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The enaction of Conduction
Conducted improvisation as situated cognition

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Background. Enactivism represents a paradigm shift in the field of cognitive science; it is a multidisciplinary set of studies gathered under the name of "embodied cognition", focusing on the hypothesis that mind is not an isolated system coinciding with the brain, but a complex object that must be investigated in its essential relations with the body and the environment which the organism is *situated* in (Gibson, 1979; Varela, Thompson, et al., 1991; Clark & Chalmers, 1998; Santarcangelo, forthcoming). Noë's work, in particular (2004, 2009, 2012), proposes a dynamic model of interaction wherein perception is intrinsically connected to the explorative activities exercised by the body in motion. Noë and Gallagher's notion of "body schema" (Cole & Gallagher, 1995; Noë, 2004; Gallagher, 2005) does nothing but confirm the obvious; it is not necessary to pay attention to one's body parts, in order to use them efficiently. Likewise, a performance would be negatively affected if an expert performing a practical activity focused his attention on the mechanic of the task, instead of participating in the activity as a whole. A leader conducting a number of performers is a typical example of an expert engaging in a practical and embodied activity. "Conducted improvisation" (Salvatore, 2000; Marino, 2013) is a form of organized musical improvisation wherein the figure of a "conductor", who delivers instructions to the performers (mainly via gestures and graphic scores), is established.

Aims. Conducted improvisation is set within the enactive paradigm, by labelling this form of musical performance as an enactment-driven practice, and by defining it as a metaphor of the enactive process itself.

Main contribution. Butch Morris' Conduction® is taken as a case study, wherein "various semiotic resources […] are 'laminated' […] and mutually elaborate each other" (Veronesi, 2012). Conduction employs a set of "metaforms", namely gestural metaphors and metonymies, or gestural "plastic formants". Conducted improvisation establishes a type of performance and of environment which is challenging for the involved subjects: the performers have to learn entire sets of body schemas in a short term; the conductor has to consider the feedbacks coming from the performers, in order to deliver the subsequent instruction. Conducted improvisation, *de facto*, provides the actantial positions implied – and, normally, un-staged – in musical improvisation with physical actors. In other words, the conductor, delivering the instructions to the performers, embodies and makes the constraints that are working underneath the musical practice (e.g., architextual, stylistic and conversational norms) visible.

Implications. By showing the existence of rules and the asymmetry of relations, these practices stage the "behind the scenes" of musical improvisation (and of musical performance in general), stressing the intersubjective and contractual character of cognition and signification. Due to its autopoietic, cooperative and didactical nature, conducted improvisation can find a significant field of application in educational, rehabilitational and musicotherapical contexts. Enactivism is little employed as a theoretical framework in dealing with aesthetic subjects, and music in particular, still representing, in this perspective, a whole fertile field to be explored.

Introduction

The present paper is not the account of any empirical experiment, but it displays the very first steps of a theoretical proposal, which tries to join two different approaches (namely, the post-cognitive paradigm named enactivism, and sociosemiotics) together, by focusing upon the matter of concern which is identified in the title (that is, conducted improvisation). The idea is to employ enactivism in order to give conducted improvisation a theoretical framework and an operative label (or, in other words, to exemplify the paradigm), and to employ conducted improvisation not only as an example of enactivism, but also as a metaphor of it, capable to make it better understandable[i].

The enactive paradigm

The roots of the enactive paradigm lie in Bruner's (1966) proposal of three modes of representation:

- The symbolic one (based upon language)

- The iconic one (based upon visual perception and images)

- The enactive one (based upon action; it is the kind of knowledge coming through and from movements, so that "the Body shapes the Mind"[ii]).

Enactivism represents a true paradigm shift in the field of the history of cognitive science. This approach, an alternative to the naturalistic one held by materialists and functionalists, is a multidisciplinary set of studies gathered under the name of "embodied cognition", developed around the anti-dualistic hypothesis that 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 essential relations with the body and the – biological, social and cultural – environment which the organism is *situated* in (see Gibson 1979; Varela, Thompson et al. 1991-1993; Clark & Chalmers 1998; Santarcangelo forthcoming[iii]).

Enactivism, unlike classic cognitivism or recent forms of materialism, is focused 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. Starting from this kind of perspective, Noë's work, in particular (see Noë, 2004; 2009; 2012), 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 the surrounding environment. According to the sensory-motor or enactive 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 it 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" (Varela, Thompson, & Rosch, 1991, as quoted in Reybrouck, 2011; our italics). This "mémoire", this "history of past actions", is what it has been called "body schema" (see Head & Holmes, 1911), a notion employed in psychology to refer to the implicit and practical "body map" that makes it possible to efficiently use our body in motion and action.

Noë and Gallagher's recovery of the notion of "body schema" (see Cole & Gallagher, 1995; Noë, 2004; Gallagher, 2005) 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 (see Kendon, 1980; Streeck, 2009).

Conducted improvisation

"Conducted improvisation" ("improvvisazione eterodiretta", in Italian, according to Salvatore's 1997 neologism; see Salvatore, 2000[iv]) is a form of organized 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 "collective improvisation" (e.g., Ornette Coleman's *Free Jazz*) 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 – locally, or globally – shared lexicon, through which codified ways of interactions between the involved subjects (i.e., between the conductor and the ensemble, between the conductor and the single musician, and between 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 partial historical outline of conducted improvisation – a category that has never been employed as an umbrella term, neither eticly, nor emicly, before (for such a proposal, and for an introductory overview, see Marino, 2013) – might include:

- Luigi Russolo's *noise intoners* orchestra

- Karlheinz Stockhausen's *Intuitive Musik*

- John Cage's *event music*

- Earle Brown's *open form*

- Christian Wolff's *cues* and *game pieces*

- Iannis Xenakis' *stratégie musicale*

- Sun Ra's Arkestra performances

- Miles Davis' *silent way* (see the eponymous album)

- Frank Zappa's Mothers of Invention *musical theatre*

- Walter Thompson's *Soundpainting*

- Butch Morris' *Conduction*®[v]

- John Zorn's *game pieces*[vi].

The two latter cases represent the most systematic and documented examples of conducted improvisation. The following proposal focuses on Morris' Conduction only, but it still claims to be applicable to conducted improvisation in general.

Butch Morris' Conduction

Drawing inspiration from a body of works by musicians who had enduringly worked with ensembles[vii], Lawrence D. "Butch" Morris (Long Beach, CA-US 1947-2013) started to develop a method for live *composing improvisations* in the Seventies; the first public performance of what he had called "Conduction"[viii] took place in 1985 (being published in 1986 with the title *Current Trends in Racism in Modern America*).

Morris, who had started his career as a jazz cornetist with bandleaders Horace Tapscott and David Murray, devoted most of his life to the worldwide diffusion of his method; 199 Conduction performances are officially counted, most of which preceded by rehearsals or longer workshops, involving musicians he had never met before. The gestures he employed, an expansion of those of traditional conducting, actually constituted a codified and coherent lexicon, by the means of which he intended to join the traditions of European classical music and Afro-American jazz together (for an introductory overview to Morris and his works, see Stanley, 2009).

Morris defined Conduction as it follows: "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" (in Graubard & Morris, 1995).

Conduction as a complex term

Being the composition of an improvisation, conducted improvisation stands as the *complex term* within the opposition "composition vs. improvisation" (at the basis of the consequent semiotic square), deconstructing both habitual contexts of music playing (i.e., composition and improvisation),

their organizational models, and underlying values.

Conducted improvisation builds up a type of performance – and a type of environment (Morris defined Conduction as the "art of environing"[ix]) – which is challenging for 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.

The enaction of Conduction

It is possible to set conducted improvisation within the enactive paradigm, in two ways:

- By labelling this form of musical performance as an enactment-driven practice

- By defining it as a metaphor (properly, a prosopopoeia[x]) of the enactive processes themselves.

The "lexicon" of Conduction (formerly, "vocabulary"; an abstract of which is available in Graubard & Morris, 1995, pp. 6-7) is being systematically studied by Veronesi (see 2009; 2011; 2012), 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 workshops, indeed, employ "various semiotic resources (talk, gestural imitation of instrumentalists' actions, vocal exemplifications, verbal and bodily *enactments* of directive sequences […]) [which] are 'laminated'[xi] […] and elaborate each other" (Veronesi, 2012; our italics). Therefore, Conduction performances employ a set of what Danesi & Sebeok (2000) call "metaforms"[xii], namely gestural metaphors and metonymies (Veronesi, 2009), or gestural "plastic formants" (Greimas, 1984)[xiii].

It is worth quoting the description of a typical Conduction instruction: "*Expand* is used to develop a phrase or area, then to bring it back. This is done by placing both hands in front of the body (extended arms) together (for the phrase) then separating the hands for the development" (Graubard & Morris, 1995, p. 6).

Conduction, *de facto*, 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, towards the enactive cognition. In other words, the conductor, delivering the instructions to the performers, *embodies* and makes the constraints that are working underneath the musical practice (e.g., architextual, stylistic and conversational norms) visible.

Conclusions and hints for further studies

By explicitly showing the existence of rules, the asymmetry and the 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. Conducted improvisation is the staging, the enactment of enaction itself (of the embodiment of musical knowledge).

Due to its autopoietic nature (Maturana & Varela, 1980), and its cooperative and didactical component (Veronesi, 2011), conducted improvisation can find a significant field of application in educational, re-educational, rehabilitational and musicotherapical contexts.

The enactive paradigm is little – but increasingly – employed as a theoretical framework in dealing with aesthetical objects, and with music in particular (see Reybrouck, 2001; Luciani, 2009; Peters, 2010; Matyia, 2012; Noë, 2012; Lopez-Cano, 2013), still representing, in this perspective, a whole fertile field to be explored.

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[i] The paper has been conceived and written in cooperation by the two authors; for the legal exigences of publishing attribution, the "Introduction", the first paragraph and the "Conclusions" should be ascribed to Vincenzo Santarcangelo, while the other paragraphs to Gabriele Marino.

[ii] According to Gallagher (2005).

[iii] Authors like Bateson and Merleau-Ponty are other key references for the origins of the enactive paradigm.

[iv] Differently defined, in literature, as "controlled", "structured" or "composed" improvisation.

[v] "Conduction" is a trademark; the symbol "(R)" is not being displayed in the paper anymore.

[vi] His most famous one is *Cobra*; composed in 1984, recorded between 1985 and 1986, first published in 1987.

[vii] Such as Charles Moffett, Jackie Hairston, Sun Ra, Frank Zappa, Lukas Foss' Improvisation Chamber Ensemble, Leonard Bernstein (*Four Improvisations by the Orchestra*), Earle Brown, Alan Silva and Doudou Ndiaye Rose; see Graubard & Morris (1995).

[viii] A portmanteau word – explicitly modelled upon the homonymous word from Physics – with a deconstructionist flavour, made up with "conducting" and "improvisation"; Morris employed the word "comprovisation" too ("composition" plus "improvisation").

[ix] A typical gibsonian concept (see Gibson, 1979), that of "environment" is employed by Morris to describe his musical practice as the organization of the surrounding things, conditions, and influences. Morris claimed he wanted to *make* the "surroundings", the environment of the Conduction (i.e., the actual place where he was working, and the actual musicians with whom he was working), *music*; he wanted to translate the "character of the environment" (Graubard & Morris, 1995, p. 4) into sound. In this perspective, a circular feedback circuit is established; the environment affects the direction, and the direction manipulates the environment.

[x] I.e., personification, in rhetorics.

[xi] I.e., "simultaneously layered" (see Goffman, 1981; Goodwin & Duranti, 1992).

[xii] A metaform is any form that connects two different domains; generally, a metaform connects an abstract notion to a concrete source (e.g., the usage of the verb "to see" to refer to the notion of "thinking"). A metaphor is a typical metaform.

[xiii] A plastic formant is the basic unit of visual/plastic semiotics; a gestural plastic formant is each single, recognizable, meaningful gesture.