Gesture, *facture, allure:* the sculptor molds the clay

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Abstract
        Often associated with live stage performance, gesture is presented here as a matter of eletroacoustic composition with out-of-stage performance and as the product of two correlatives: gestural movement and listening. Although stage performance may reestablish the richness of concert music through recent achievements on real-time synthesis and interactive systems, it may also overshadow the notion of gesture as correlative to listening. This is true if gesture is regarded only as the performer's presence on stage. Gestural movement, as body motion and interaction, has the potential to produce rich and unique sound qualities and to control sound behaviour in large scales. To show that any sign of life and richness in sound is related to the perception of the way it was produced, two of Pierre Schaeffer's traditional concepts are presented: *facture* and *allure*. A look over perceptible traces found in sounds produced in out-of-stage performance is concerned with the association among sound fluctuation observation, gestural movement and listening experience. The notion of gesture in eletroacoustic composition brings out a different perspective if careful treatment of gesture is treated way before any recording. It is also one in which gestural movement, large and small scale fluctuation production and observation and the communicative aspect of the listening activity are embedded.

Facture and Allure

        Pierre Schaeffer, founder of *Musique Concrète*, developed conceptual tools to tackle sound perception. Most of his ideas resulted from intensive research aided by such technological means as sound recordings and manipulations. Though it is seen as conservative, historical and traditional, holding binary and subject-object models or being based on excelled technology, the set of concepts he presents in *Traité des objets musicaux* is relevant for those who wish to focus on the communicative aspect of the listening activity, as an avenue for music research and creation.
        Schaeffer's notion of *facture* points to the perception of the energy originally applied to the sound-producing object, giving rise to the perception of the sonic object. Perception of facture does not depend on source recognition, that is, on a clear association between what is heard and, for instance, a known instrument, an object or an environmental phenomenon. As Michel Chion puts it, Schaeffer wishes to show how ours

ears are spontaneously sensitive to the way the sound is made, '*manu*factured.'[1] This ability implies revealing the formal traces that may indicate the sound's original conception and production.

Facture would be our ability to perceive some of these aspects or, in other terms, the agents of the original sound production process. If we want to approach the notion of *facture* to human gestural movement, we will have to consider the kind of agent and the sort of behaviour registered in sound as it is perceived; its formal character. If the notion of *facture* is closer to the perception of the 'making-of' of the sonic object, the term *allure* indicates the sort of the agent's behaviour as it appears in sound, its dynamic pattern or form. Schaeffer defines *allure* as the signature of the *facture*, and explains as follows:

> "Just like a grain signs matter, allure reveals the kind of agent and, in a general way, if it is alive or not: life manifests itself in a typical fluctuation." [2]

Allure is related to fluctuations of a sustained sound. There are three kinds of fluctuations. If we consider human gesture, the agent type would be defined as *vivant*, alive, qualifying the kind of *allure* as *vivant*, since it is the result of human movement. Any human agent is characterized by a flexible fluctuation, perceptible as a formal trace of the examined sound. There are two other sorts of *allures*: the mechanical and the natural. The mechanical deals with the perception of straight, non-flexible regularity, or a flexibility tiny and indistinct to human listening, such as in some electronic generators or automatic configurations. The natural *allure* is related to unpredictable irregularity, such as in any natural phenomena, where no control and intention over sound are exerted by man. Furthermore, *allure* is treated as a criterion of sustained sounds, and could be considered as a function of other criteria created by Schaeffer, such as mass, melodic profile, harmonic timbre, etc. Thus, it should reveal the way the energy is applied to the vibrating object in its own distinct qualities. When people manipulate vibrating objects that produce sound, the *allure* is equivalent to the notion of a regular but flexible sound behaviour that is caused by the agent, thus, by some aspect of gestural movement and listening. The permanence of certain aspects of gestural movement in listening may be viewed as what Schaeffer pointed out as *facture* through the registered and classifiable mark, *allure*.

Scott Ashley, while discussing over the concept of *allure*, asserts:

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[1] "Son souci de ne pas couper les liens entre le "faire" et l'"entendre", amène Pierre Schaeffer à donner dans le *Traité des Objects Musicales*, une certaine place à l'analyse du 'fait insturmentale' et même à la description de certaines techniques de studio. Il met également en évidence comment, dans l'écoute même, l'oreille est spontanément sensible, pour apecier le son, à la maniere dont *elle entend qu'il est fait* - non pas dans un sens d'identification de sa source, que dans un sens d'identification du processus énergétique qui donne naissance à l'object sonore. C'est pourquoi il crée la notion de facture (mot derivée de 'faire' pour désigner la manière dont l'oreille perçoit différents types d'entretien du son, c'est pourquoi aussi il ne craint pas, quand il s'agit de classer les types d'allure, de faire réference à la manière dont l'oreille humaine distingue différents types d'agents sonores, qu'elle reconnaît à 'l'allure'du son." [(Chion, M. 1995:38)].

[2] "Tout comme le grain "signe" la matière, l'allure, au sens où nous l'entendons, "révèle" la façon d'être de l'agent énérgetique et, d'une façon très générale, si cet agent est vivant ou non: la vie se manifeste en effet par une flutuation typique." [(Schaeffer 1966: 550)]

"In fact, it would seem that this notion is what most listeners would define as 'sonority,' the capacity of a sound to transfer 'simulacra' or iconicities (in the sense of 'traces of executive gestures') through its aspects. This is most obvious in the apparent indestructibility of some sonic fabrics even under manipulation."[3]

The perception of the living agent in sound is opposed to a mechanical one, whereby sound generators may not take gesture as part of the sound production process. To our listening, this usually results in a different, usually steady sort of regularity in sound behaviour. It can also be opposed to a more 'chaotic' configuration of sound, like when recording a natural phenomenon, where such macroscopic human control is not achievable and sound is basically irregular.

Composing through gesture

If these notions are considered to be part of our listening experience, we may therefore plan, control and treat sonic material carefully from the moment it is produced, when gesture is a key element. Furthermore, if we consider artistic purposes, whether or not they are included in Schaeffer's intentions[4], gesture can be regarded as a compositional issue, as a matter of musical discourse. This can be possible if gesture leaves listening signification considerations and enters in the production process as a formal matter of a composition. Compositional syntax may emerge from detailed experimentation over the relation among body movement, sound-producing object and listening. Transforming sound matter into compositional material may begin way before any recording is done. We may establish detailed ways of playing and nuances of performance based on conclusions taken from the relation among body movement, source and listening. Certain *modes de jeu* determine characteristics of the sonic material, thus the kind of energetic traces in sound. Each mode alone may hold gradual and subtle differences that may or may not obey some sort of direction. Some of these features may persist and not die away even with subsequent electroacoustic treatments.

As the sheet metal manipulation example show, even Schaeffer was aware of the variety of gestural movements that a composition can explore in dealing with a single vibrating object. Such variety can produce a wide gamut of sounds.[5] While exploring an object, we may define whole sets of manipulations over a sound-producing object as in the correlate listening of the sounds they will produce. Mulder, for instance, lists the following cases of hand movements, relating to type of source:

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[3] [(Ashley, S. 1996)]

[4] For a description of how Schaeffer's intentions changed in the course of research, see [(Palombini, C. 1993)]

[5] [(Schaeffer, 1966: 41)]

Goal-oriented manipulations

Changing position: lift, heave, raise, move, translate, push, pull, draw, tug, haul, jerk, toss, throw, cast, fling, hurl, pitch, depress, jam, thrust, shake, shove, shift, shuffle, jumble, crank, drag, drop, pick up, slip.

Changing orientation: turn, spin, rotate, revolve, twist.

Changing shape: mold, squeeze, pinch, wrench, stretch, extend, twitch, smash, thrash, break, crack, bend, bow, curve, deflect, tweak, cut, spread, stab, crumble, rumple, crumple up, smooth, fold, wrinkle, wave, fracture, rupture.

Contact with the object: grasp, seize, grab, catch, embrace, grip, lay hold of, hold, snatch, clutch, take, hug, cuddle, hold, cling, support, uphold

Joining objects: tie, pinion, nail, sew, button up, shackle, buckle, hook, rivet, fasten, chain up, bind, attach, stick, fit, tighten, wriggle, pin, wrap, envelop

Indirect manipulation: whet, set, strop

Empty-handed gestures : twiddle, wave, snap, point, hand over, give, take, urge, show, size, count, wring, draw, tickle, fondle, nod, wriggle, shrug

Haptic exploration : touch, stroke, strum, thrum, twang, knock, throb, tickle, strike, beat, hit, slam, tap, nudge, jog, clink, bump, brush, kick, prick, poke, pat, flick, rap, whip, hit, slap, struck, caress, pluck, drub, wallop, whop, thwack, rub, swathe. [6]

Clearly, some of these gestural moves do not necessarily apply to the purpose of producing sounds from the contact with actual sound-producing objects. Nonetheless, the examples show the variety of possible manipulations in music production. We may also take into account the topology of the sound-producing object itself; its surface, corners, articulations, the way one can create different sounds while touching on its different parts or spots. Microphone position and general acoustic considerations may also integrate the 'making of' of the sonic material.

Recorded events maintain the result of body interaction as a rich and lively sound mark. Any sign of life in sound is related to how it was produced. Gesture can be experienced as a compositional matter if it also combines conscious listening intention and attention on the act of playing or manipulating the source, modes of post-production listening, and the study of flexible fluctuations on resultant sounds. An act of careful playing is a macroscopic activity to be confronted with and related to the microscopic observation of sound fluctuations. Since gestural movement, in large scales, produces characteristic, unique fluctuations of sonic materials in small scales, the very notion of gesture can be transformed. In fact, it may comprise microscopic fluctuations that configure the sound's macroscopic singularity in our listening experience. Or, we may simply treat gesture as an association between body movement and listening that can be subjected to microscopic analysis. Either way, this feedback between conscious and controlled playing and analysis may also indicate paths to a compositional discourse.

From a more scientific perspective which, by the way, is not the concern of this paper, recent research has considered the analysis of acoustical sounds as a rich source for the observation of microscopic fluctuations (frequency, dynamics, noise, etc). These fluctuations are seen as responsible for the sound's expressive power. Acoustic sounds provide the source for physical modeling and some of these models take gestural

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[6] [(Mulder 1996)]

movement as an eminent consideration in all its complexities. It has become a modeling concern. For an example, see current work on gesture and physical modeling at IRCAM.[7]

It is important to remember that any action cannot be considered as musical gesture.[8] Even if the difference between an ordinary action and a musical gesture may be distinguished by meaning, we may simply consider that an action, a body movement, when correlated to the listening activity, is musical gesture. In short, an action with a listening purpose or attention is musical gesture. Thus, gesture is not just a question of body presence or movement, but the cooperation and constant feed-back between body action and listening.[9]

The purpose of considering Schaeffer's traditional concepts earlier is to demonstrate that listening can be sensitive to gesture. Most theories in elecroacoustic music since then treat gesture as a listening subject. For example, Denis Smalley's three orders of surrogacies have been important to discriminate source recognition and our notion of agent behaviour, from clear to remote signification levels in listening.[10]

If gesture has been well handled as a listening matter in theory, it does not seem to find much room as a detailed sound production matter in eletroacoustic composition, with a single or very few sound-producing objects in mind. Sound material produced with gesture is frequently treated as raw material in eletroacoustic compositions, not to mention the usual wide variety of sources and transformations; one of the possible reasons for formal dispersion. But while producing sounds, gesture is the combination of body movement and listening activity in the time of performance. Body movement can be directed towards a form of listening and thus a form of composing. We may intend to listen to a certain behaviour in sound with an intentional body movement, or, we may discover macroscopic properties of sound while manipulating with attentive listening. All of this before having it recorded. We may imagine that control of gestural performance can underlie the development of a composition.

Claude Cadoz, on the development of his typology of gesture, precedes it with a few important considerations. That which is conceived as the gestural medium, *canal gestuel*, distinguishes itself from others, such as the visual medium, by being both an action and a communication one. As a communication medium, it has two orientations, since it can receive and deliver information. When you touch something cold, you are receiving information, discovering properties. When you are moving your body parts, you may be transferring energy and sending information. The richness of this medium is also due to the fact that it is impossible to dissociate action and perception.[11] In eletroacoustic

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[7] See [(Wanderley, M. 1997)]
[8] See [(Iazzetta, F. 1999)]
[9] Pierre Schaeffer has pointed out that what he calls sonic object can be thought of as the association between an acoustical action and a listening intention. See [(Schaeffer, P. 1966: 271)]
[10] Smalley's levels of surrogacy depart from a first order, where instrumental sound-source and the type of gesture (agent behaviour) are identifiable. We then move to a second order, in which the sounding body can not be recognized but vestiges of human gestural activity are surmised. Finally, we reach a third or remote order, where neither gestural type nor source can be surmised, but where links with gesture are not entirely lost. From the first to the third order, there is a progression of masking listening links to the potencial physical origins of sound. [(Smalley, D. 1986 and 1992)]
[11] [(Cadoz, C. 1994)]

music, this shows that we may take gesture as the association between action and perception much before turning it into a frozen image on tape.

This article deals with the issue of gesture as a production matter related to listening during performance and also to post-listening (that is, after a recording process). To serve as the foundation of a compositional discourse in eletroacoustic music, it needs to be carefully thought of, experimented, subjected to subtle levels of change, not serving as pure raw material to be treated after recordings. Michael McNabb has argued about the importance of performance in eletroacoustic music in contrast to live performance.[12] As a compositional matter it can depart way before recording or listening to taped material, while exploring and planning ahead the endless relation between gestural movement and listening with a particular sound-producing object, in all its nuances. The intention here is not to disparage the art of gesture in live performance, nor to impose Schaeffer's traditional concepts or tapemusic practices. On the contrary, what is intended is to start an investigation of how gesture can ground eletroacoustic composition.

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[12] "The reason that a lot of tape music sounds unsatisfactory is not because there is no performer on stage, but simply because there is no performer at all."[(McNaab, M. 1986: 144)]

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