Signs Made Flesh: Body, Improvisation, and Cognition Through Semiotics

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9.1 Introduction

Semiotics, the "the science of signs" according to etymology (from the ancient Greek σημεῖον, sēmeîon, "sign") [1, 2] has been struggling with music for decades, trying to apply its own conceptual grids to this subject matter [3, 4]. Music semiotics (musical semiotics or semiotics of music) has inherited the famed "textualism" affecting both its disciplinary sources: general semiotics (with its ideological focus on natural verbal language, at least in the tradition developed after Saussure [5]) and musicology (with its ideological focus on symbolic notation, to which music has been traditionally reduced). The discipline has always had issues in dealing with the proverbial ineffability of the musical *datum* (can we translate music into words?) and has indulged foundational questions that prevented, indeed, the development of a specific coherent branch: is music a language? Is it conceivable as a sign? Is musical meaning abstract or referential? Can we identify a minimum unit of musical meaning? etc.

Just like the other products of culture, music is not "a thing," a portion of the ontological world ready-made to be identified and analyzed: rather, music is what human beings, organized in historically situated communities, define as such. Hence, the conception of music changes diachronically (across time) and diatopically (across space). With the invention of sound recording, the rise of Modernist phonographic aesthetics (the electronic, concrete, and electroacoustic), and the increasing stratification of musical communication (mediated by audiovisual

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technologies), it became clear that music was no longer an abstract matter idealistically translatable into signs on the score, but a multimodal matter rooted in sound [6].

In the following paragraphs, we will use semiotics as a "meta-" disciplinary device, with the aim to reconcile it with psychology and enable a mutual translation: we will employ the post-cognitivist paradigm of enactivism to give "conducted improvisation" (a type of structured, collective, musical improvisation) a theoretical framework (in other words, we will employ conducted improvisation as an exemplification of enactivism), and, conversely, we will employ conducted improvisation as a metaphor of enactivism, as something capable to make this paradigm better understandable.

9.2 Semiotics and the Body

The human body is the paradoxical, neglected subject matter par excellence. Its presence is apparently so obvious to us that its meaning would truly unfold only when it is obstructed (there is an "obtuse" meaning opposed to the "obvious" one [7]); namely, when meaning is being manipulated or put into question, so as to reveal the constructed dimension of what seems "natural." Barthes, among the leading figures of literary structuralism (developed in the wave of Saussure), was the first semiotic scholar to criticize a music scholarship aimed at deleting the bodily and the sensible from its metalanguage and, in the first place, epistemology; his essays on music were unsystematic but pioneering, ahead of their times. With the famous "grain of the voice" [8] and the distinction, inspired by Kristeva, between the "phenosong" (singing carrying linguistic meanings) and the "genosong" (singing meant as the vocalization of the corporeal datum), he opened the path to sound studies (timbre being another neglected subject matter in music studies). With the "somathemes" [9], minimum units of bodily meaning inscribed as implied gestures in Schumann's piano fantasies, he opened the path to musical embodiment.

Barthes' intuitions stood as hapaxes until semioticians gradually started to consider the body, in the wake of Merleau-Ponty's phenomenology of perception [10] as the pivot of experience [11–13] and, therefore, enactivism as a suitable model of cognition overcoming static categories and old dichotomies (body vs. mind, perception vs. interpretation, nature vs. culture, individual vs. environment) [14].

9.3 Enactivism

The origins of the enactive paradigm lie in Bruner's [15] proposal of a threefold mode of representation: the symbolic (based on language), the iconic (based on visual perception), and the enactive one (based on action; it is the kind of knowledge coming through movements, so that "the body shapes the mind" [16]). Enactivism represents a paradigm shift in the history of cognitive sciences. This approach, an alternative to the naturalistic one held by materialists and functionalists, is a multidisciplinary set of studies alternatively gathered under the name of "embodied

cognition," developed around the anti-dualistic hypothesis that the mind is not an isolated system coinciding with the brain, or anyway implemented by it, but rather a complex object that must be investigated in its constitutive relations with the body and the – biological, social, and cultural – environment which the organism is situated in. In other words, in this perspective, cognition is regarded as a dynamic activity, rather than a faculty of the individual [17–21]. Unlike computational cognitive science, which is based on shared implicit and explicit premises, embodied cognition is better referred to as a research program with no clear key characteristics other than the tenet that computational cognitive science has failed to appreciate the body's relevance in cognitive processing, and that doing so necessitates a dramatic re-conceptualization of the nature of cognition and how it must be investigated.

Enactivism focuses on the contribution of bodily sensory-motor processes and environmental factors to the definition of cognition: namely, on the relations established by the agent with the surrounding space. Noë's work [22–25] aims at investigating notions such as "consciousness" and "perception" on the basis of a dynamic model of interaction involving not only the brain but also the body and its surroundings. According to this approach, "perception" is not an internal process based on the computational elaboration of information-stimuli deriving, in a static way, from the external environment, but is intrinsically connected to the explorative activities exercised by the body in motion. In other words, "cognition is not the representation of a pregiven world by a pregiven mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions that a being in the world performs" [19: 9]. This "memory" or this "history of past actions" is what has been called "body schema" [26], a notion employed in psychology to refer to the implicit and practical "body map" that makes it possible to use efficiently our body in action.

Noë and Gallagher's recovery of the notion of "body schema" [16, 22, 27] does nothing but confirm the obvious; it is not necessary to pay attention to one's body parts in order to use them efficiently. In the same way, a performance would be negatively affected if an expert performing a practical activity focused his attention on the bodily mechanic of the task, instead of participating in the activity as a whole. As an example, one might refer to the very different actions simultaneously implemented by a drummer in a very single measure – e.g., to kick the bass drum, to keep the beat on the hi-hat or on a cymbal, to hit the snare with the stick – and to the implied notion of "drum independence." A leader conducting a certain number of performers is a typical example of an expert engaging in a practical and embodied activity, whereas gestures are a typical example of embodied cognition [28, 29].

9.4 Enactive Activities

In Noë's most recent work [25], the biological activity of breastfeeding is said to be a paradigmatic example of "organized activity," i.e., an activity, primitive and natural, which is extended in time, becoming the arena for the exercise of attention, looking, listening, doing, and undergoing. Organized activities "emerge out" of the single activities and are not governed by the control of any individual. Finally, they

have a "function," social, biological, or personal, and are (at least potentially) pleasurable. To be organized, an activity must be marked, according to Noë, by six features:

1. It must be primitive, basic, or biological. Breastfeeding is not the achievement of high culture but is rooted in our mammalian origins.
2. Despite being basic, breastfeeding requires exercise and the recourse to evolving and highly sophisticated cognitive skills on the part of both mothers and infants.
3. Since it is organized in time – since it begins, develops, and comes to an end – it has to be "structure." Notice that Noë significantly compares the structure of breastfeeding to that of turn-taking in conversation. Breastfeeding is really structured as a kind of "primitive conversation."
4. In breastfeeding, none of the subjects involved (neither mother nor infant) orchestrate or direct the activity they are involved in: "with its delicate interplay of listening and acting, doing and feeling, and with its distinctive turn-taking temporal dynamics, just sort of happens" [25: 4];
5. Breastfeeding has a "function": some of its aspects remain somewhat ambiguous and still unknown, but for sure it "must have something to do with feeding and with creating a relationship of attachment between mother and child" [25: 4]. This kind of activity, thus, seems to be a peculiar kind of exercise, i.e., a relationship-building exercise.
6. Finally, albeit being an almost worklike source of conflict, a negotiation, breastfeeding is also a source of pleasure for both the subjects involved.

Let us consider another example proposed by Noë [25: 12–14]. We invite the reader to compare it with the activity of musical improvisation, in order to discover the grossly noticeable similarities and the potential differences. Dancing, according to Noë, is an organized activity, if anything is.

1. Dancing is a spontaneous physical response to rhythm, to music, and to movement. Krueger [30] describes dancing as an embodied response to musical events, in which the temporal regularities of melodic and rhythmic musical patterns are embodied in a vast array of different bodily movements.
2. For these reasons, dancing is also an impressive exercise of powers of attention and perceptual discrimination.
3. Thirdly, dancing is clearly structured, since it is an activity organized in space and time, just like breastfeeding and conversation.
4. Albeit we dance on purpose, we enact a series of "expressive movements" (as opposed to "goal-directed movements"), which do not aim at realizing practical goals. In this kind of movement, we do not move "through" space, but "in" space. When we dance, we do not move just in order to reach a different point in the surrounding space: directions and distances lose the central role they have in goal-directed movements. The role of our movements is completely redefined by and subordinated to the expressive features that movements are planned to convey – by the "dance itself." In dancing, we are not interested in measuring the

space we move in, or – to say it with different words – our movement is not limited by points of departure and arrival: movement is not characterized by a pointed orientation in space. This is shown by the fact that in most cases dance-floors do not need to have specific shapes. Dancing is not influenced by the orientation or shape of the space in which it takes place because it is not a goal-directed kind of movement, with a place to leave and one to reach: consequently, dancers do not decide how to dance, at least not at the level of the way their movements are swept up into and organized by the dancing. The dancing just occurs; even if one dancer may "lead," this is just a special way of letting oneself be caught up in the dance: "a good dancer is in the flow." [25: 12].

5. Even lacking the practical background of approaching and moving away – that is, the system of goals and directions, points of departure and points of arrival, distances and orientation – dancing is organized on the basis of a precise system of meanings, that is, the one of "expressivity." We might dance to express our feelings, or to establish ourselves as having an identity. Movements in dancing are not oriented at achieving a practical goal, but at expressing affective valences. More generally, "dancing has a point. Some people dance to meet girls or boys. Sometimes we dance […] because this is demanded of the situation" [25: 12].
6. And finally, being at once basic and spontaneous while also cognitively sophisticated, dancing is, or at least can be, a pleasurable activity.

9.5 Conducted Improvisation

"Conducted improvisation" (a calque from 31; in literature one can also find "controlled," "structured," or "composed" improvisation) is the overextended category we propose to designate a form of organized, collective, musical improvisation wherein the figure of a "conductor," who delivers instructions to the performers, mainly using gestures and graphic scores, is established.

The main difference between simple "collective improvisation" (e.g., Coleman's *Free jazz*, 1961) and conducted improvisation (which may be considered as a particular type of the first category) lies in the systematic nature of the latter. Conducted improvisation enduringly employs a specific and shared lexicon, through which codified ways of interactions between the involved subjects (i.e., the conductor and the ensemble, the conductor and one musician, the musicians themselves both as singles and as part of sub-groups in the ensemble) are established. Feedbacks (i.e., the performer's acceptance or refusal of the instruction delivered by the conductor) play a key role in the construction of the performance.

A provisional outline of conducted improvisation throughout history might include: Russolo's noise intoners orchestra, Stockhausen's Intuitive Musik, Cage's event music, Brown's open form, Wolff's cues and game pieces, Xenakis' stratégie musicale, Sun Ra's Arkestra performances, Davis' silent way, Zappa's Mothers of Invention musical theatre, Eno's oblique strategies, Thompson's Soundpainting, Morris' Conduction®, and Zorn's file card and game pieces. The two latter cases represent the most systematic and documented examples of conducted improvisation.

9.5.1 Morris' Conduction

Drawing inspiration from musicians who had enduringly worked with ensembles in a workshop-like fashion [32: 2], Butch Morris (1947–2013) started to develop a method for composing improvisations live, online, in the 1970s, but the first public performance of what he had called "Conduction" (a portmanteau word – explicitly modeled upon the homograph from physics – pinched with a deconstructionist flavor, made up with "conducting" and "improvisation") would have taken place in 1985 (published in 1986 with the title *Current trends in racism in modern America*).

Morris, who started his career as a jazz cornetist with bandleader David Murray, devoted most of his life to the worldwide diffusion – through 199 accounted workshops/performances, involving musicians he had never met before – of his method. The gestures he employed, an expansion of traditional conducting, constituted a codified and coherent lexicon, by means of which he intended to join the traditions of European classical music and Afro-American jazz together [33]. It is worth reading Morris' official definition of Conduction:

> Conduction (conducted Improvisation) is a means by which a conductor may compose, (re) orchestrate, (re)arrange and sculpt with notated and nonnotated music. Using a vocabulary of signs and gestures, many within the general glossary of traditional conducting, the conductor may alter or initiate rhythm, melody, harmony, not to exclude the development of form/structure, both extended and common, and the instantaneous change in articulation, phrasing, and meter. Indefinite repeats of a phrase or measures may now be at the discretion of the new Composer on the Podium. Signs such as memory may be utilized to recall a particular moment and Literal Movement is a gesture used as a real-time graphic notation. Conducting is no longer a mere method for an interpretation but a viable connection to the process of composition, and the process itself. The act of Conduction is a vocabulary for the improvising ensemble [32: 5].

9.5.2 Zorn's *Cobra*

John Zorn (b. 1953), who participated as a saxophonist in Morris' first issued Conduction, describes himself as a contemporary composer struggling with the paradox of having to write music for improvisers, since that of the radical New York improvisers (at the intersection between free jazz and free improvisation, or non-idiomatic improvisation) was the natural context of his musical *Bildung* as well as his ordinary working environment. Like Morris, Zorn explicitly lists his influences [34] and focuses on the interpenetration between composition and improvisation; what he calls "game pieces" are nothing but the programmatic exploration of this way of music-making: systems of rules, gestures (including usage of paraphernalia), graphic indications, and roles are designed so as to structure the performances of the improvisers through the figure of the "prompter."

Zorn always tries to insert an improvisational moment in compositions that, otherwise, would be entirely notated and, conversely, always finds ways to regiment improvisation; he claims that every note of his music, even the improvised one,

must be reasoned, significant, and important, hence the mixture of the two modalities. *Cobra*, named after a simulation game set during the Second World War, developed in 1984 and released for the first time in 1987 (with recordings made between 1985 and 1986), represents the sum of the work on the game piece format experimented by Zorn in the 1970s.

9.6 Comprovisation

The semiotic square is a classification device elaborated by Greimas (the leader of the structural-generative approach to semiotics) and perfected and popularized by his pupil Floch that derives from classic logic (Aristotle), providing the visualization of a given semantic category [5: 308–311]. The semantic category designed through a semiotic square is identified not only the contradictory terms (A vs. non-A), but also the contrary ones (A vs. B). By building a semiotic square we may map the axiologies (valorizations) at stake in a given field of human experience.

Being the composition of an improvisation (Morris also employed the term "comprovisation"), conducted improvisation stands as the complex term of the opposition "composition vs. improvisation" (the contrary terms at the basis of the consequent semiotic square), deconstructing both habitual contexts of music playing, their organizational models, and underlying values. Conducted improvisation builds up a type of performance and a type of environment that is challenging for all the subjects involved in the process: the performers have to learn entire sets of body schemas, which are completely new to them, in a short term (during the workshops preceding the on-stage performance); the conductor has to consider the feedbacks coming from the performers, in order to deliver the subsequent instruction. In this perspective, a circular feedback circuit is established; the environment affects the direction and the direction manipulates the environment.

A typical Gibsonian concept [18, 21], that of "environment," is employed by Morris to describe his musical practice as the organization of the surrounding things, conditions, and influences. Morris meant Conduction as the "art of environing," an act of intersemiotic translation capable of turning the "character of the environment" [32: 4] into sound: he wanted to turn the actual place where he was working and the actual musicians with whom he was working into music.

In Morris' Conduction, the musicians follow the movements of the baton, of the hands, and, in general, of the body of the conductor; their way of receiving and interpreting the instructions inscribed in these movements influences, in turn, the subsequent ones of the conductor, who can confirm or contradict those interpretations, developing the paths suggested by the musicians or, on the contrary, suggesting different ones. In Zorn's *Cobra*, the "conversational turns" are regulated by the prompter through three types of signals: hand movements (hand signals and deictic gestures, such as indicating parts of the body or the musicians); colored signs with letters and symbols; using a hat (the prompter may wear it or not, and wave it). The one musician convoked by the prompter may or may not accept the task assigned and, therefore, may force the prompter to delegate it to others.

In both Morris and Zorn's conducted improvisations, the conductor/prompter does not take part in the musical performance by playing an instrument, but still is present as a performer on-stage, generally at the center, in a "teacher in the classroom"-like fashion.

9.7 Enactive Improvisation

It is possible to set conducted improvisation within the enactive paradigm, in two ways: by labeling this form of musical performance as an enactment-driven practice; by defining it as a metaphor (properly, a prosopopoeia; personification, in rhetoric) of the enactive processes themselves.

The "lexicon" of Conduction (formerly, "vocabulary"; an abstract of which is available in 32: 6–7) is being systematically studied by Veronesi [35–37], a linguist who had also collaborated with Morris as an interpreter during his Italian residencies. Veronesi backs a pragmatic perspective, with the aim to enlighten the multimodal features of this practice.

Conduction, indeed, is a musical and performative practice wherein various semiotic resources (talk, gestural imitation of instrumentalists' actions, vocal exemplifications, verbal and bodily enactments of directive sequences) are "laminated" (or "simultaneously layered" [38, 39]) and elaborate each other [37]. Therefore, Conduction employs a set of "gestural metaphors and metonymies" [35], which may be understood as "metaforms" (any form that connects two different domains, like an abstract notion to a concrete source, as in the case of metaphors [40]), or "plastic formants" (basic unit of non-figurative visual semiotics [41]; each single, recognizable, meaningful gesture may be understood as a gestural plastic formant, reminiscent of Barthes' somatheme).

It is worth quoting the complete description of a typical Conduction instruction and visualizing it (Fig. 9.1):

Fig. 9.1 Butch Morris performing the instruction "Expand" (or "Develop") from the Conduction lexicon. Graphic reworking of a photograph taken from [39: 98]

> DEVELOP. Description of Gesture: Hands palm to palm facing left and right, chest level, separating left and right and returning. Meaning: Is used to variate, elaborate, embellish, transform, adorn, manipulate, augment, diminish, fragment, deconstruct or reconstruct a specific "point of information." Explanation: When the palms are together, this is the position of the specific information (idea or point of information) to be developed. As the hands separate the development of information takes place, as the hands return to the together position a reconstruction of the idea takes place, when the hands reach the together position this is the downbeat for the return to the initial information. The degree of development is determined in stages by the space between the hands. [42: 178].

By "actant" semiotics defines any syntactic position occupied by a given agent, human or non-human, within a given story and, therefore, text (any possible object of analysis for semiotics); e.g., the main Subject, meant as the Hero, of the story. Actants are roles or functions and must be distinguished from "actors" (characters of the story, to put it simple; e.g., the main Subject or Hero, in this particular story, is the Prince Whatchamacallit). The very same actantial role may be portrayed by different "actors" (many characters may serve as Helpers of the Hero) and, vice versa, the very same actor may carry different actantial roles (a character may serve as Helper in the beginning and turn out to be an Opponent afterward) [5: 5–9].

As a matter of fact, Conduction provides the actantial positions implied – and, normally, un-staged – in musical improvisation (and in musical performance in general) with physical actors; here lies its metaphorical value for enactive cognition. In other words, the conductor, delivering the instructions to the performers, does embody and makes the constraints that are working underneath the musical practice (e.g., architextual, stylistic, and conversational norms) visible.

9.8 Conclusion

By explicitly showing the existence of rules, the asymmetry and fragility of relationships, these practices stage the "behind the scenes" of musical improvisation – we can think of them as a form of Ur-Improvisation – and of musical performance in general, stressing the intersubjective and contractual character of cognition and signification (meaning-making). Morris and Zorn show on-stage the music-making, even though they do not necessarily grant the audience full access to it: they do show the elements of the code (the signals), not the key to it (the rules, the metasigns, the metalanguage). They are interested not in showing a static result, but rather a dynamic process, not in producing enunciates, but rather enacting the enunciation, not making the listener hear "played music," but rather music-in-the-making; just like Cézanne, with his obsessive visual research on Mont Sainte-Victoire, "wanted to depict matter as it takes on form" [43: 13], according to Merleau-Ponty. Conducted improvisation is the staging, the enactment of enaction itself (of the embodiment of musical knowledge).

The enactive paradigm is being increasingly employed as a theoretical framework for dealing with aesthetical objects, including music [24, 44–47], also in an ecological semiotic perspective [48–51]. Due to its circular autopoietic nature [52]

and its cooperative and didactical component [36], as it shifts the focus of music-making from the organization of sound to the organization of musicians, conducted improvisation may find a promising field of application in educational, re-educational, rehabilitational, and music therapical contexts. It is no coincidence that Zorn himself has defined his practice as a "psychodrama," thus reconnecting it to Globokar's "catalog of reactions that we can prescribe to an interpreter."

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