The Implicit Body as Performance: Analyzing Interactive Art

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ABSTRACT

This paper puts contemporary theories of embodiment and performance in the service of interactive arts criticism. Rather than focusing on vision, structure or signification, the author proposes that we explicitly examine bodies-in-relation, interaction as performance, and "being" as "being-with." He presents four concrete areas of concentration for analyzing the category of interactive art. The author also examines how such work amplifies subjects and objects as always already implicated across one another.

Watching viewer-participants interact with David Rokeby's installation *Very Nervous System* may lead one to conclude that they are dancing erratically to a strange sonic composition; they are actually creating these sounds in his real-time, response-driven environment. Here the audience moves, and is moved, to make music [1]. Similarly, contributors' movements in Camille Utterback's *Untitled 6* generate animated responses that cumulatively interact with each other over time. Their activity complexly layers space, line and color to create evocative and painterly compositions. A "continual flow of unique and fleeting moments," infolding and unfolding, sensual and contemplative, it is akin to the "experience of embodied existence itself" [2] (Color Plate D). Likewise in Mathieu Briand's series of "systems," spectator-performers literally share, swap and interfere with each other's perception. Each participant wears a custom headset outfitted with cameras, screens, microphones and earpieces. Here we see and hear what people in other times and spaces are looking at and listening to, while they simultaneously experience and respond to the sights and sounds picked up from our own body's "viewpoint." Briand's enfleshed network invites us to encounter bodiliness as interactive and relational [3].

Artists such as Rokeby, Utterback and Briand are more interested in how we *move* than in what we *see*. Their installations are not objects to be *perceived* but relations to be *performed*. The contemporary artist-researchers who create what is called interactive art are concerned with how interactivity itself "matters," a relatively new concept in artistic creativity. Here, physical action literally and figuratively becomes the "work" that is the "work of art." Artwork and audience, action and perception, body and world, are each and always already implicated across all others. What this means is that they are collaboratively enacted, dispersed, entwined, differentiated and shared. In this way, interactive installations exceed extant models for understanding art, which almost exclusively rely on signs, vision or form.

A new approach to analyzing interactive art cannot begin with language, images or objects; nor can everyday understandings of "the body" (as a static and explicit "thing") be applied. As Marilyn Strathern warns, it would be a mistake to think we know what a body *is* when we see one [4]. Rather, interactive art, qua *inter-active*, must be examined with the moving body-in-relation; body and world must be understood as implicit in one another.

EMBODIMENT AS RELATIONAL

In his *Parables for the Virtual*, contemporary philosopher Brian Massumi implores us to put "movement, sensation, and qualities of experience" back into our understandings of embodiment. "Our entire vocabulary" [5], he says, "has derived from theories of signification that are still wedded to structure even across irreconcilable differences" [6]. He doesn't wish to undo the important work of cultural studies' linguistic model for understanding race, gender, class or other forms of identification, but hopes to rather engage with movement and "continuity." Following Gilles Deleuze, who followed Bergson, Massumi points out, "When a body is in motion, it does not coincide with itself. It coincides with its own transition: its own variation" [7]. Here the body is not a "known" structure, but a "state of invention" [8], an "accumulation of relative perspectives and the passages between them . . . retaining and combining past movements" [9], continuously "infolded" [10] *with* "coding and codification" [11].

Massumi has an understanding of embodiment as relational, emergent and incipient: topological but not plottable. In other words, the body is processual; it is constituted in and of its activities with the world around it. The body, this paper argues, is performed.

THE PRE-FORMED AND THE PER-FORMED

Richard Schechner is largely credited with expanding our understandings of performance, using a combination of anthropology, cultural theory, postmodern reflection and his practice as a theater director. He says that performance "is a very inclusive notion of action," theater being "only one node on a continuum" that includes, for example, performances in everyday life, rites and ceremonies [12]. Performance, scholars have argued, is activity and process, transportative and transformative, in between modalities. It is a "liminal space," that is not

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"reducible to terms independent of its formation" [13].

In a study of digital art inter-actions, Nicole Ridgway builds on these foundations, using the "philosophical tradition[s] of . . . relation and emergence" to bring new light to performance. She says that it is not liminal and "'in' the between, but rather 'of' the relation." Ridgway follows the work of Gilles Deleuze and Elizabeth Grosz to juxtapose pre-formism—the already preformed or completely given (rather than produced)—with per-formance—"a taking place, something in process and, by definition, unfinished." Per-formance, says Ridgway, "inaugurates not enacts." So interaction "is not [then] a meeting of two extant essences, but a movement and unfolding of the [relation] that is always supplementary and incomplete" [14].

Embodiment, I contend, *is* inter-action. Bodies only come into being through how they inter-act and relate. In his book, *Being Singular Plural*, Jean-Luc Nancy avers that "being" is *always* "being-with" [15]. Here I assert that "body" is always "embodied-with." It is per-formed and co-emergent *with* its surroundings. And interactive installations have the potential to reconfigure action and perception in ways that amplify this incipient and interactive "bodiliness."

INTERVENING IN THE BODY: FROM THE EXPLICIT TO THE IMPLICIT

Performance studies scholar Rebecca Schneider argued that performance art featuring "explicit bodies" stages and makes explicit (in Latin: unfolds) the social inscriptions on, and attributed to, the body. Work by artists such as Karen Finley and VALIE EXPORT, Schneider maintains, "renders the symbolic [as] literal" in order to intervene in and "pose a threat [to] structures of comprehensibility" [16].

In work by artists like Rokeby, Utterback and Briand, I maintain, the body of the viewer is unfinished and implicated (in Latin: infolded). Such work engages not with the body as sign or structure, but with a "continuous" embodiment. Rather than staging an explicit body *in* performance as an attempt to unfold its inscriptions, interactive art engages an implicit body *as* performance. It has the radical capacity to enhance, disrupt, intervene in and alter experience and action in ways that call attention to our infolding, embodying and co-emergent relationships with our surroundings. The "work" is an enduring and per-formed event in

which the subject (viewer-participant) and object (software and/or installation) are composed of their interrelations. An approach to analyzing such art should focus on performance and activity.

THE IMPLICIT BODY FRAMEWORK

The framework I propose here posits a concentration on four key areas when analyzing a given work: artistic inquiry and process; art work description; inter-activity; and relationality. While traditional readings of digital art and new media most often stop after the first two areas of concentration, I argue, it is the latter two that account for the far-reaching potential of interactive art [17].

Artistic Inquiry and Process

How artists approach their work—critique what it is doing and reapply their understanding of the piece while it is still in production—obviously affects our readings of it. How artists contextualize their work in a gallery, title it and write about it on the wall description in the gallery and in the catalog or on their web site all feed back into how we understand, interact and engage with the work. These are thus presented as part of the implicit body framework, through analyzing texts by, and interviews with, the artists.

Artwork Description

The artwork description is a detailed description of the piece—what it looks and sounds and feels like, how it responds to us in the gallery or performance space. As Lizzie Muller and Caitlin Jones point out, the intentions of artists and experiences of viewers may differ greatly in the media art domain and so this section may include documentation shot and written by others—including the critic or audience—or even edited interviews with interactors [18].

Inter-activity

Most writing on interactive art will explain that a given piece *is* interactive and *how* it is interactive but not *how we interact*. The implicit body framework, on the other hand, explicates participants' physical actions, enabling critical readings of that which is per-formed: Our literal movements over time and in space, our affect, movement and sensation are described in detail as the "work"—the work of art *and* the work of embodiment.

In implicit body case studies, the actual (and actualizing) "activity" of inter-activity is genuinely given priority over

the projections we might look at, the moving parts we witness or the sounds we might hear within the gallery space. Inter-activity is understood to be enaction, practice, affect, (the) "work." How are audiences, the framework asks, literally and physically "moved"? The case studies catalog, through detailed accounts from life or video documentation, the careful breathing, fast-paced running and awkward grasping, the intricate gestures of fingers, mouths and toes angling to trigger sensors, the extravagant leaps and dances of bodies making music across space, the quiet stutters and stares that attempt to elicit the perfect union with and response from a software or installation as time goes on.

This approach differs from the aforementioned, and credit-worthy, Muller and Jones documentation of interactive artworks through interviews in that implicit body case studies examine embodied action rather than accounts of how such works are experienced. My own young daughter, for example, often tries unfamiliar food and exclaims, "delicious!" in order to impress me with her cultured palate, while her facial expressions and body language tell a far different story. Here, the goal is to articulate, as much as is possible, movement (or the lack thereof) before it is qualified. While the process of embodiment itself resists being captured or presented in text or images, it is precisely this resistance that the implicit body framework attempts to address. This allows for intricate analyses of how artwork and audience, body and world, co-emerge.

Relationality

The implicit body framework also endeavors to analyze *how we relate—in, of* and *as* these interactions. While interaction and performance may be inseparable from relationality and co-emergence, in the implicit body framework they are heuristically separated and given equal measure so as to ensure a concentration on both our literal, physical movements and on what and how they per-form. In his discussion of Stelarc's work, Massumi avers that the artist is able to physically experience ideas, to encounter what he calls "sensible concepts." Massumi says that sensible concepts do not "pre-exist" their own "performance"; they are rather "manifested" through their own "physical expression" [19]. The implicit body in interactive art, I would argue, enables viewer-participants—not just performance artists—to enact and explore such corporeal-conceptual relations.

The implicit body framework's fourth

area of concentration asks, What ideas or concepts are "embodied-with" interactive art? How, in our activities and performance, do we sensibly conceive of, for example, architecture or meaning-making or society? How are they infolded into, and formed by, the body and one another? What do we learn about embodiment and interactivity through these continuous relationships?

Here I am arguing for, and beginning, an ongoing list of implicit body "thematics," relational couplings between embodiment and various concepts often found in contemporary interactive art. Thematics name, and attempt to critically engage with, the sensible concepts that emerge from our interactions with such work. I choose the word "thematic" because it is more reflective of a sensible concept: It is not only a noun, but also a potential adjective or adverb, and can thus always be in relation to activity. Thematics differ from traditional conceptually based themes in that they aim to investigate the materiality and form of our relationality; thematics require (inter-)activity. Every thematic is both a theme and an action, a careful reading of the "with" of the incorporating practices we perform and embody with interactive art.

Thus Utterback's *Untitled 6* might, for example, be read through what I call the Body-Language thematic, which studies the co-emergent relationships between the performance of embodiment and the process of meaning-making. When we interact with her work, our enfleshed writing, drawing, painting and making marks are not inscriptions to be read, but activities with which we sensibly conceive. Our bodies and her software together create an ongoing composition, a relational space in which we "make sense."

Since bodies co-emerge not only with meaning but also with space (flesh-space), with society (social-anatomies) and with a plurality of other sensible concepts, the thematic approach presented here calls for multiple readings of any given interactive artwork. Each iterative reading calls for specificity—what, precisely, is emerging with the body?—within a collection of co-emergent categories in order to explore relationality, embodiment and interactivity in more depth.

A CASE IN POINT

Simon Penny and his collaborators' *Traces* (1999) is a fully immersive interactive artwork and environment that uses four infrared video cameras and custom computer vision software to construct a 3D volumetric model of its participants, who interact within a Cave Automatic Virtual Environment (CAVE) [20] (Fig. 1). The CAVE contains projections of 3D videos across three walls, the ceiling and floor that respond to a participant's movement in real time. The active performers in *Traces* see floating "images" as 3D moving sculptures in the immediate space around them. This interface invites a moving, affective and sensual sensorimotor body into the interactive experience of virtual reality. It is important to note here just how enveloping a CAVE, and the interaction in *Traces*, really is. Many media theorists over the last decade have analyzed *Traces*, most notably Mark B.N. Hansen and N. Katherine Hayles [21]. What follows is a truncated case study using the implicit body framework, in order to show how it might add to ongoing discussions about interactive art.

There are three modes of interaction in *Traces*, where each leads into the next. In the first, "passive" trace, every movement, small or sweeping, draws real-time lilac-colored "voxels" (volumetric pixels) that slowly fade to nothingness, like trails

Fig. 1. Simon Penny, renderings, screen shots and documentation of performers inside Simon Penny's *Traces*, CAVE installation, 1999 (in its three modes) and using the Traces Vision System in other installations. (© Simon Penny. Layout: Nathaniel Stern.)

of ephemeral bricks behind each flickering action. These traces of our bodies look and feel like "volumetric and spatial-acoustic residues of user movement that slowly decay" [22]. Penny describes this interaction as dancing a sculpture. When the software crosses into its "active" trace mode, the small cubic voxels no longer fade at a standard rate. Instead, participants' movements seed 3D cellular automata characteristics: Each voxel may shift to any number of varying colors, for any amount of time, before it disappears. In the final, "behaving" trace, performances in the CAVE initiate animal-like flying statuettes that move in Reynolds flocking patterns in and around the viewer. These user-spawned 3D animations—playfully called Chinese dragons by the artists because of their segmented spherical appearance—follow complex, interactive and generative behaviors that make them swoop and flock and tease.

Traces responds to our bodies, but over time we must also be more responsive to it. What begins as embodied exploration becomes a physical investment in interactive and generative creation through flicks and jabs, running and jumping, swiping and diving. A thematic reading similar to that of Utterback's work, above, suggests that there is a dialogue— what Jean-Luc Nancy [23] might call a corpus—between Body and Language. These two things (which are precisely not things) are per-formed, performatively given both material and meaning, together.

Hansen and Hayles [24] often turn to art in order to grow their technology-based philosophies of embodiment. In counterpoint, I am asking for an understanding of philosophy and art, of embodiment and interactivity, together. The subtle difference is in the articulation: I treat art and philosophy, like body and world, as transductions of, and as co-emergent with, one another. This approach better enables the language and meaning and concepts in and with *Traces* to manifest from its inherent coupling *with* embodied enaction. Here the framework—which is informed and supported by Hansen's and Hayles's theories—offers insight into how *Traces,* amongst other embodied performances, amplifies and helps us better understand the relation of flesh and discourse [25].

One of Hansen's key arguments in *Bodies in Code* is that humanity and technology evolve together. He says that human embodiment and experience—which are, he asserts, *always* technically mediated—are the primary factors in our

evolution. He goes on to argue that contemporary artists' "varied use of digital media has pointed the way toward an introjection of technics into embodiment" [26]. In other words, digital art enables us to bring and incorporate the surrounding world, the technologically mediated world, into our processual embodiment—what he calls, following Merleau-Ponty, the body-schema.

Hansen asserts that *Traces* "demonstrates that the disclosive power of the body schema is an essentially technical power" and that, "in the end, it emerges only through the technology that makes it possible in the first place." *Traces* allows us to literally encounter a "body-in-code" in that our body-image ("self-representation") is "indiscernible from a technically generated body schema" ("enactive spatialization"). He argues that the difference between the two "*has been entirely effaced.*" Our experience of our "body proper" does not, in other words, take the form of a representational image but rather "emerges through the *representative* function of the data of body movement" [27]. Hansen in fact goes so far as to say that in *Traces,* as in the world at large, "the entire body schema—the coupling of body proper and environment—is generated by the technical system" [28]. Here I argue that despite his careful reasoning around the co-evolution of body and technology/code, Hansen winds up privileging the latter.

In Hayles's nuanced and self-critical treatise on relationality and the co-emergence of technology/signification with the body, she argues that interactive artworks are spaces that "make vividly real the emergence of ideas of the body and experiences of embodiment." Hayles puts forward three "modes of relation" for interrogating such work: "relation of mindbody to the immediate surroundings," which she calls enactment; "relation between mindbody and world," or perception; and "relationality as cultural construction," or enculturation [29]. Hayles states that these "by no means exhaust the ways in which relationality brings the mindbody and the world into the realm of human experience, [but] they are capacious enough in their differences to convey a sense of what is at stake in shifting the focus from entity to relation" [30].

Hayles places *Traces* within her mode of "enactment": the relation of "mindbody" to its immediate surroundings. She states that *Traces* "occupies a middle ground between avatars that mirror the user's motions and autonomous agents

that behave independently of their human interlocutors." This "performance," she goes on, is "registered by the user visually and also kinesthetically as she moves energetically within the space to generate the entities of the Active and Behaving Traces." It "makes vividly clear that the simulated entities she calls "her body" and the "trace" are emergent phenomena arising from their dynamic and creative interactions." Hayles contends that *Traces* "enacts a borderland where the boundaries of the self diffuse into the immediate environment and then differentiate into independent agents" [31].

Hayles argues that

Traces bespeaks the playful and creative possibilities of a body with fuzzy boundaries, experiences of embodiment that transform and evolve through time, connections to intelligent machines that enact the human-machine boundary as mutual emergence, and the joy that comes when we realize we are not isolated from the flux but rather enact our mind-bodies through our deep and continuous communion with it [32].

For Hayles, body and world co-emerge, and like Hansen she asserts that *Traces* supports an understanding of the body-schema, of embodiment, of relationality and emergence.

My approach to embodiment and interactivity is itself not dissimilar to the one proposed in Hayles's text, and implicit body thematics are not completely unlike her "modes of relation." However, I maintain that both Hayles and Hansen start with a distinct artwork/technology and discrete participant before refiguring their inter-active dynamics. I am not arguing for an extant body that can "diffuse" into its environment and then "differentiate" again, an embodied and artful "communion" or "connection" with, for example, the "boundary" of technology—words that unfortunately suggest the two as a priori, despite Hayles's argument for "mutual emergence" [33].

My approach takes the per-formance of body and world and technology together as given. Here technology and the artwork are not acting as catalysts or glue that entwine two extant entities. Body and world are not, I argue, pre-formed things. Rather, interactive art intervenes into entwined relationships that are always already emerging, which are necessary—and in fact the very precondition—for being(-with). Interactive art such as *Traces* creates potentialized contexts that *amplify* the fundamentally relational process of embodiment.

The implicit body framework thus

puts emphasis on movement, on interaction itself. It first studies how people literally move and are moved and then iterates through a multiplicity of potential relations and co-emergences within that movement. Implicit body thematics are not merely "modes of relation" but sensible concepts that are themselves emergent and in relation; they are used to examine an embodied investigation of a continuous embodiment "with" x (with x, with x, with x, ad infinitum).

In the passive trace, performers tend toward slow investigative gestures: swooping arms, a dip and wave-making slip of the leg, explorations of the magical fades of the voxels in their avatars. In the active trace, when images begin taking on characteristics of their own, viewers' performances become more erratic; they try to control the images around them by ineffectually waving them away, slowing their movements then unexpectedly lashing out, flailing and failing at their attempts to have exacting control over the environment/embodiment/3D image (and its meaning). In the behaving trace, they tend to stop trying to control everything in the space but instead flick and kick their arms and legs in short motions, in order at least to command the birth of Chinese dragons and engage in an ongoing play.

In the final interactive mode, "user body movements spawn" inter-active agents that are somewhat "autonomous" [34], "cultural artifacts that exhibit" their own "behavior" [35]. Said behaviors respond to participants' position and movements in space, and in turn their movements respond to these images: shorter and harsher, static then erratic, karate chops and Butoh. Here the work is not simply, as Penny and others say, a "point at which [a] computational system and the user make contact" [36]. The "work" *is* the relationship that emerges and that we emerge from. With *Traces*, bodies and images are enacted through their performed interactions with one another, guiding and birthing, tracing and transforming, feeding back between what we do, what we see and what each means in and through and to and with the other.

Here we see and read what we perform and make, together. Bodies interacting in trace-space contribute to the construction and constitution of the image-world in the VR environment with which they are interacting. Since *Traces* does not represent the body but rather the body's *activity*, the images that participants make, read and respond to are precisely processual and per-formed. These images, like the body, emerge from the (outside/inside) space of relationality, and together they produce meaning.

The relationship that the work of *Traces* frames is between/with, explicit and implicit, construction and constitution, body and sign. Its significations and symbols are inscribed, in real time, through our incorporating practices and simultaneously take on a symbolic life of their own, informing how we perform before, during and thereafter. Acting together, body and language emerge together, in what Nancy would call "exscription" [37]. We come to sense, to mean, to be-with.

How does such a reading add to the discourse of interactive art?

First and foremost, the implicit body framework's detailed descriptions of interaction place emphasis on movement itself. Here, interaction is not a concept *behind* the work but the activity and performance *of* the work-with-us. *Traces*, in other words, does not support a philosophy of embodiment, as Hansen and Hayles implicitly aver, but rather shows how the work exscribes both embodiment and (its/our) philosophy.

Second, the implicit body framework does not assume a singular-yet-coupled emergence as given. Following the above thematic understanding of *Traces*, I would utilize the same (though perhaps extended) detailed descriptions of activity in order to re-read the work several times over. A multiplicity of sensible concepts are per-formed with *Traces*, and each deserves explicit attention. Every iterative reading deepens our understandings of the piece, of interaction, of the body and of the world with which we emerge.

Conclusions

The implicit body framework gives potential modes of explicating embodied action and thinking through interactive art as relational and performed. It proposes thorough descriptions of physical activity and careful readings of that which is sensibly conceived. All this takes is time: time spent interacting with art, time spent describing those interactions in detail and time contemplating, writing and iterating through our multiple unfolding, infolding and co-emergent relations.

References and Notes

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6. Massumi [5] p. 27.

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8. Massumi [5] p. 103.

9. Massumi [5] p. 57.

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12. Richard Schechner, *Essays on performance theory 1970–1976* (New York: Drama Book Specialists, 1977), p. 1.

13. See Phillip Zarrilli, "Review: Toward a Definition of Performance Studies" Theatre Journal, Vol. 38, No. 3, 372–376 and No. 4, p. 493–496 (1986) and Richard Schechner, *Performance Studies: An Introduction* (New York: Routledge, 2002).

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15. Jean-Luc Nancy, *Being Singular Plural*, Translated by Anne O'Byrne and Robert Richardson (Stanford, CA: Stanford University Press, 2000), p. 27.

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17. The full-length manuscript I am currently working on, tentatively titled *The Implicit Body in Interactive Art: Performance, Embodiment, and Media*, makes this argument at length, and provides in-depth analyses of work utilizing the framework it proposes. This grows out of my doctoral research, which can be viewed at the Trinity College Dublin library.

18. Lizzie Muller and Caitlin Jones, "Between Real and Ideal: Documenting Media Art," Leonardo Vol. 41 No. 4, 418–419 (2008).

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22. Simon Penny et al., "Traces: Embodied Immersive Interaction with Semi-Autonomous Avatars," Convergence: The International Journal of Research into New Media Technologies Vol 7 No. 2, 47–65 (2001), p. 47.

23. Jean-Luc Nancy. *Corpus*, Translated by Richard A. Rand (Bronx, NY: Fordham University Press, 2008), pp. 53–56.

24. Hansen [21] and Hayles [21].

25. As with Utterback, Penny's work would equally benefit from being read through a multiple number of thematics.

26. Hansen [21] p. x.

27. The above quotations are all from Hansen [21] pp. 48–49.

28. Hansen [21] p. 47.

29. She draws parallels between these and Don Ihde's work, where Human-Technology-World relations are also broken into three categories: Human+Technology in relation to the World, or "embodiment relations"; Human in relation to Technology+World, "hermeneutic relations"; or Human in relation to a Technological World (such as Second Life or the Internet), or "alterity relations." Don Ihde, *Technology and the Lifeworld: From Garden to Eden* (Bloomington and Indianapolis: Indiana University Press, 1990).

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