HEARING (WITH) THE BODY: ENACTIVE CONCEPTION OF BODY IN AUDITORY SENSEMAKING IN GAMES

Oskari Koskela and Kai Tuuri
University of Jyväskylä
Jyväskylä, Finland

ABSTRACT
This paper discusses the contrast between the embodied and the representative accounts of bodily presence in the sound and music of videogames. The latter highlights the aspects of experience that are of representations instead of direct presence, such as when the pain of the avatar is interpreted from the audial cues rather than felt as such. The contemporary view of embodied cognition has questioned it as an overly mechanistic and dualistic conception of mind that neglects the bodily and active aspects of lived experience. The view of embodied cognition considers the experience of game as an inherently bodily and world-involving activity, replacing the fundamental role of mental representations with that of direct interaction between the player and the game. In this paper, we aim to provide an outline of an enactive approach to auditory experience of games focusing especially on the role of the body in experiencing and making sense of the gameworld. We relate our discussion to ideas such as player involvement in terms of immersion, the acoustic ecology of videogames and the bodily basis of sensemaking in sensorimotor contingencies between sound and action.

KEYWORDS
Embodied Cognition, Enaction, Game Sound, Immersion

1. INTRODUCTION
How is the body present in the sound and music of videogames? A common sense view might begin by assuming a subjective gameplay experience as something being affected by the objective appearance of the game. The body, in this view, is easily seen as a representation of body instead of direct bodily presence. In other words, the body is present through references (e.g., iconic, indexical or symbolic) to the body that need to be interpreted from the visual and audial cues during the course of the gameplay. While this line of thought has been the conventional one within both semiotic and cognitive research of music, the contemporary views of human cognition suggest it to be not that "common sense" after all. Rather, it appears as a remnant of mechanistic and dualistic views that neglect how we actually experience the world.

Of the different views aiming to overcome the dichotomies of subject/object and body/mind, one of the most comprehensive is the enactive theory of cognition (Varela et al., 1993). In the enactive approach, cognition is considered as inherently bodily sensemaking that is grounded on the fundamental sensorimotor interactions between an organism and its environment. Within this view, sensemaking is not about inner processing of information from the world outside but about creating, or bringing forth, the world as a phenomenologically meaningful space for the organism. Simply stated, the enactive view considers our experience of the world as something that we constantly do, based on our bodily capabilities for interaction with it. Importantly, the enactive approach does not propose an additional level of cognition or something added to cognitive processing. Instead, it aims to reformulate the whole idea of cognition as an ongoing interactive process related to the dynamics of life itself.

In this paper, we consider enactive ideas by discussing the bodily involvement of the player in the game. We strive to articulate the embodiment of the player by relying on enactive notions about bodily interaction as a fundamental basis of human experience and the world-constituting quality this interaction entails. While this is an attempt to roughly formulate a theoretical foundation for videogame experience more generally, we focus especially on the relation between the body and videogame sound.
2. BODILY PRESENCE IN THE GAMEPLAY

To paraphrase Graeme Kirkpatrick (2015, p. 111), the central paradox of gameplay is that it is a physical activity of manipulating the controller and following the events unfolding on the screen, yet we talk and feel about it as if we were acting in the game. This sense of inhabiting the game has been considered as a question of player's identification with an avatar, through which one may enter the world presented by the game. A prevalent line of thought has centered on the degree of realism or the gameworld's visual fidelity to the real world, which has been criticized as a too narrow way to understand the involvement in gameplay. For example, James Newman (2002) has pointed out that the enjoyment of the videogame playing is not about visuals but about kinesthetic involvement: Instead of identifying with the avatar, the player embodies the character as a sort of vehicle or equipment, that is "as a set of capabilities, potentials and techniques" the game offers for the player. Presented this way, the core of a player's presence in the gameworld is about having an effect on what happens in the game, which does not even require an avatar to be identified with.

While Newman's characterisation of the avatar as a "vehicle" controlled by the player is helpful in centering the gameplay on activity instead of visuals, it might downplay the role of direct bodily involvement in the game. As Daniel Black (2015) has argued, the idea of "vehicular embodiment" is still entangled with the Cartesian dualism by positioning the player as disembodied cogito controlling the game character. Black points out that the gameplay is not experienced as a sort of distanced problem solving using a digital character but is indeed often a visceral and body-involving experience.

Another way of approaching player embodiment is to consider how our sense of being-in-the-world is grounded on our capabilities for action. From the enactive perspective (Varela et al., 1993), action and perception are not different processes but rather unified under the idea of fundamentally bodily sensemaking. Simply stated, the idea is that our understanding, our perceiving the world as meaningful for us, is grounded on our bodily capabilities of interacting with our environment. This can be illustrated by considering what we perceive as affordances, that is, possibilities for action related to our sensorimotor capabilities (Gibson, 1986). Essentially, in this view, perception is an active and bodily process of making sense of the world.

The basis for this kind of bodily perception lies in the enactively coupled relations between our motor action and sensory stimulus, in other words, sensorimotor contingencies (Noë, 2006). At the very basic level, this refers to how, for example, our vision of objects changes as we turn our heads or how our experience of sounds changes as we move closer or farther from the sound source. While videogames arguably provide another "level" to these contingencies, the basic principle can be thought as being essentially the same: we come to associate our bodily action with the actions in the game not by "high-level" cognitive inference but because of the lawful dependencies between our actions and what is happening in the game.

Concerning videogame sound, Karen Collins (2013) has highlighted the relation between sound and action, and how it facilitates player embodiment, through the concept of synchresis. Originating in film studies, synchresis refers to how simultaneous sound and image are perceived as a single phenomenon, as if having a common source (Chion, 1994). As Collins (2013) has suggested, in the case of interactive media such as videogames, it is more apt to consider sounds to be fused with action rather than with image, in what she terms kinesonic synchresis. What we may consider as lawful relations between the actions of the player and the sounds perceived in the game, players are in direct, embodied interaction with the game sounds and may thus "extend" themselves in the game. Moreover, while the player embodiment in the game is most clearly illustrated with the congruence between player actions and sounds, arguably every event-related sound is also embodied in the sense that they are experienced in terms of the player’s capabilities for action: the way we make sense of the sounds is through our embodied understanding of how they relate to action (see Krueger, 2009).

From the enactive perspective, the core of the player's presence in the game is grounded on the possibilities of interacting with the game, that is, manipulating the controller in a way that has effect on the game. In this sense, the mapping of player controls need not to bear resemblance to realism, as long as our actions and perceptions are related to each other in a lawful manner, which allows us to make sense of the gameworld through our bodily understanding of gameplay interactions. While, in the enactive view, this kind of interactive bodily sensemaking is the basis for all our experiences, the characteristic feature of videogames is the agency it grants for the player. The concept of agency could allow for insightful comparison between videogames and other types of media (see for example Crick, 2011; Black 2017) but in this paper we consider it in regards to how the possibility of meaningful interaction in the game gives rise to the constitution of the game as a space.
3. CO-CONSTITUTED GAMEWORLDS

The characterisation of gameworld in terms of inhabiting a fictitious space of gameplay activities aligns with the enactive perspective. For example, the activity of listening to music has been considered as an exploration of spatial organisation of the work (Krueger, 2009). For the enactive view, however, the idea of gameworld as pre-given is problematic (for a similar critique from an aesthetic perspective, see Kirkpatrick 2011). Instead, one of the main ideas of the enactive approach is that we constitute, or bring forth, our world as a meaningful space through interacting with it. Actually, a more apt term would be co-constitution, because as the player turns the gameworld into a meaningful place, at the same time the player also constitutes herself/himself as an agent in that world.

Again, leaving the visual side aside, the gameplay activity can, at its core, be considered as an exploration of how the game works (Kirkpatrick, 2011). At this level, the exploration is about the mechanics and rules: What kind of actions are meaningful in the sense that they have an effect in the game and relate to what the game invites us to do. We may consider the core of the gameworld to be this kind of space for affordances: A place that permits certain kinds of actions and restricts others, and encapsulates a rule-based normativity with regard to the desirability of actions. As affordances tie the agent and the world together, this world of possibilities for action also brings forth the agent with the game-related capabilities for action.

The Player Involvement Model of Gordon Calleja (2007) points to a similar notion of "dual natured" involvement by relating player immersion with player incorporation. While immersion refers to the experience of inhabiting a virtual world, incorporation has to do with the other aspect of this process, which is the internalisation of the gameworld, with all its kinesthetic, ludic, narrative, spatial etc. dimensions, by the player. In respect to sound, Mark Grimshaw (2008) has discussed how the sounds in an FPS-game facilitate immersion by situating the player within the acoustic ecology of the game. By using the concept of ecology, instead of a more usual environment, Grimshaw highlights a holistic view of the game in which the gameworld includes also the players and their relationship to the environment.

This characterisation of the co-constitution of the gameworld and the player within it can be contrasted with the ideas of player being transported or extended into the gameworld. In contrast to suggesting a transference of a pre-given agent to the pre-given world, the co-constitutive view is based on the idea that the constant activity in itself keeps the understanding of the world in a constant state of flux, being based on our fundamentally bodily possibilities of action within it, that is, enacting our experience. This highlights how our sense of self and world are not that fixed but rather entangled with our capabilities for action and, importantly, always "in the making" (see Black 2017).

To further elaborate the relation between the gameworld and the real world we might return to the very basic notion about videogames as technological activities. As Don Ihde (1990) has argued, technologies change the way we experience our world: They reveal certain aspects and hide others, frame things differently and extend our abilities. By mediating our relation to the world, being entangled with our sensemaking abilities, technologies change our sense of self and our experience of the world (see Verbeek, 2015). We might continue on this line by considering Alva Noe's (2015) view of technology as very broadly "skillful activity", which includes not only tools but also practically every activity that is characterised by organization (from listening to music, conversing, nurturing etc.). In this sense, our everyday life consists of a series of technological activities, our habitual ways of doing, which structure our worlds and ourselves.

4. CONCLUSION

Seeing player embodiment through the enactive approach grounds the gameplay experience on the player's sensorimotor interaction with the game. Through this interaction, the player brings forth the gameworld as a space for possibilities for action and a sense of oneself as a capable actor within that space. In contrast to objective space (merely considering physical dimensions), the gameplay is here considered as lived space that incorporates the imagined embodied experiencing of gamespace into the physical presence.

While this view shares several ideas already highlighted in the discussions of player embodiment and immersion, such as the central role of action and agency, malleability of the sense of self and the "dual-nature" of involvement as immersion and incorporation, there are, however, two points that are especially pronounced in an enactive approach. The first of these concerns the fundamental role of bodily
action in understanding and experiencing. This means that our way of making sense of the world is by bodily action and this gives the basic structures for all our experiences (see Johnson 2007). The second point is that the sensemaking activity is co-constitutive by its nature: We are not "ready" actors in a "ready" world but rather constantly creating the world as a meaningful place through our interaction with it. This point can be linked to the more general tendency of "reframing" or "organising" our sense of self and of the world through technology, and our will to submit to the rules and logic of a game by adopting a lusory attitude.

It can be argued that this kind of view is stretching the enactive ideas too far from the very primordial sensorimotor interactions they originally relate to. Indeed, it seems unlikely that the sense of our digital embodiment could simply be equated with our sense of embodiment in the real world, at least in the sense that we would confuse these two with each other (see Farrow & Iacovides 2014). Moreover, the framing of our experiences as fundamentally world-constituting sensorimotor interaction (at least at the level discussed in this paper) blurs the differences between our involvements in different kinds of media. Nevertheless, the enactive idea of grounding the experience in world-constituting bodily activity may provide a fruitful starting point for considering the "level" of these differences, as well as the role and nature of “higher” cognitive processing usually treated in representationalist terms (e.g., our narrative, imaginative or pictorial involvement) from a non-Cartesian perspective.

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REFERENCES