection, communication,"³⁴ "ideal" and so forth (that under normal circumstances might stand in as synonyms for concepts).

In contemporary aesthetic discourse, the category of *functives* is attenuated. For instance, it is under-represented in JSTOR, yielding just six hits. A search on "Deleuze Affect" by contrast reveals 1853 results. "Deleuze Percept" nets 45 hits. "Deleuze Concept," however, returns 5563 hits. Clearly, in JSTOR-documented research, progress is called for in the areas of functives and percepts, which is the focus of the following discussion.



FIGURE 37³⁵

In the domain of electronic media, signal processing gives us, precisely, functives that alter percepts. The functives are embodied scientific (logico-mathematic) knowledge of phenomena oriented toward the production of percepts. Functives in signal processing operate at the level of s3, the crossover from quanta to qualia, i.e. production of a quantum of sensibilia (in the circuits) that becomes qualia once registered in the nervous system. Operators of signal processors develop core disciplinary knowledge of an applied science type that is then oriented toward some aesthetic purpose (even in the case of forensic media, which may have simply "clarity" as the goal of "fixed up" audio or video but that is still an aesthetic category or purpose). Processing signal, the operator interrogates both percept (the altered sensibilia) and affect (the inner response that accompanies the changes in percept). Here is one of many places where the Deleuze and Guattari typology is not quite helpful, for example in their claim that philosophy provides "variations," science "variables" and art "varieties." Signal processing (applying effects to percepts embodied in signal) is most like the production of variations as shown below (Photoshop has a "Variations" feature).

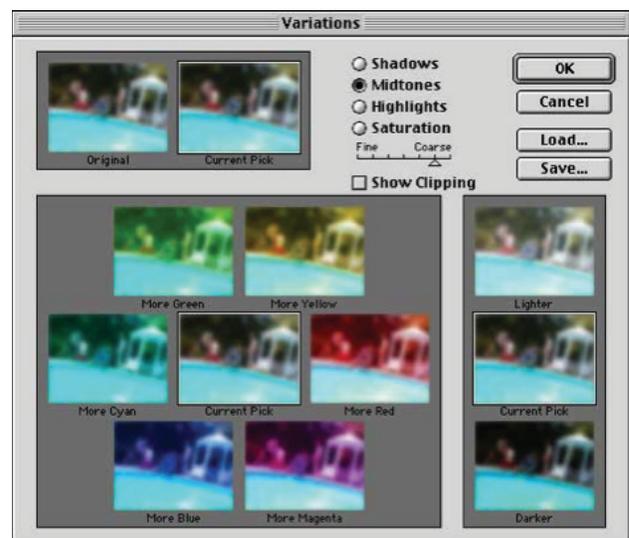


FIGURE 38³⁶

It may be truer (to try to honor the spirit of Deleuze and Guattari) that art *works* (compared, for instance, side by side, at a show or in a gallery) are each, *as works*, more like varieties (comparable to orchids in a solarium perhaps) than variations, but on the production side, especially in the practice of signal processing, variation plays a key role in determining the eventual address

of affect by percept, since art-making, at the level of technique, often employs scientific knowledge directly. Functives do indeed give the operator variables *to use* (in the examples above, these can clearly be seen in the screenshots), as Deleuze and Guattari note, “we do not work through a named equation, we use it.”³⁷ The *use* in signal processing is typically oriented toward the production of an affect, rather than some “percept for percept’s sake.” As the field of percepts is infinitely variable (due to all the parameters at hand that can be manipulated), it is the attention to affects that accompany alterations in percepts that provides some delimitation to the endless possibilities of what is capable in mediation (what above I have called affective resonance). The capabilities of all the functives taken together cover the gamut of the possible ranges governed by the variables (e.g., highlights, midtones, shadows defines all the possibilities of luminosity in a digital photograph, and each of these levels in turn is further articulated into sub-domains of variables, for example, the levels of chrominance at each of these levels of luminance). However the field of affect is a more limited economy than the field of percepts—one may be looking at 16 million colors, but there are not 16 million corresponding affects at hand. Interestingly, classical Indian aesthetics names only 9 emotions or *rasas*: love, joy, wonder, peace, anger, courage, sadness, fear, and disgust. This contrast between the 16 million colors of 24-bit color and the 9 emotions of classical Indian art is intended to illustrate that the field of affect is a more restricted economy than the field of percepts. It is difficult to feel many things at once though quite easy to take in a multitude or manifold of percepts in an instant. Signal processing requires dual attentiveness to the vastness or subtleties of the perceptual manifold in relation to a more “limited vocabulary” of associated affects. We cannot shift registers of affect as quickly as we can produce effects (changes in percepts). Semiotics can approach affects through either phenomenology or cognition, “on its own” semiotics runs up against the sheer immediacy and inner embodied character of affect, which does not easily reveal its circuits to observation. Furthermore, scientific studies of affect on men have been discouraging, proving that they are pretty much “aroused” by any stimulus presented in the laboratory³⁸, so a phenomenological analysis of affect at the level of emotion in mediation will be taken here (since we have already discussed subtler “look and feel” types of effects and affects, such as used in conditioning, color grading etc.). Uncannily, after delineating the four categories below, I came across a similar typol-

ogy in Massumi’s four relationships between “levels of intensity” and “qualification”: resonance, interference, amplification, and dampening. Massumi’s typology is partially derived from scientific measurements of what is here called *s2-organism* (e.g., autonomic system, galvanic skin response, etc.). My typology below is derived entirely phenomenologically (from analysis within consciousness):

1) **SYMMETRICAL**: this relation would be the development of an affect in some kind of “parallel” to percepts. For example, if one cries during a film as the soundtrack plays in a minor key (for example, Barber’s *Adagio for Strings*), the affect could be said to be in a symmetrical relation to the percepts.

2) **ASYMMETRICAL**: it may also happen that affects can be contrary to percepts. Horror film, for instance, often produces as much laughter as terror during the gory shots, depending on the subjectivity of the spectator. One viewer may giggle where another will cringe, or vice versa.

3) **TRANSPARENT**: perhaps especially in the case of music, one can be a kind of transparent container for the affect embedded in the percepts. Percepts rich in affect often produce no corresponding affect in us other than our awareness of the affect in the percepts (e.g., listening to chill out music and not necessarily chilling out but letting the chill out affect register fully across one’s awareness). This can be thought of as a “weaker symmetrical” (but not indifferent) mode as it is different from, for example, “rocking out” affectively to “rockin” music. An alternate term for this mode might be “sympathetic resonance.”

4) **INDIFFERENCE**: affect is often the content of percepts, so that we may register no particular response. The vast majority of linear cinematic narratives give us over-emotional people constantly over-reacting to overblown situations, a highly mannered dramaturgy not unconnected to that of the silent era, 1895–1927. With so much affect on display, it is not always necessary to add one’s own into the mix. Or, one may be preoccupied, having one’s affective bandwidth used up by other aspects of one’s life.

In the interrogation of affect as one works the percepts via the manipulation of functives, the limited economy of responses to the ranges of sensibilia produced is monitored for clues as to which may be the “correct” or “right in this case” effect to be applied in signal processing. But related to this monitoring and interrogation is also attention to changes in the conceptual field (changes in meaning, reference, signification) for which we need to bring back into the discussion the modulation of the concept.

To recall our earlier discussion of Bergson, alterations of percepts in the image or sign will constitute movement images (space-body-intellectual matrix) that invoke or produce the time images (memory-mind-intuitive matrix). To the former belongs an innate vividness and to the latter a necessary dimness (a dimness only countered in the sporadic hypnagogic moment, dream or hallucination). That dimness we had referred to as a *sketch* or *perceptual shorthand*, and it is at the level of disrupting this sketchiness that signal processing can intervene, moving the concept forward out of repetition and toward the rich manifold of present percepts. Below I sketch out five “levels of abstraction” with the aim of describing the potential of signal processing for conceptual inflection or modulation. A full restoration of the phenomenological thematics of “indication” and “expression” is a project for another time. The intent here is to suggest how one may think of signal processing as a semiotic tool that can go to work between time image in long-term memory (signified) and movement image in STM (signifier).

CONCEPT LEVELS:

c1: indicative level (*example: “cat”*)

The sign’s referent can be pointed at

c2: extractive level (*example: “feline”*)

Features of similar indicative signs extracted

c3: speculative (*example: “infinity”*)

Adds negativity, “no limit” which combines an indicative (“limit”) with a negative (not)

c4: combinatory (*example: “cogito ergo sum”*)

Requires multiple lower level concepts to be summed into a new configuration

c5: summative (*example: “substitution of reference for all transcendence”*)

Includes combinations of concepts at levels c1–c4 in its configuration

Articulating the conceptual field in this manner (which is to orient concepts in relation to the primacy of perception: c1, the indicative level) situates the conceptual in general to the world of lived experience, since most of us have had the experience of picking up new words in an unfamiliar language by pointing at various things. We cannot point at “infinity” or “being towards death” (one does wish for more examples of “proper concepts” in *What is Philosophy?*) but we can build up to higher levels of abstraction by making use of the lower more “originary” levels (since after all, all words are defined by means of other words, and anything can be explained through use of simpler words, as proven by any dictionary). In this schema, signal processing is most likely to be capable of influencing conceptual formation from c1–c3:

c1: processed signal alters the perceptual manifold, changing the character and affect of the indicated concept.

c2: processing signal at the level of imagery can draw analogues or parallels between multiple images, producing comparisons of like features across differing cases.

c3: finally, signal processing can induce gaps and absences, transparencies and emptiness, unraveling and mixtures with presences from vivid to ghostly.

This tiered model produces a conceptual gradient and also describes the manner in which the manipulation of percepts and affects can resonate across the conceptual registers, effecting meanings as well as “blocs of sensations.” If alterations of percepts can be shown to ripple across levels c1–c3, then perhaps it is up to the affects produced by percepts to carry on toward modulating levels c4–c5 (which we can perform as an in-text thought experiment, by revivifying the rooster for the reader’s own phenomenological consideration).

16. THE AFFECT OF SIGNAL

Finally, it remains to ask whether we can say that *signal itself* has a range of affects particular to periodicity. Before provisionally answering this question (which can only be a speculative response), I will summarize the semiotic field of periodicity as explored herein:

- Wavelength propagation of identifiable (because regularly recurring) frequencies of light and sound and the physical flow of electrons guided in circuit pathways
- The biological orders of breathing, pulse, circadian rhythms, blinking, walking, and eating
- The technological production of percepts in which human perception is the telos of engineered capacities
- The preliminary gathering and “rhythming” of low focus orders supportive of formal features productive of meaning
- Overt pattern and structured repetition as form
- The sustained causality and brute actuality of signs and images
- The movement from percept to memory, sensation to recollection

Taken together, we might suggest that the affect of signal is the affect of constitution itself, the feel of gathering in general and the coming together of the given in the weave of embodied consciousness.

This is a good place to end, since it is a good place to begin the consideration of noise.

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FIGURE 39⁴¹

BIOGRAPHY

Michael Filimowicz is an interdisciplinary media artist working in the areas of sound, experimental video, creative writing, net art, public art, and digital photography. As a writer he has published poetry, fiction, and philosophy, and as a sound designer he has mixed soundtracks for film and television. He is on the faculty in the School of Interactive Arts and Technology at Simon Fraser University.

NOTES

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28 This is a notion I've heard several times, from blog posts to film profs. At best I would characterize this as a meme in general circulation, free for anyone's appropriation.

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33 Norman McLaren, "Notes on Animated Sound," *The Quarterly of Film Radio and Television*, 7:3 (Spring, 1953), 226-227.

34 Gilles Deleuze and Félix Guattari, *What is Philosophy?*, 7.

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37 Ibid. p. 125.

38 As particularly well-documented in the Food Network documentary, *Mood Food*: <http://www.imdb.com/title/tt0473061/>

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