

# SPATIAL POLITICS: THE (NON)DESTINATIONS OF AUGMENTED REALITY ART (PART II)

[Ed. note: This is the second part of a two-part essay. See the September/October 2010 issue (Volume 38, no. 2) of *Afterimage* for Part 1 of this essay.]

What would it be for an augmented reality artwork to produce a form of communication, connectedness, and community qualified participation-through-interactivity as noise, as an ambivalent destination? An augmented reality artwork that would call attention to the inseparability of “Here you are now” and “Where are you now?,” turning this inseparability into innovative ways of perceiving? What would such a work look like? What would be the aesthetic operations constitutive of such AR environments? These works deploy communication, connectedness, and community as an undertaking more than a program or an accomplishment. They do so by effectuating affective/sensorial/perceptual/cognitive horizon shifts to problematize the instantaneity of connectedness and the non-oppositional view of participation.

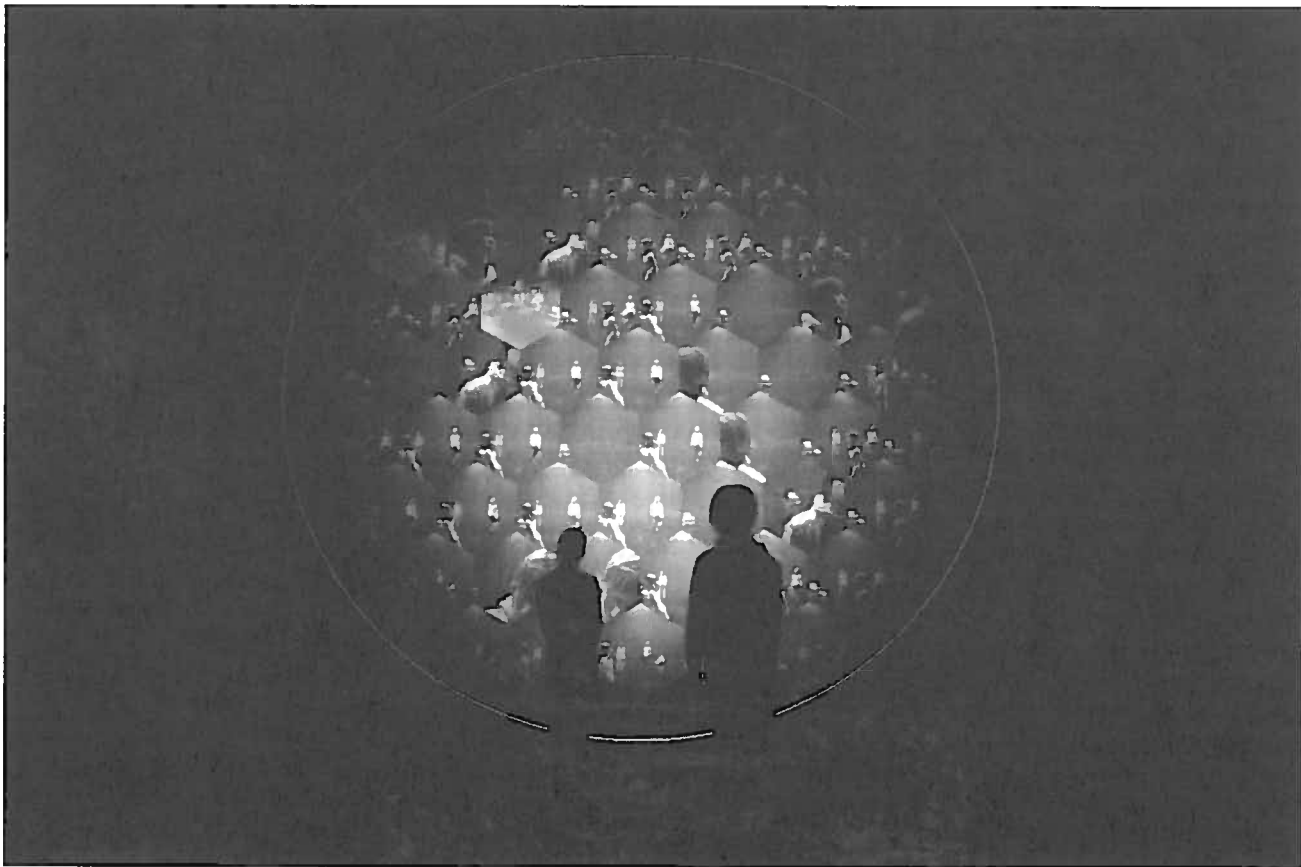
## THE PROBING STRATEGY

Let us first address Seiko Mikami’s interactive *Desire of Codes* (2007–), and its exploration of what I call the “probing” strategy of (non) destination. In its most recent 2010 version shown at Yamaguchi Center for Arts and Media’s Studio A in Japan, *Desire of Codes* is made of three sections: (1) a wall of sixty devices with highly receptive built-in lights, microphones, and cameras, which blink and move, following the detected movement of the spectators; (2) six robotic search arms suspended from the ceiling, equipped with cameras and projectors that also move (although more slowly) to closely observe the actions of the detected spectators, recording and projecting their enlarged images onto the floor; and (3) a large round screen at the back of the exhibition resembling an insect’s compound eye that projects the images (details of the spectator’s body, such as skin, eyes, or hair) and sounds recorded by the cameras of the first section, together with footage of public spaces (namely airports, parks, hallways, and streets) recorded by different surveillance cameras around the world. The spectator who enters the site is submitted to informational society’s sensing, detection, and surveillance operations: s/he is tracked down from beginning to end; the sixty structures on the wall move together as s/he moves; when s/he stops moving the structures’ motion also stops. In the middle section, the search arms extend their appendages to establish a camera-to-face relationship with him or her to ensure the detection-recording-projection of his or her moving body: Finally, s/he observes his or her own image (nearly illegible at this point) being mixed with other surveillance images, inserted into a community of surveilled and encoded bodies. His or her trajectory in the space is more precisely a passage from a sense of relative privacy and control (a sense of play, instant feedback, gratification, and uniqueness in relation to one’s image and movement) to a sense of becoming public and controlled (observed, processed as data, encoded, multiplied, made reproducible and visible as code to all). Even the soundscape—a sonic environment mixing every sound occurring in the site with formerly

recorded sound data accumulated up to the present—embeds the logic of passage from private to public.

In this process, while the “Here you are now” modality of augmented reality persists—for the *Desire of Codes* is distinctively an installation of continual surveillance, tracking, and detection—and while the encoding of one’s desires unfolds accordingly, the installation opens up to the questioning “Where are you now?,” “Who are you now?,” and “Is this really you?” This is the ambivalence of destination: the representative deployment of a microcosm of informational society in which every consumer or social networking participant is destined to leave a coded trace once desire is materialized, but whose connectivity with the tracking machines—these machines provide, after all, recognition, imitation, observation, and care—starts to wear off. One is hardly recognizable in the midst of the accumulated surveillance images projected on the composite screen. Identity is in crisis. It is in crisis because the visitor’s perception is encouraged to progress as a seeing process in which the locality of self is put into question, without clear resolution, suspended between the here and the there. The installation explores the aesthetic regime of (non)destination to shatter the representative regime of viewer interpellation normally secured by recognition, identification, and resemblance mimetic operations.

*Uncle Roy All Around You*, which premiered at the Institute of Contemporary Arts in London in 2003, is another pivotal materialization of the probing strategy. This work by Blast Theory (a collective of three artists: Nick Tandavanitj, Matt Adams, and Ju Row Farr) is a computer game with live performance that mixes street participants who walk through a city following clues on their PDA in search of a mysterious character called Uncle Roy, with online participants who navigate a parallel 3D model of the same city in order to follow the progress of the street players, communicating and teaming up with them in their search. As with *Desire of Codes*, the work takes advantage of the ambivalence of destination of augmented reality. It does so by leaving the players with a distinct query about trust in and commitment to strangers, questioning, and possibly reorienting and extending the community of players beyond the actual game. The technology supporting the game is relatively low-tech so as to ensure maximum connectivity (global positioning systems are often unreliable in an urban environment where shadows of buildings most often prevent connection): street players are equipped with a handheld computer, which provides them with a PDA map and icon that allows them to declare their position to Uncle Roy. Wireless communication (text and audio messaging) is enabled by commercially available general packet radio service (GPRS) mobile telephone services. After their journey through the city (in a time frame that cannot exceed sixty minutes), the street players end up in Uncle Roy’s office, which shows signs of recent occupancy. But Uncle Roy is not there. Instead, both street players and online players will be left with a query: “Somewhere in the game there is a stranger who is also answering these questions.



Are you willing to make a commitment to that person that you will be available for them if they have a crisis? The commitment will last for 12 months and, in return, they will commit to you for the same period.” If the street player agrees to make the commitment then s/he is paired with an online player who has also agreed.<sup>32</sup>

As the above description makes clear, *Uncle Roy All Around You* relies both on the self-reporting positioning of the street players and GPRS mobile telephony connectivity to create a small community of online and street players in search of the elusive Uncle Roy. Collaboration between players is crucial to the success of finding Uncle Roy’s office. It is never guaranteed, though, for the online player may decide to send messages that will mislead the street players. Although the street and online players are connected, their trajectories lead them to question the social dimension of their connectivity in a context of ubiquitous mobile communication, persistent possibility of localization, and permanent access to social networking technology. Is it a reliable connectivity? What is it to perceive the world intimately with a stranger? Is it possible to trust a stranger? Exposed to the temporariness of their connectivity, they must decide if they will make the further step of commitment to one another. Hence, the game’s destination—the interpellation of street and online players—enters a state of ambivalence: the

“Here you are now” is progressively disclosed in its contingency, transience, and arbitrariness as the game ends. As is the case with the elusive Uncle Roy (the *game’s* destination) whose presence is that of a ghost haunting the searching community—the street and online players (the AR destinations) are never to be fully reached. As temporality and spectrality are experienced, ambivalence sets in, within the game and in relation to the game. As with *Desire of Codes*, it transforms itself into the anxious question, “Where are you now?” And, of course, if anxiety does eventually emerge, it is because this small community of two is now committed. There is no anxiety without commitment.<sup>33</sup>

### THE INTERSENSORY/INTERPERCEPTUAL STRATEGY

In the last two decades, there has been a significant turn in community literature toward an understanding of community as a group of interacting individuals made of differences and endowed with the persistent potential for disagreement. Reconceptualizing the notion of community as a bounding and homogeneous grouping of people, philosopher Linnell Secomb, for example, has stated: “differing needs, objectives, and views expressed through disagreement have to be acknowledged. Instead of insisting on consensus, community needs to be open to disagreement, resistance, and fracture.”<sup>34</sup> One of the key thinkers of this reconceptualization is [Jean-Luc] Nancy, who bases his perspective on the following premise: community is not the bounded cohesive social entity that has allegedly been lost in the development of modernity, but the “expectation” that occurs

**Above**  
*Desire of Codes* (2010) by Seiko Mikami; photo by Ryuichi Maruo; courtesy of Yamaguchi Center for Arts and Media



from within society.<sup>35</sup> His position on community is a reiterated warning against any form of totalitarianism. Community—in its most productive outcome—is a binding/unbinding process that occurs “by others and for others” as opposed to a place of selves. It is the being of individuals that creates community: finite (mortal) singular beings bound without attachments, bound as it were through a “detachment,” a distinction, which is not individuation. Rather, it consists of co-appearing finitudes. Nancy insists: the communality of community cannot be programmed, prescribed, produced, deducted, definitively achieved, or reduced to a common bond between individuals. It corresponds, ethically speaking, to what Maurice Blanchot has called *désœuvrement*: a community not as communion, but as “a bond that unbinds by binding,”<sup>36</sup> made by the interruptions of singularities and the suspension of singular beings. Community, in short, and in an effort to specify the differential compositions of communities, is “beings in common” rather than a “common being.” As specified by geographers Ruth Panelli and Richard Welch, “this is the antithesis of the widespread, idealized form of community understood to be the repository of ‘common being,’ common perspective, or unity in which common identity (rather than diversity and individual being) is the higher order of awareness.”<sup>37</sup> AR’s ambivalence of destination is thus a modality by which unsatisfying deployments of connectedness and community can be problematized and reconfigured. Nancy has himself extended his reflection on community to examine the contemporary developments of globalization, which he sees as a problematic “indistinct totality,” in contrast to the more promising phenomenon of world-forming (*mondialisation*), a “process in expansion” that maintains a crucial reference to the world as a space of human relations.<sup>38</sup> [Marc] Augé’s more recent *La communauté illusoire* partakes of a similar concern for the need to widen the discussion of community in relation to world-forming, as what is now significantly shaped by the most important human experiences of our era: migration and exile, “where notions of itinerary, encounter, project, and border cease to be metaphorical.”<sup>39</sup> Arguing that migrants are today “the true actors of History,” and that “it is with them that must be built tomorrow’s democracy and defended the common good against the totalitarian drifts of all origins,” Augé advocates for a sense of community in which identity and alterity are intimately linked (an individual never belongs only to a single community) and where individuals are incited to cross borders and cultures.<sup>40</sup>

Such reconfigurations are at play not only in the probing *Desire of Codes* and *Uncle Roy All Around You*, but also in the more intersensorial/interperceptual work of [Mathieu] Briand and Christa Sommerer and Laurent Mignonneau—works engaged in the switching of sensations and percepts between users—that show that the community’s binding/unbinding process “by others and for others” has both a political and an aesthetic dimension. Briand’s head-mounted display devices are particularly interesting. Users wearing these helmets can click the button attached to the handheld device and swap their views of the environment with other participants, seeing as it were through the eyes of the other. Equipped with the battery-powered audio-video helmet—a head-mounted display device composed of a built-in video camera on top and a visor located in front of the eyes that doubles as a small screen—the recipient of Briand’s *SyS\*05.ReE\*03/SE\*1/MoE\*2* (2001) or *UBIQ: a Mental Odyssey* (2006–) circulates tentatively in the exhibition space, seeing not only his or her environment through the visor but also, after clicking on the swapping interrupter, private views of other helmeted visitors circulating elsewhere in the same space at the same time.<sup>41</sup> Real time becomes a condition of possibility for altered perception in a space in which private views become public and are replaced by another’s view. The system is only operative if two, three, or four users are engaged in the process, here and now, so as to enable perceptual substitution. This is why Briand prefers the terminology of “lived time” to that of real time: “if no one is there, there is no image. The exhibition was conceived like this so that the visitor is always at the heart of a work and no longer just facing an icon. . . . Personally, I try to conceive works within which the visitor becomes a receiver-emitter, systems that do not lead the viewer to a truth or a response, but rather lead to the self, to introspection.”<sup>42</sup> The visitor is at the center of the work. Still, s/he is an anonymous visitor whose perceptual, communicative, and intersubjective experience cannot be known in advance. This experience is mobilized by the user’s reception and emission of different views of the surrounding space: delayed, split, and switched views, perceived in situations where one never really knows for sure whose view is being displayed. These views persist in their indeterminacy of meaning and destination. This is Briand’s thrust, for sure, when he declares that, in his work, “our usual sense references are perturbed. It is this destabilization that allows us to discover new things. This is the emission/reception that I’m talking about,”<sup>43</sup> and that he wants “to branch out into alternative connections in the brain,” enabling the user to “apprehend the world differently through new perceptions and dive into the *inframince*.”<sup>44</sup>

The AR constitution of space here is a hiatus—a perceptual border—that both links the participants and marks their differences while casting doubt on the verifiability of their differences. Spectators are required to participate interactively, though the process and the result of this interactivity differs from one individual to another.

**Above**

*Uncle Roy All Around Us* (2003–) by Blast Theory; courtesy Blast Theory

**Facing page**

*Mobile Feelings I* (2002–03) by Christa Sommerer & Laurent Mignonneau; photo by Laurent Mignonneau; © 2003 Christa Sommerer & Laurent Mignonneau; supported by France Telecom Studio Créatif, Paris, and IAMAS Gifu, Japan



The spectator becomes a user but never abandons the activity of spectatorship as s/he is perceptually challenged. Connectedness becomes the means by which a unique way of seeing—seeing through the eyes of the other *and* through the questioning of those whose eyes are effectively active in such views—is set into play. The community of users is structured on the very ambivalence of AR, as it constantly oscillates between “Here you are now” and “Where are you now?” (i.e., “I am linked to someone (an anonymous anyone) yet where does my view stop and where does yours start?”; “when I perceive, am I as well necessarily perceived?”). To perceive becomes to see/hear *with* the other, following an unresolved conjunction: *with* is simultaneously *as, despite, through*.

Also experimenting with wireless technology, Sommerer & Mignonneau’s *Mobile Feelings I and II* (2003–04) explore wireless tactility over distance by means of sophisticated micro-sensors and Bluetooth technology. They invite users to hold “mobile feelings” phones (gourd-shaped phones for the first version and egg-shaped for the second) equipped with sensors, vibrators, ventilators, and micro-bio-electrochemical systems that capture their heartbeat, blood volume and pulse, skin conductivity, breath, sweat, and smell. When the devices are held by several participants (each version has six devices for a potential of six participants), a user can select another user and receive that person’s bodily sensations through a vibration, a pulse, a slight stroke, a small wind, or humidity. Within each device a Bluetooth module will either establish a direct connection between the devices in a range of ten meters or communicate with a PC or PDA connected to the internet or to a mobile phone network. These connections allow the devices to communicate with each other wirelessly and send information to remotely located users. Communication can also be oriented toward a specific participant whose image is displayed by the *Mobile Feelings* devices: once the participant is selected by a user, the user will receive the other participant’s body data through specific tactile sensations: a pulse, a vibration, wind or humidity, a push or a stroke. The innovativeness of these devices lies in their sensor and tactile settings, which allow participants to communicate

with strangers not, as is now habitually the case, via voice or images, but through bodily properties usually suppressed in predominant Western regimes of hygiene: smell and sweat. The emphasis put on the tactile experience is also interesting as it reduces, though never eliminates, the sensory input channels of vision and sound. These channels are constantly negotiating with tactility, even more so in cases when users are strangers remotely located in relation to one another.

The communities that emerge from such AR settings are communities made out of participants who can never easily settle into a resolved connection, precisely because of the need to decipher the nature of the tactile sensations and bodily properties communicated by the devices. The artists may well say that “*Mobile Feelings* devices allow remote users to feel each others’

heartbeat and breath from a distance,” almost “instantaneously,” and that the “strong sense of bodily connection through these devices” is “similar to ‘holding each other’s heart in their hands’ and feeling the other’s heartbeat and strength.” Users are in fact situated in an environment that continuously needs adjustment, negotiation, and interpretation. The allegedly “immediate” haptic feedback is, after all, a translation of the frequency and strength of the user’s heartbeat or breath that is itself initially received via the wireless Bluetooth and relayed as data to the actuator.<sup>15</sup> There is nothing direct, instantaneous, homogeneous, and immediately binding or reflexive in the experiencing of these communicative devices. Recent critics of their work, however, and the artists themselves, have refuted these intersensorial adjustments, adaptations, and negotiations to emphasize the participatory and immediacy dimensions of the work. Peter Weibel, for example, describes the work of Sommerer & Mignonneau “as a form of participation,” a “User art” that turns the spectator into an “emancipated consumer” who “can co-design the world and interact with the world. . . . thus change the world through his or her interactions.”<sup>16</sup> This view of interaction as a form of participation that de facto can act on the world is highly problematic, mainly because crucial terms—participation, interactivity, change, the emancipated consumer—are taken for granted, as though they could be assessed out of context and outside any discussion on aesthetics. Errki Huhtamo similarly refers to Sommerer & Mignonneau’s use of tactile and haptic interfaces as emblematic of interactive art at its best. For Huhtamo the value of interactive art lies on its eradication of the idea of distance that otherwise only succeeds in distracting the spectator “from the burning social and political issues ‘outside the frame.’” “It was left to interactive art,” he writes, “to redefine the artwork’s relationship to the viewer in a more decisive and radical manner. The idea of distance is abolished, and the ‘haptic gaze’ deemed insufficient. The interactive artwork unleashes its meanings only through an active and continuous interaction with the viewer (turned into an ‘interactor’).”<sup>17</sup> Meanwhile, Roy Ascott speaks of the work as “a field of aesthetic experience in which the re-generation of our own being can take place,” while referring explicitly to *Mobile Feelings* as a

telematized experience that opens up to the most central of human experiences, “the exchange of feelings through the intimate biology of the body, blood, sweat and tears.”<sup>40</sup>

Such descriptions end up trivializing centuries of art that have privileged the interpellation of the addressee as a “mere” spectator. They deny the perceptual questioning at play in Sommerer & Mignonneau’s AR works and the ways in which the smooth, direct, and immediate “exchange of feelings” is decidedly complicated by the affirmed ambivalence between the asserting “Here you are now” and the questioning “Where are you now?” As in Briand’s *SJS\*05*, *ReE\*03/ SE\*1/MoE\*2* and *UBIQ: a Mental Odyssey*, connectivity is set up so that the proximity, directness, and waning of distance it is assumed to establish are thickened, discontinued and reconnected, re-distanced, re-mediated, and surmounted by the user’s intersensorial acts of adaptation to culturally denigrated bodily properties. Although there is intersubjectivity processing in real-time, and what literary critic Steven Connor, speaking of intersensoriality, has called a complex, “an indefinite series of integrations and transformations” through the mixing of senses (smell, touch, sight, and hearing), these works do not offer any synchronicity resolution.<sup>49</sup> Nor do they erase the inevitable noise of mediated transmission.

## TO CONCLUDE, ON TIME

The crossings of the aesthetic, representative, and ethical regimes of art, articulated in the probing environments of Mikami and Blast Theory, as well as in the intersensorial/interperceptual environments of Briand and Sommerer & Mignonneau, take their fundamental innovativeness from their insertion of time within the otherwise spatial practice of augmented reality. For the surmounting of borders is a temporalization of space, as much as probing and interperceptual environments are an inscription of phenomenological time as passage. In these practices, AR environments become what philosopher Bernard Stiegler has called “temporal objects.”<sup>50</sup> This temporalization might seem at first problematic. It is for Stiegler. In fact, Stiegler is quite critical of temporal objects—a category that includes radio, cinema, television, video gaming, advertising, the music industry, among others—because their main operational feature is to objectify (dispossess from humans) the flow of time (“l’écoulement du temps”). Their flow coincides with the passing of time of the human consciousness that perceives them, a process that allows human consciousness to synchronize itself with the temporality of these objects and yet—following Stiegler here—progressively replaces human consciousness. In contrast to non-temporal objects (namely, books) where the reader’s consciousness still deploys its own temporality, the spectator, listener, or user consumes temporal objects by synchronizing with them, losing part of his or her consciousness in that process. Cultural industry will exploit the consumer’s synchronization with temporal objects for its own economic ends. Still, as I have attempted to show in my examination of augmented reality art, temporal objects are not necessarily destined for the narrowing of consciousness.

AR works propose temporal objects—image, sound, and touch technological devices—that use the passing of time not as a mere passing, but as a passing-with-perception/cognitive-shifts, which

in fact affirms subjective self-consciousness and self-temporality. The flow of consciousness is not simply produced by the objects. It is produced by the ambivalently interpellated user. In fact, it is when the ambivalence of destination is denied that time stands still in the instantaneity of mobile connectivity and ad-hoc groupings. In the end, what the probing and interperceptual AR environments do is alter one of the dominant temporalities of today: instant time. Mikami’s *Desire* activates a perceptuality that progressively unfolds as a seeing process in which the locality of self is suspended between the here and the there, between the sense of self as “self” and the encoded/surveilled self. Blast Theory’s *Uncle Roy* provides the possibility to stretch the life of the community, a stretching that modifies the latter into a form of engagement and liability. Briand’s *UBIQ* and Sommerer & Mignonneau’s *Mobile Feelings* activate perceptual shifts and interchangeabilities that provide to snapshot perceptions what cognitive neuroscientists Kevin Ochsner and Stephen Kosslyn have called the “delay . . . necessary for memory encoding.”<sup>51</sup> [Rafael] Lozano-Hemmer’s *Reaction Diffusion* (2009) and *Frequency and Volume* (2003–) are AR environments not examined here, but that nevertheless extend interculturality the sensorial/perceptual/cognitive horizon shifts articulated in the works of Mikami and others. In each case, community becomes the means by which perception is renewed, while perception becomes the means by which community is also renewed. AR is indeed a perceptual predicament.<sup>52</sup>

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**NOTES 32.** *Blast Theory, Uncle Roy All Around You*: [www.blasttheory.co.uk/bt/work\\_uncleroy.html](http://www.blasttheory.co.uk/bt/work_uncleroy.html). **33.** Eric Kabish, designer of *Dataspace* (2006–), a periscope device installed in a vehicle for mobile urban sighting, mapping, and narrative, has recently advocated for the need to turn participation into a form of engagement. Although his critique does have the merit of complicating the notion of participation by asking potential users to engage the work as authors, it seems more productive to insert the question of engagement within the development of the artwork, as is the case with Blast Theory’s *Uncle Roy All Around You*. His critique is still quite insightful: “We must move from aspirations toward participation in our media toward true engagement. Participation has become a buzzword, and actions as simple as dragging a slider have been deemed participatory. Participation is not simply enlisting subjects to become involved, such as mapping bio-indicators or asking for annotations, etc. In some cases participants become as much subjects of the output as they are authors, or they input content in very rudimentary ways. Perhaps after-media can aspire not just to capture participation but also to enable it in ways where our systems and artworks grow from the input of participants, rather than simply representing that input. In *Dataspace* we are doing this by placing people into a real-world environment where they both browse and author narratives about the places they are traversing and living.” See <http://nickm.com/post/2010/02/dac09-proceedings-noiv-online/>. **34.** Linnell Secomb, “Fractured Community,” *Hypatia* 15 (2000): 137. **35.** Nancy, *La communauté désœuvrée*, 35. My translation, as all other passages from the book. (For the English version see Nancy, *The Inoperative Community* (Minneapolis: University of Minnesota Press, 1991). **36.** *Ibid.*, 42, 45, 78, 79, xl. **37.** Ruth Panelli and Richard Welch, “Why community? Reading difference and singularity with community,” *Environment and Planning A* 37 (2005): 1595. **38.** Nancy, *The Creation of the World or Globalization*, trans. and introduction by François Raffoul and David Pettigrew (Albany, NY: State University of New York Press, 2007). **39.** Marc Augé, *La communauté illusoire* (Paris: Éditions Payot & Rivages, 2010), 45. This is my translation, as are all other passages from the book. **40.** *Ibid.*, 49. **41.** Gregory Volk, “Back to the Bosphorus,” *Art in America* 90, no. 3 (March 2002): 45. **42.** Mathieu Briand, in Etienne Jouanno, “Mathieu Briand: Hacking Contemporary Reality,” trans. Rosemary McKisack, *Flash Art* 37, no. 238 (October 2004): 115. **43.** Briand, in Jouanno, 116. **44.** *Ibid.*, 115–116. **45.** Grefried Stocker, Christa Sommerer, and Laurent Mignonneau, eds., *Christa Sommerer and Laurent Mignonneau: Interactive Art Research* (Vienna: Springer-Verlag, 2009), 202, 207. **46.** Peter Weibel, “Sommerer & Mignonneau’s Contribution to the Algorithmic Revolution,” in Stocker, Sommerer, and Mignonneau, 19. **47.** Erkki Huhtamo, “Tactile and Haptic Interaction in the Works of Sommerer & Mignonneau,” in Stocker, Sommerer, and Mignonneau, 33. **48.** Roy Ascott, “Absorption in the Art of Sommerer & Mignonneau,” in Stocker, Sommerer, and Mignonneau, 191. **49.** Steve Connor, “Intersensoriality,” a talk given at the “The Senses Conference,” Thames Valley University, February 6, 2004; <http://www.bbk.ac.uk/english/skc/intersensoriality/>. **50.** Bernard Stiegler, “Le désir asphyxié, ou comment l’industrie culturelle détruit l’individu,” *Le Monde diplomatique*, June 2004; <http://sitecon.free.fr/stiegler.htm>. **51.** Kevin N. Ochsner and Stephen M. Kosslyn, “The Cognitive Neuroscience Approach,” in Benjamin Martin Hly and David E. Rumelhart, eds., *Cognitive Science* (London: Academic Press, 1999), 349. **52.** This essay was written in the context of my participation in the research group MIXARRT, McGill University. I would like to thank colleagues Olivier Avelin, Darin Barney, and Jonathan Sterne for their feedback on parts of the essay.