

## Kristin Lucas's *Refresh*: Embodied Imaginings

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### Résumé de l'article

Les performances de la pionnière d'art digital féministe Kristin Lucas présentent des personnages autobiographiques affectés matériellement au sein d'environnements numériques. Dans *Refresh*, Lucas dépose une requête inhabituelle auprès d'une cour en Californie : le changement légal de son nom – de Kristin Sue Lucas... à Kristin Sue Lucas. L'artiste articule cette action de renouvellement personnel en se servant d'un langage spécifique aux médias numériques : des termes tels qu' « actualiser » (refresh), « cache », « redémarrer » (reboot), permettent aux spectateurs d'imaginer en eux-mêmes une telle transformation. Le présent article soutient que l'imagination est un processus physiologique et matériel. Puisant dans les théories du néo-matérialisme, des sciences cognitives et de la neuroscience, *Refresh* invite le public à habiter activement des états de conscience comme des entités impliquées dans des milieux numériques. Je postule que ces actes d'imagination consciente se déroulent comme des processus physiologiques et matériels – qui en l'occurrence sont mis en valeur à travers des principes propres aux pratiques des arts conceptuels et des nouveaux médias. Je soutiens que *Refresh* ne déclenche pas cette réaction, mais l'offre plutôt comme un mode d'engagement optionnel pour ceux qui voudraient consciemment s'ouvrir aux propos déclarés du projet. À cet égard, je propose une approche qui s'écarte des recherches neuro-esthétiques, qui ont tendance à se concentrer sur l'activité neuronale non consciente. Finalement, je suggère que dans le cadre de l'expérience artistique, le choix actif et la conscience autoréflexive font souvent partie intégrante de l'engagement esthétique.

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# Kristin Lucas's *Refresh*: Embodied Imaginings

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## Résumé

Les performances de la pionnière d'art digital féministe Kristin Lucas présentent des personnages autobiographiques affectés matériellement au sein d'environnements numériques. Dans *Refresh*, Lucas dépose une requête inhabituelle auprès d'une cour en Californie : le changement légal de son nom – de Kristin Sue Lucas... à Kristin Sue Lucas. L'artiste articule cette action de renouvellement personnel en se servant d'un langage spécifique aux médias numériques : des termes tels qu'« actualiser » (refresh), « cache », « redémarrer » (reboot), permettent aux spectateurs d'imaginer en eux-mêmes une telle transformation. Le présent article soutient que l'imagination est un processus physiologique et matériel. Puisant dans les théories du néo-matérialisme, des sciences cognitives et de la neuroscience, *Refresh* invite le public à habiter activement des états de conscience comme des entités impliquées dans des milieux numériques. Je postule que ces actes d'imagination consciente se déroulent comme des processus physiologiques et matériels – qui en l'occurrence sont mis en valeur à travers des principes propres aux pratiques des arts conceptuels et des nouveaux médias. Je soutiens que *Refresh* ne déclenche pas cette réaction, mais l'offre plutôt comme un mode d'engagement optionnel pour ceux qui voudraient consciemment s'ouvrir aux propos déclarés du projet. À cet égard, je propose une approche qui s'écarte des recherches neuro-esthétiques, qui ont tendance à se concentrer sur l'activité neuronale non consciente. Finalement, je suggère que dans le cadre de l'expérience artistique, le choix actif et la conscience autoréflexive font souvent partie intégrante de l'engagement esthétique.

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Nothing comes from atoms.  
All the bodies of the world shine with the beauty of their forms.  
Without these the globe would only be an immense chaos.  
In the beginning God made all things, so that they might  
generate something.  
Consider to be nothing that from which nothing can come.  
You, O Democritus, form nothing different starting  
from atoms.  
Atoms produce nothing; therefore, atoms are nothing.

I begin this essay<sup>1</sup> with a seventeenth-century Jesuit prayer, quoted by literary theorist Stephen Greenblatt in a book he wrote about Lucretius.<sup>2</sup> The prayer is interesting because it refutes atomistic thinking, and it does so in such a compelling way. The Jesuits are not claiming that atoms do not exist, nor are they suggesting that a belief in atoms is heretical (at least not in this particular instance). Instead, they are acknowledging different models for understanding and they are rejecting the atomistic model on the basis that, in their opinion, it fails to explain the aspects of the world that they consider meaningful. At the end, the prayer goes on to dismiss the deterministic implications of atomistic thinking. Granted, matter may be broken down into atoms, but the beauty of the world is in its forms, rather than its components.

The prayer resonates with twenty-first century statements made by the philosopher of science Mary Midgley as she queries the deterministic implications of Richard Dawkins's concept of the selfish gene. Midgley states, "As for genes, it is not in fact seriously suggested that, as a matter of historical fact, they ever existed as independent items, precursors and architects of the organisms that now embody them."<sup>3</sup> Like the prayer, her statement challenges atomistic thinking by locating meaningful

agency at the level of forms, or organisms, rather than in their fundamental components.

Atomistic thinking thrives in contemporary society. Technoscientific methodologies tend to produce very tiny subjects: DNA sequencers give us genes, particle colliders give us sub-atomic particles, fMRI scanners give us neurons, and digital coding gives us ones and zeros. My research on neuroaesthetics has made me critical of deterministic constructions, particularly those coming from the humanities, which draw from the authority of neuroscience to advance deterministic theories of art experience. An example from John Onians:

More habitual terms [than "brain"], such as "mind" and "intelligence," with their lofty, even godlike, associations, distort our view of the people to whom they are credited... by over emphasizing the active character of their relation to the world.<sup>4</sup>

These sentiments exemplify a reductive tendency within some neuroaesthetic literature. Do we really need a corrective to the notion that people have an active relation to the world? Does a focus on the atomistic functions of the brain necessarily configure humans as passive subjects? I argue that the answer is no to both questions, especially in the context of art experience, wherein active choice and self-reflexive awareness are integral to aesthetic appreciation.

However, atomistic thinking does not have to take deterministic forms, and is in some ways necessary for posthumanist explorations of new materialism. Karen Barad, Jane Bennett, and Barbara Maria Stafford are each working in different disciplines to re-examine ontologies of matter while challenging deterministic models. Barad, in particular, embraces atomism as an epistemological frame for rethinking materiality. In a recent lecture on matter and time she explained,

This is not merely about particles and the micro-world. Indeed there is no micro-world versus the macro-world. Scale of space and time do not pre-exist; space-time mattering is iteratively reconfigured with each intra-action. But electrons and atoms are good to journey with because they are not so easily seduced into the times of linear history, nation and family. They spark new queer political imaginings that cut across space-times. At stake are questions of justice and responsibility.<sup>5</sup>

Barad understands matter itself as having an active character in the world, and she employs atomistic thinking as a strategy for framing her argument. This is one compelling example of how the consideration of objects and organisms as complex agglomerations allows for vivid imaginings of the energetic, inter-subjective, and co-constitutive buzzings of our component parts.

I use the term “imaginings” intentionally here, as I shall argue that the consideration of imagination itself as a material, physiological process has exciting implications for art theory and practice. In this paper, I draw on theories from cognitive science, supported by atomistic findings in neuroscience, to examine how artist Kristin Lucas asks audiences to imaginatively embody entities implicated in digital environments. The act of self-conscious imagining, I suggest, unfolds as a material, physiological process, evoked here through conventions of conceptual and new media art practice.

A pioneer in feminist digital art and new media, Kristin Lucas has been inhabiting technological environments since the late 1990s. She frequently performs autobiographical characters materially impacted within digital environments—cyborg entities who are technologically implicated at the atomistic, material levels of their being. Her 1996 video *Watch Out For Invisible Ghosts* was structured like a video game: the artist, garbed in goggles and helmet, battled a range of foes—kick-punching and joy-stick manoeuvring with Riot Grrrl-esque vitality—yet at the same time the character inhabited the medium of the video itself as a broadcast entity, vulnerable to glitches, infections, and interference from invasive energy fields. In her 2014 four-channel video installation, *Air on the Go*, Lucas simultaneously performed in the character of a robotic surveillance drone, a figure observed by the drone, and an aggregate of anonymous Internet voices culled from “comment threads and technical forums about system upgrades, personal preferences, statistical comparisons, biometric feedback and more.”<sup>6</sup>

Lucas’s performance *Refresh* has been disseminated as the story of an event that took place over a two-week period in the fall of 2007, with documentation in the form of written texts and digital images. The dissemination continued through exhibitions and staged re-enactments performed by a diverse range of participants. The initial event took place as follows:

a few months after her thirty-ninth birthday, Lucas, who was living in Oakland at the time, put in a formal request to have her name legally changed at the Superior Court of California in Alameda County. This name change was unusual, however, because her legal name was Kristin Sue Lucas, and she wanted it legally changed to Kristin Sue Lucas. The process unfolded in stages.

First, Lucas was legally required to take out an advertisement in a local newspaper giving public notice of her request. Then she was mandated to present the reason for her request at a court hearing. The court proceedings were documented in an official transcript, which the artist made available for download on her website. The transcript shows that at the first court hearing, on 21 September 2007, Lucas verbally provided the presiding judge with the following explanation for her request.

Your honor I am hear [*sic*] for a refresh.  
 A renewal of self.  
 I consider this act to be a poetic gesture and a birthday gift.  
 I am ready for an update.  
 An intervention into my life.  
 I am here to be born again as myself, or at the very least, the most current version of myself.  
 I am prepared to let go.  
 To empty my cache.  
 To refill the screen with the same information.  
 To reboot knowing that the new Kristin Lucas may experience a tremendous sense of loss, detachment, or disappointment, or joy.  
 Kristin Lucas is ready for change.  
 And Kristin Lucas awaits her replacement.<sup>7</sup>

Adopting terms such as “refresh,” “update,” “cache,” “screen,” and “reboot,” Lucas positioned herself firmly within the discourse of digital technology. She deployed the legal system as a familiar formal device, a widely recognized, externally imposed process operating independently from her subjective manipulations. The court ruling provided a binary structure analogous to digital processes such as pressing a button or flipping a switch: the judge could only accept or deny Lucas’s request. This way she submitted herself to a procedure that reified her own position. Once the judge agreed to grant the name change, the “refresh” occurred instantaneously, triggered by a state-sanctioned procedure that, though initiated by the artist, unfolded as a process beyond the artist’s control. While Lucas’s name was legally changed, it nevertheless also remained the same. Like a digital file that had been overwritten by an identical file, the legal procedure resulted in a new instantiation of the artist without necessarily producing any observable evidence of the transformation.

While readers unfamiliar with the artist's oeuvre may dismiss this piece as a stunt or prank, Lucas's video and performance history supports a more complex reading. As a performer, she explores the entanglement between the material conditions of broadcast technologies and her own physiological processes. Ghosts haunt the video signal, and human hosts become involuntary carriers for electronic interference, their very material existence glitching as a form of dissolution and disease. *Involuntary Reception* (2000) consisted of a website with audio, video, and text components through which the character of the artist communicated as a kind of technological poltergeist, an ephemeral creature with an enormous electromagnetic field, able to "self-broadcast via satellite." In this work, Lucas presented the body itself as a technological entity, capable of transmitting itself through digital means. At the time, however, she submitted this digital dispersal as a precarious mode of embodiment, akin to a mental illness that enhances certain capacities while threatening the stability of its host.

You know, things happen, like computers crashing, screens freezing. I can erase chips pretty easily, I mean you can re-record. You can rewrite the chip, but that doesn't mean it's going to be protected.<sup>8</sup>

When logging onto the *Involuntary Reception* website, it appeared as if one's Internet connection had been involuntarily infiltrated by a fragmented, frightened entity, herself receiving and broadcasting embodied signals that she could not control. All of the characters that Lucas has performed imply human vulnerability to invisible yet material conditions of life in a technoscientific culture, such as electrical fields, wireless signals, and surveillance.

At the court where Lucas petitioned for her refresh, the judge recognized the sincerity of the request and took time to fully consider the legal implications.

JR: How many more times are you going to come to the court and change your name, because you're changing every fifteen minutes, or...?

KL: Well, I've been thinking about this change for a year and it brought me here today and I would like to experience what the differences might be. I can't make that decision about how many times I might need a refresh. But I want to respect the court's time, as well.

JR: Well...

KL: And I'm not here to abuse the system.

JR: I, I don't think that you are.

KL: Okay. Thank you.

JR: And I don't mind the time. I just don't know that I have

the legal authority to change your name when it's not a change. The code sections talk about changing. Can I give you an order that doesn't change your name at all? That keeps your name the same? Is that the same as granting a name change? And I think not. And I'm going to do this, I'm going to continue this matter for two weeks... and try to think about these issues in this time...<sup>9</sup>

The judge declared a two-week recess to consider Lucas's petition. When she returned to court on 5 October 2007, he granted her request.

In an interview with artist and writer Marisa Jahn, Lucas described her experience of renewal at this moment in her second court appearance:

[My refresh] felt instantaneous with the judge's ruling. There was an immediate change. Blood rushed through my body, and I experienced a sense of detachment from everything that had happened before—it was fun, I loved it. I felt different.<sup>10</sup>

While these words vividly convey her experience in the courtroom, they were not published until three years after the original event. During that time, *Refresh* documentation was widely disseminated through a variety of international exhibitions and artist residency projects, as well as the artist's website. In 2007, the year of the refresh, she put together a two-part exhibition that originated at Postmasters Gallery in New York (2007) and toured to And/Or Gallery in Dallas (2008) and the Shift Electronic Arts Festival in Basel (2008). For this exhibition Lucas displayed a clipping of the newspaper announcement of the hearing along with a copy of the court transcript and the court sketch. For an adjacent installation titled *Before and After*, Lucas invited twenty-five artists to create portraits of her from before and after the transformation. In other words, rather than limiting interpretations of her own embodied experience of the refresh by simply explaining it, Lucas opened up the project to aesthetic responses by other artists.

Lucas has continued to extend the *Refresh* project through a variety of iterations. For the series titled *Refresh Cold Reads*, she invited people to adopt the roles of herself and the judge, reading aloud from the court transcripts as a public performance. In 2010, at the New Museum in New York, she asked a man named Cesar James Alvarez to play her part. She chose this individual because he was named after two men, Cesar Caucé and Dr. James Waller, who were murdered during a massacre by the Klu Klux Klan in 1979. In Lucas's words, "[Cesar James Alvarez] has lived, together with the others, in remembrance of those who died. His name has always signified the loss of a close family friend along with the hope for rebirth, healing, and courage to stand up for justice."<sup>11</sup> This broadens the relevance

of the *Refresh* performance beyond Lucas's embodied experience to include those of others. She similarly extended the role of the judge by choosing Bob Edgar to read his part. Edgar was Vice President of Donor Relations for a New York community foundation—not a judge, but someone in another position of social responsibility.

In some iterations of *Refresh Cold Reads*, Lucas chose people to adopt the roles, and in others she opened up participation to include audience volunteers. In each case, she extended the opportunity for an embodied refresh beyond her own personal transformation. Many people only encounter the project through documentation, word of mouth, and the written transcript that the artist has both reprinted in the form of an artist's book and disseminated online as a PDF. In every manifestation of the project, the artist expressed her hopes for renewal, but she did not describe the outcomes of the refresh, leaving it to audiences to imagine for themselves the ways it might be embodied.

### Material Imaginings

*Refresh* is ultimately a proposition that renewal can take place through a process of duplication, a mimetic shift in which the artist becomes a “version” or “replacement” of her former self. For me, this project invokes inquiries arising in cognitive science about how imaginative acts of simulation may manifest as physiological experiences.

In neuro- and cognitive science, the process of assessing another's mental state is called “mindreading.” Two competing theories have emerged to explain what this cognitive capacity entails. The traditional approach to mindreading, amusingly called theory-theory, supposes, according to philosopher of consciousness Emma Borg, that “grasping the mental states of others is a matter of applying one's theory of common-sense, belief-desire psychology to that other person.”<sup>12</sup> In other words, in order to understand someone else's frame of mind, one must cognitively and rationally consider how they must be feeling. The other formulation, simulation theory, both challenges and complements theory-theory by suggesting that in coming to understand another person's feelings, one can also form an embodied simulation of the other person's state. Cognitive scientist Alvin Goldman explains,

People often say that they understand others by empathizing with them, by putting themselves in others' shoes: “I feel your pain.” Is there any truth to this expression? Contemporary neuroscience has determined that there is much truth to it. When people observe others in pain, part (though not all) of their own pain system is activated. This provides an initial piece of scientific support for the intuitive idea that

understanding others is mediated by putting ourselves in their (mental) shoes. In its bare essentials, this is what the simulation theory holds.<sup>13</sup>

Here, it is not the authority of neuroscience that interests me as much as its inherent materialism. Goldman asserts that parts of the brain that deal with pain are partially activated when someone sees another person in pain, supporting his argument with atomistic findings from neuroscience. In particular, he draws on mirror neuron theory, which emerged out of the discovery that certain neurons in the brain become active in the same way when one is performing an action as when one is observing another perform the action. I have published elsewhere a critical examination of mirror neuron theory and art experience.<sup>14</sup> Of particular relevance to my analysis of *Refresh* is the suggestion from neuroscientific research that mirror neurons can engage even in the absence of visual cues. Neuroscientist Giacomo Rizzolatti and his colleagues explain,

We theorized that if mirror neurons are truly involved in understanding an action, they should also discharge when the monkey does not actually see the action but has sufficient clues to create a mental representation of it. Thus, we first showed a monkey an experimenter reaching for and grasping a piece of food. Next, a screen was positioned in front of the monkey so that it could not see the experimenter's hand grasping the food but could only guess the action's conclusion. Nevertheless, more than half the F5 mirror neurons also discharged when the monkey could just imagine what was happening behind the screen.<sup>15</sup>

This research indicates that a mere suggestion of an action may be enough to trigger mirror neuron activity, as long as that action is understood by, and familiar to, the person who contemplates it. It follows, then, that while *Refresh* was not primarily a visual artwork, audiences who had a prior familiarity with the action of clicking the refresh button on their Internet browsers would not need visual cues in order to simulate the neural activity associated with finger movement in their own motor systems. Again, my interest here is not to argue for a reductive, causal relation between neurons and experience, but to acknowledge the atomistic activity of neurons as part of the field of material, embodied processes that may unfold within a conceptual art experience.

There is another recent finding from neuroscience that is relevant here. According to Goldman, some processes of embodied simulation, such as the firing of mirror neurons, are triggered automatically, while others can occur both consciously and intentionally. He explains his theory of enactment imagination: “To enactively imagine seeing something, you must ‘try’ to *undergo* the seeing—or some aspects of the seeing—despite the

fact that no appropriate visual stimulus is present.”<sup>16</sup> Goldman argues that even emotional states can be internally induced, “When I imagine feeling elated,” he writes, “I do not merely suppose *that* I am elated; rather I *enact* or *try* to enact, elation itself.”<sup>17</sup> His theory suggests that mindreading the mental states of others occurs, in part, as a physiological process. Furthermore, intentional acts of simulation can also be applied to describe embodied engagements with fiction.<sup>18</sup>

In *Refresh*, Lucas staged a mimetic simulation of herself, but at the same time she invited audiences into a reciprocal relationship with the piece. Like readers of a novel, audiences could decide whether or not to imagine themselves into the embodied scenario that Lucas proposed. The difference between *Refresh* and most forms of fiction is that here the process of voluntary simulation is itself brought into awareness; audiences had to consciously decide whether or not to play along with the artist's deadpan proposition that her non-name change could manifest as a form of physiological transformation.

Lucas not only asked her audience to internally simulate a sense of renewal, but to embody that process as if it were aesthetically akin to the rewriting of a digital file. If one could, as Goldman suggested, “try” to simulate a state of being elated, then one could at least *try* to simulate a state of being digitally refreshed on Lucas's terms.

Anyone who has spent many hours a day interacting intimately with their computer's online processes would be familiar with the action of clicking the refresh button in the browser or emptying their browser's cache. Some may have already experienced a sense of satisfaction and release when, in a single action, old data was wiped away and new data appeared before their eyes. But could this simulation be taken one conceptual step further? Would it be possible to imagine an embodied identification with data in a digital file?

While a digital file can be seamlessly copied, transmitted and replaced over an electronic network, art historian Cadence Kinsey reminds us that digital code has a physical presence, and it is literally inscribed (and re-inscribed) into hardware.<sup>19</sup> As a material entity, a digital file is comprised of discrete components—an electronic compilation of binary code that stands in contrast to the moisture-laden, hormone-steeped and biodegradable human persons who have given rise to the technology. And yet, as people engage more and more with digital technologies, are we not increasingly inflected by digital aesthetics? Affect theorist Anna Gibbs explains,

[Mimetic communication] might...be conceived as a contagious process that takes place transversally across a topology connecting heterogeneous networks of media and conversation, statements and images, and bodies and things.<sup>20</sup>

Mimetic simulation, as a collective, cultural capacity, entangles people with one another, and with the various material agents in their environment, including computers and the Internet. The simulations proposed by *Refresh* entail technological embodiment. Lucas, in her plea before the judge, made the following implications,

I feel that the technology that we have available can make... change for us. It's like, replacing information. The computer, the technology, the system has a way of erasing you, and... I feel that...this is a change I have seen in my lifetime. And I, I just, I'm really interested, in...just reestablishing, uhm...I felt I had laid that out for you but it's difficult to describe.<sup>21</sup>

Lucas situated her refresh as a reclamation, a form of rebirth for a technologically inflected entity. The processes took place in the linguistic and formal context of the legal system, disseminated through the linguistic medium of the transcript, but the artist explicitly sought an embodied experience that could not be easily translated into words.

*Refresh* asked for indulgence and conscious acts of imagination on the part of willing audiences. In my analysis of this art work, the atomistic findings of neuroscience are invoked not to explain or underwrite the art experience, but to make the materiality of art and digital culture more vivid in our own embodied imaginings. The piece did not automatically trigger internal simulations, rather it invited audiences to imagine their own versions of a refresh, if they so chose. Thus, to challenge Onians, the embodied subjects of art experience are here positioned as having a supremely active character. The various participants in an art work may shine with the beauty of their forms, but *Refresh* helps us remember that forms are comprised of contingent materialities, buzzing with co-constitutive relations between variously scaled bodies acting in the world.

## Notes

- 1 Much of this essay is drawn from a chapter of my recent dissertation, “Repositioning Neuroaesthetics Through Contemporary Art,” York University, 2014. Here, I am reconsidering Kristin Lucas's *Refresh* through the lens of new materialism and atomistic thinking.
- 2 Stephen Greenblatt, *The Swerve: How the World Became Modern* (New York, 2011), 250.
- 3 Mary Midgley, *Science and Poetry* (London & New York, 2001), 5.
- 4 John Onians, *Neuroarthistory: From Aristotle and Pliny to Baxandall and Zeki* (New Haven, 2008), 14.
- 5 Karen Barad, “Re-membering the Future, Re(con)figuring the Past: Temporality, Materiality, and Justice-to-Come,” keynote address, Feminist Theory Workshop, Duke University (March 2014,

- published on YouTube, 19 May 2014), <https://www.youtube.com/watch?v=cS7szDFwXyg>.
- 6 Kristin Lucas, artist's statement for *Air on the Go* (2014), [http://www169.pair.com/klucas/archive/air\\_go.html](http://www169.pair.com/klucas/archive/air_go.html).
  - 7 Transcript, Superior Court of California, County of Alameda, Kristin Sue Lucas, petitioner, Case No. RG07336497, 21 September 2007, <http://www.refresh-archive.com/documents/transcript1.pdf>.
  - 8 Kristin Lucas, *Involuntary Reception*, online artwork hosted by Electronic Arts Intermix, 2000, <http://www.eai.org/involuntary/job.html>.
  - 9 Transcript, Superior Court of California.
  - 10 Kristin Lucas and Marisa Jahn, "'Refresh': Kristin Lucas sur la multiplicité de soi: Conversation entre Kristin Lucas et Marisa Jahn" *.dpi* 17 (February 2010), <http://dpi.studioxx.org/demo/index.html%3Fq=fr%252Fno%252F17%252Frefresh-sur-multiplicite-de-soi-Conversation-Kristin-Lucas-Marisa-Jahn.html>.
  - 11 Kristin Lucas, artist's statement for *Refresh Cold Reads*, [www.kristinlucas.com/refresh\\_coldreads.html](http://www.kristinlucas.com/refresh_coldreads.html).
  - 12 Emma Borg, "If Mirror Neurons Are the Answer, What Was the Question?," *Journal of Consciousness Studies* 14, 8 (August 2007): 6.
  - 13 Alvin I. Goldman, *Simulating Minds: The Philosophy, Psychology, and Neuroscience of Mindreading* (New York, 2006), vii.
  - 14 Sally McKay, "No Neuron Is an Island: a Neuroaesthetic Inquiry into Omer Fast's Mimetic Interactions," *Aesthetics and the Embodied Mind: Beyond Art Theory and the Cartesian Mind-Body Dichotomy*, ed. Alfonsina Scarinzi (Dordrecht, 2015), 315–30.
  - 15 Giacomo Rizzolatti et al., "Mirrors in The Mind," *Scientific American* 295 (2006): 56–58.
  - 16 Goldman, *Simulating Minds*, 151.
  - 17 Goldman, *Simulating Minds*, 47.
  - 18 Goldman, *Simulating Minds*, 282–87.
  - 19 Cadence Kinsey, "Matrices of Embodiment: Rethinking Binary and the Politics of Digital Representation," *Signs* 39, 4 (Summer 2014): 897–925.
  - 20 Anna Gibbs, "After Affect: Sympathy, Synchrony, and Mimetic Communication," *The Affect Theory Reader*, ed. Melissa Gregg and Gregory J. Seigworth (Durham & London, 2010), 187.
  - 21 Transcript, Superior Court of California.