Resisting the Body Invasion:
Critical Art Ensemble, Tactical Media, and the Audience

Thesis

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Abstract

"BioCom: building a better organic platform;" "BioCom: growing to meet your needs;" "BioCom: creating superior labor one worker at a time."[1] Though these catchy advertising slogans seem genuine, the company they advertise does not exist. BioCom is a fictional construct created by Critical Art Ensemble (CAE) as a part of their performance *Flesh Machine* (1998). CAE, a semi-anonymous group of five tactical media practitioners, have focused on the exploration of the intersections between art, critical theory, technology, and political activism since the collective's creation in 1986.

In response to the increasing impact of the biotechnology industry, from 1998 to 2004 CAE created seven projects focusing on issues ranging from reproductive technologies to genetically modified organisms. Through audience participation, the disruption of the traditional relationship between audience and performer, the use of actual scientific knowledge and processes, and digital performance techniques, CAE strove to create a space for critical dialogue surrounding these issues.

Drawing on CAE's own published material and scholarly analysis of their work, this thesis explores the specific performance strategies employed by CAE, places CAE's work in the theatrical legacy of the avant-garde, and contextualizes it in its own historical moment, marked by debate surrounding the possibilities of biotechnologies.

[1] critical-art.net.

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Table of Contents

List of Figures

Chapter 1
Introduction: Critical Art Ensemble, Tactical Media Practitioners

Why is it he feels some line has been crossed, some boundary transgressed? How much is too much, how far is too far?

—Margaret Atwood*, Oryx and Crake*

In her novel *Oryx and Crake* (2003), Margaret Atwood imagined a future where genetic engineering and experimentation have become an integral part of everyday life, where human organs are grown inside pigs, where animal hybrids can be owned as pets, and where body modifications are limitless. This world is ultimately decimated by a deadly virus, putting the survival of the human race in jeopardy. And while raccoon-skunk hybrids might not be available at your local pet store, much of the science in Atwood's novel is not far from reality. As knowledge of genetic structure increases, so does the impact of an ever-growing industry broadly termed "biotechnology"—the application of living organisms and biological processes to the creation and development of consumer products. Biotechnology includes everything from in vitro fertilization to genetically modified foods to tissue and organ growth. The rapid development of these scientific advances and subsequent growth of the biotechnology industry has had dramatic social, cultural, economic and political effects on a global scale. Technologies like genetic testing and cloning trigger questions about the nature of life and what it means to be human, and, as Joanna Zylinska asserts, make the defining and management

of life the "predominant political question today."[1]

The continual expansion of biotech has also prompted a profusion of art engaging with the issues and questions surrounding these scientific advances, loosely defined as bioart: art that involves biological materials as media. Just as the biotechnology industry is a diverse category including many different scientific processes and products, bioart as a genre includes a wide variety of artists and artworks. The work of artist Eduardo Kac is perhaps the most cited example of bioart, especially his "transgenic artwork" *GFP Bunny* (2000), in which Kac genetically modified a live albino rabbit named Alba so that it would fluoresce in the dark.[2] Kac's work can be seen as a touchstone of the broader bioart movement, which is largely based in visual art.[3] While operating within the framework of bioart, the artistic collective Critical Art Ensemble (CAE) engages with biotechnology issues primarily through performance rather than visual art.

CAE was founded in 1986 by Steve Kurtz and Steve Barnes while they were students at Florida State University. Their first projects involved low budget films with minimal technical requirements. A few of the videos from the first year of CAE's activity are available on the collective's website. In the summer of 1987, Kurtz and Barnes were joined by four other artists: Hope Kurtz (Steve Kurtz's wife), Dorian Burr, Claudia Bucher, and George Baker. CAE began with a few small multimedia exhibitions at various locations in the American South. Prior to their first live performance events in 1988, both Claudia Bucher and George Barker left the group. Ricardo Dominguez and

[1] Joanna Zylinska, *Bioethics in the Age of New Media* (Cambridge: MIT Press, 2009), 66.
[2] www.ekac.org/gfpbunny.html.
[3] For example, see the paintings of Alexis Rockman, especially *The Farm* (2000).

Bev Schlee joined the collective shortly after. CAE's membership would remain the same for the next ten years. All of their performances, installations, and publications were created and credited collectively, rarely featuring the names of individual members.[4]

CAE collaborated with other groups on their first performance projects, the first of which premiered in 1988: *Political Art in Florida?* and *Frontier Production*. In 1989, CAE's first large-scale project, *Cultural Vaccines* (1989), was performed. A collaboration with the activist collective Gran Fury, this multimedia event criticized the U.S. government's reactions to the AIDS crisis and resulted in the creation of the first ACT UP chapter in Florida. The next three years saw the creation of several other performance events, including *Peep Show* (1990), *Fiesta Critica* (1991), and *Exit Culture* (1992).

In 1994, CAE published their first book*, The Electronic Disturbance,* which was followed by the publication of *Electronic Civil Disobedience & Other Unpopular Ideas* two years later. Collectively authored by all members of CAE, these two books laid the foundation for CAE's practice for the next ten years, especially the idea of nomadic power and electronic civil disobedience. Following Rosi Braidotti's concept of nomadism, CAE maintains that under late capitalism, power has become a "nomadic electronic flow."[5] In previous historical eras, power was consolidated in castles, government buildings, or corporate offices, and tactics such as strikes, marches, and sit-ins could target specific manifestations of power. But because power has become

[4] Steve Kurtz, qtd. in "The Strange Case of Steve Kurtz: Critical Art Ensemble and the Price of Freedom," by Robert Hirsch, *Afterimage* 32, no. 6 (2005), 26.
[5] Critical Art Ensemble, *Electronic Civil Disobedience & Other Unpopular Ideas* (New York: Autonomedia, 1996), 7.

nomadic, centered in information-capital in cyberspace, CAE calls for new forms of resistance, namely on the electronic level. Electronic civil disobedience targets information; its "primary tactics are trespass and blockages" of government and corporate information systems.[6] In other words, electronic civil disobedience involves the hacking of power structures. All of CAE's work, including those involving live performance, contains elements of electronic civil disobedience.

From 1998 to 2004, CAE turned their attention to issues of biotechnology. They created a total of seven performance pieces focusing on a variety of biotech subjects, from genetic testing to genetically modified foods. Through these performative actions, in conjunction with CAE's anti-copyright manifestos and concurrent acts of electronic civil disobedience, the collective aimed to create a critical dialogue about biotech issues. These performance pieces are primarily pedagogical, although CAE's ultimate goal is resistance against what they call the "body invasion:" global capitalism's molecular infiltration of the human body as the next frontier of profit expansion.

CAE's work underwent a dramatic shift in 2004, when founding member Steve Kurtz was arrested on suspicion of bioterrorism under the USA PATRIOT Act of 2001. Although he was ultimately not convicted of any crime, Kurtz's arrest, the ensuing legal battle, and the subsequent media frenzy sparked international debate on issues of censorship and artistic freedom.[7] The intrusion of the U.S. government into Kurtz's home and CAE's practice influenced the direction of CAE's work; following the events of

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[6] Critical Art Ensemble, *Electronic Civil Disobedience*, 18.

[7] See Rebecca Dana, "In N.Y., Case Of Germs Shifts From Bioterror To Moral Error." *Washington Post*, June 30, 2004; Randy Kennedy, "The Artists in the Hazmat Suits." *New York Times,* July 3, 2005; Gary Young, "Art becomes the next suspect in America's 9/11 paranoia." *The Guardian* (London). June 11, 2004.

2004, CAE began focusing on government surveillance and biological warfare. Additionally, because of the publicity the case garnered and the controversy surrounding the PATRIOT Act, recent discussions of CAE often focus on Kurtz's legal struggles and their implications for artists, instead of an investigation of CAE's actual artistic practices.

Therefore, this thesis will explore CAE's body of work concerning biotechnology: *Flesh Machine* (1998), *Intelligent Sperm On-line* (1999), *Society for Reproductive Anachronisms* (1999), *Cult of the New Eve* (1999), *GenTerra* (2001), *Molecular Invasion*, (2002), and *Free Range Grain* (2003). Through the disruption of the traditional relationship between audience and performer, the use of actual scientific equipment and processes, and digital performance techniques, CAE strove to spark critical dialogue about biotechnology in daily life. Drawing largely on CAE's own writings and remaining performance documentation, I will study the shifts in CAE's performance strategies, locate their work in the theatrical legacy of the avant-garde, and contextualize it in its own historical moment, which is marked by debate on surrounding the possibilities and implication of biotechnology. By intertwining digital and physical performance strategies, CAE strives to create a temporary public sphere in which critical dialogue about biotechnology issues can flourish. In light of cultural anxieties about the rapid spread of genetically modified organisms (the political and economic power of Monsanto, for example) and scholarly fascination with the condition of the posthuman,[8] CAE's immediate and embodied engagement with biotechnology issues through

[8] See Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (New York: Farrar, Straus and Giroux, 2002); Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999); and the work of Donna Haraway.

performance necessitates thorough analysis.

Methodology

CAE's work has clearly been valuable for theory-driven scholarship, and the use of their work by performance scholars as well as the continuing prevalence of biotechnology issues in popular culture necessitates a contextualization of these performances. To that end, I will undertake a detailed analysis and investigation of CAE's performance strategies, how the collective's philosophies are physically implemented in performance, and how their performances changed over time, reflecting developments in biotechnology and the changing goals of CAE. I will draw on several theorists from the fields of theatre, performance studies, and art history to support my historical investigation. Robert Mitchell's concept of vitalist tactics provides a useful starting point for discussing CAE's work, as the specific strategies CAE implements in each of their performances exemplify the vitalism Mitchell theorizes.

To gain an understanding of CAE's goals for their performances, I will examine the project descriptions and original position papers for each performance, which provide their theoretical bases, and a general overview of the actions of each piece. Two of CAE's full-length theoretical works offer a more nuanced elaboration on the collective's relevant theoretical and philosophical positions. These works, *Flesh Machine* (1998) and *Molecular Invasion* (2002), reiterate and expand on the collective's beliefs as expressed in the position papers and present a detailed rationale for CAE's specific performance strategies. Some analytical articles, including Rebecca Schneider's "Nomadmedia" and Gabriella Giannachi's "Exposing Globalisation: Biopolitics in the Work of Critical Art

Ensemble" provide descriptions of specific CAE performances along with their analysis. I will also examine materials and documentation from the many art museums and galleries where the collective has performed, as well as the records and documentation of guest artists with whom CAE has collaborated (these include Beatriz da Costa, Claire Pentecost, Paul Vanouse, and Faith Wilding). This approach will provide an arc of the collective's biotechnology work, investigating how their specific subject matter shifted and performance tactics changed while maintaining an overall interest in biotechnology. By directly engaging participants through specific performance strategies, CAE steadily increases audience agency in each of their projects. Ultimately, by providing the opportunity for participants to experience scientific experimentation firsthand within the framework of their projects, CAE unites their theory with their embodied practice.

Review of the Literature

CAE explicitly cites several avant-garde artists as important influences on their work, and the connection between CAE's performances and the theatrical avant-garde becomes even more apparent upon further examination. Günter Berghaus provides an extremely thorough history and analysis of the avant-garde in *Theatre, Performance, and the Historical Avant-Garde* (2005), positioning that artistic movement in the legacy of European modernism and providing a detailed description of the various movements which composed the historical avant-garde (Expressionism, Futurism, Dadaism, Constructivism). His overview of the Futurists bears the most significance for this argument. Berghaus continued his project in *Avant-Garde Performance: Live Events and Technologies* (2005) in which he focuses on the avant-garde after postmodernism in the

latter half of the twentieth century. Berghaus claims that in Europe, under postmodernism the historical avant-garde "degenerated into an eclectic, largely affirmative commodity," but in the United States postmodernism and the rise of technology revitalized the avant-garde.[9] In a similar structure to his previous book, Berghaus places his myriad examples of this avant-garde into four categories: Happenings and Fluxus; body art, ritualism, and neo-shamanic art; video and multi-media; and cyberspace. His discussion of Alan Kaprow specifically provides useful context for this analysis of CAE.

Arnold Aronson undertakes an analysis of this same period of the avant-garde in *American Avant-Garde: A History* (2000). Rather than providing extensive historical context as Berghaus does, Aronson focuses on an overview of the American avant-garde, pointing to specific artists and works to support his claims. His identification of traits shared among the American avant-garde, especially the connection of new scientific theories to the development of the avant-garde, as well as his discussion of two of CAE's influences, Kaprow and Marcel Duchamp, are particularly relevant to this discussion.

Peter Bürger's landmark *Theory of the Avant-Garde* (1984) provides a thorough theoretical analysis of the institution of art, and how that concept can be applied to both modernism and the avant-garde. As CAE owes much to their avant-garde predecessors, Bürger's discussion of the autonomy of art and the avant-garde is of particular relevance to this study. He sees the art of the avant-garde as negating both individual production and individual reception. Furthermore, by uniting the traditionally separate spheres of art and life, it eliminates the opposition between artist, or producer, and recipient. Bürger

[9] Günter Berghaus, *Avant-Garde Performance: Live Events and Technologies* (New York: Palgrave Macmillan, 2005), 74.

calls into question the results of this practice, however, maintaining the need to ask "whether the distance between art and the praxis of life is not requisite for that free space within which alternatives to what exists become conceivable."[10] This free space Bürger describes is especially vital to CAE's work, both in comparison to the avant-garde and in independent analysis.

These analyses serve to position CAE in the history of performance, but discussion of current artistic trends also provide critical context for CAE's performances, especially research on the genre of bioart. Suzanne Anker and Dorothy Nelkin's *The Molecular Gaze: Art in the Genetic Age* (2004) provides a broad overview of the scientific and social attitudes relating to genetics expressed in the visual arts by identifying five themes: reduction of the body to a text, mutation and the new grotesque, blurring of boundaries in transgenic organisms, new eugenics, and the commodification of the body.[11] CAE grapples with many of these themes in their performance events, placing them within this larger cultural narrative, as broadly outlined by Anker and Nelkin.

Robert Mitchell offers a more specific and solid theoretical analysis of bioart in *Bioart and the Vitality of Media* (2010). Focusing on visual art, Mitchell suggests that bioart falls into two separate arenas: those that use "prophylactic tactics," which employ traditional media (painting, sculpture) to comment on biotechnology issues, and "vitalist tactics," which are "premised on the principle that art best engages the problematic of

[10] Peter Bürger, *Theory of the Avant-Garde*, trans. Michael Shaw (Minneapolis: University of Minnesota Press, 1984), 50-54.
[11] Suzanne Anker and Dorothy Nelkin, *The Molecular Gaze: Art in the Genetic Age* (Cold Spring Harbor, NY: Cold Spring Harbor Laboratory Press, 2004), 5-6.

biotechnology when it becomes itself a medium for this latter."[12] Vitalism emphasizes the presentation rather than representation of biotechnology, and "[seeks] to use spectators themselves as a means, or media, for generating new biotechnological possibilities."[13] Mitchell mentions performance only briefly, citing CAE's performance of *Free Range Grain* (2003), but his perspective on bioart in general offers relevant concepts and terminology with which to discuss the remainder of CAE's work.

Claire Pentecost and Beatriz da Costa (both bioartists themselves who have worked with CAE) undertake important discussions on the position and function of the bioartist today. In her essay "Outfitting the Laboratory Symbolic: Toward a Critical Inventory of Bioart" (2008), Pentecost seeks create a system by which we might critically evaluate bioart. She places the bioartist between what she sees as the traditional capitalist structure of artmaking and the public, as well as between the public and the scientific industry. As far as the evaluation of this art, for Pentecost the primary criterion is legibility: "a complex phenomenon including attraction, relevance to common experience, engagement of the senses, and adroit interface with the popular media."[14] However, Pentecost's definition of legibility is itself not quite legible, and she provides no specific framework for assessing the legibility of a given work.

Beatriz da Costa shares Pentecost's views, which she relates in "Reaching the Limit: When Art Becomes Science" (2008). Da Costa questions the ability of bioartists to function as activists when political interests have gained control over the production of

[12] Robert Mitchell, *Bioart and the Vitality of Media* (Seattle: University of Washington Press, 2010), 27.
[13] Mitchell, *Bioart and the Vitality of Media*, 28.
[14] Claire Pentecost, "Outfitting the Laboratory of the Symbolic: Toward a Critical Inventory of Bioart," in *Tactical Biopolitics: Art, Activism, and Technology*, ed. Beatriz da Costa and Kavita Philip (Cambridge, MA: MIT Press, 2008), 120.

scientific and artistic knowledge. While she poses a number of interesting questions about the accessibility of scientific knowledge and equipment to bioartists, her claims seem irrelevant in light of the proliferation of bioart and the international success of several bioartists (including CAE). Perhaps more significant to this discussion, da Costa provides a detailed description of her work with CAE on *Free Range Grain* (2003), a valuable resource for my discussion of that particular performance and CAE's work on genetically modified organisms.

While CAE has written extensively about their own work, both in full-length books and articles in scholarly publications,[15] the treatment of CAE by scholars has been rare, largely consisting of various articles using a specific CAE performance as an example in a larger argument involving other performances and anthologies that include brief descriptions of CAE performances. However, in 2000, an issue of *The Drama Review* offered a significant section on CAE, which included an interview with its members and two articles written by the collective itself ("Recombinant Theatre and Digital Resistance" and "Performing a Cult"), as well as an extensive analysis of the performance *Flesh Machine* (1998) by Rebecca Schneider. In her essay, Schneider uses *Flesh Machine* as a lens through which she examines the position and practice of CAE, which she describes as nomadmedial: not only hybridized, but also always moving, "appearing as *not* that which one claims to be or by claiming to be *not* that which one seems."[16] For Schneider, this nomadmediality is best expressed in CAE's website created

[15] See Critical Art Ensemble, "Observations on Collective Cultural Action," *Art Journal* 57, no. 2 (1998): 72-84; "Reinventing Precarity," *The Drama Review* 56, no. 4 (2012): 46-61.
[16] Rebecca Schneider, "Nomadmedia: On Critical Art Ensemble," *The Drama Review* 44, no. 4 (2000): 123. Emphasis in original.

for *Flesh Machine*, which appears to be for a legitimate corporation. Schneider also emphasizes the pedagogical focus of CAE's performances, which are designed to educated participants about biotechnology issues rather than elicit direct political action, and draws parallels between CAE's nomadism and the historical avant-garde, positioning CAE as "manifesto-style avant-garde artists *of* technology".[17]

Nicola Triscott also takes up the question of CAE's pedagogy in "Performative Science in an Age of Specialization: The Case of Critical Art Ensemble" (2009). She focuses on CAE's goal of accessibility to the general public who may feel traditionally lost or unable to understand complex scientific ideas. The notion that this sense of confusion is actually created and promoted by biotech industries is central to CAE's work, and for Triscott, "each CAE work functions as both an emblematic art and as a discursive educational process, and aims to enable people to become more engaged as citizens in debates taking place in society."[18] While this may be true, Triscott lacks a specific examination of tactics used in performance, and how those changed over time. Rather than discuss CAE's performances in specific, Triscott places their work in the context of general cultural skepticism about the relationship between science and democracy, focusing on the legal and ethical issues that they face.

Gabriella Giannachi places CAE in the framework of globalization in "Exposing Globalisation: Biopolitics in the Work of Critical Art Ensemble" (2006), briefly examining several of CAE's performances. Giannachi categorizes globalization as a

[17] Schneider, "Nomadmedia," 130, emphasis in original.
[18] Nicola Triscott, "Performative Science in an Age of Specialization: The Case of Critical Art Ensemble," in *Interfaces of Performance*, ed. Maria Chatzichristodoulou, Janis Jefferies, and Rachel Zerihan (Farnham, England: Ashgate, 2009), 157-8.

cultural condition, like biopolitics, which she defines as the political structures that control the body. While Giannachi provides a detailed theoretical analysis of the various definitions of globalization and biopolitics, and how those inform the work of CAE in broad terms, she does not delve into CAE's performances in specific. She does describe her own experience at a 2003 performance of *GenTerra*, which provides a useful perspective on that specific piece, akin to Schneider's of *Flesh Machine*.

CAE's work is sometimes mentioned in analyses of digital performance, though usually in brief. Susan Broadhurst's *Digital Practices: Aesthetic and Neuroesthetic Approaches to Performance and Technology* (2007) is an investigation of what she calls the "liminal space" in the interface between the physical and the virtual. Drawing on Merleau-Ponty's theories of embodied perspective and cognition, as well as work by Lyotard, Derrida, and Deleuze, Broadhurst claims to investigate the effects of the digital/virtual on the physical body, but in her very brief discussion of CAE's work she glosses over the embodied experience of the participants (though she also describes attending a performance of *GenTerra*). In *Performing Science and the Virtual* (2007), Sue-Ellen Case offers a similarly brief treatment of CAE in her tracking of "performances inspired by the reclusive, transcendent status that Science seems to hold in the cultural imaginary."[19] Case refers to CAE's work dealing with genetically modified organisms, only hinting at an analysis of the participant experience.

Scholarship on performance and technology in general can be brought to bear in this discussion of CAE, as all of their performances involve the use of technology in

[19] Sue Ellen Case, *Performing Science and the Virtual* (New York: Routledge, 2007), 1.

some way. Johannes Birringer places bioart into what he sees as the "emerging digital aesthetic," which he discusses in *Performance, Technology, and Science* (2008).[20] Birringer sees organic or biological materials and technical or digital media as emerging simultaneously in contemporary performance. Bioart, by combining artistic undertakings with life, in the form of biological materials, performs a Foucauldian heterotopic site that creates a space alternative to the real, specifically, the virtual.[21] While much of his analysis focuses specifically on dance, Birringer's thoughts on the connection between biological and virtual tendencies in performance certainly have relevance when examining CAE.

This detailed investigation of CAE's work will expand existing scholarship through a detailed analysis and contextualization of their biotech performances, which are not only examined with specific attention to performance strategies and their effects on the audience, but compared with each other, demonstrating the shifts and changes in those strategies. This thesis will also contribute to the scholarly discussion of bioart, its possibilities and characteristics, specifically by an analysis of performance art rather than visual art.

Foundations

In a 2005 interview, CAE founding member Steve Kurtz declared, "'Western culture might be OK if it wasn't for capitalism. Capitalism is a vicious, inhuman project, and that's all there is.'"[22] He also cites the influence of Michael Hardt and Antonio

[20] Johannes Birringer, *Performance, Technology, and Science* (New York: PAJ Publications, 2008), 322.
[21] Birringer, 322.
[22] Steve Kurtz, qtd in "The Strange Case of Steve Kurtz," by Robert Hirsch.

Negri's *Empire* (2000) on CAE's practice. In it, Negri presents a theory of the real subsumption of labor, "the total penetration of everyday life by the logic and processes of capital."[23] This is an expansion of the Deleuzean concept society of control, which involves a shift from explicit bodily control (i.e. in a school or barracks) to "ubiquitous procedures of computerized tracking and information gathering."[24] Ultimately, combating the infiltration of capitalism into every aspect of life is the primary goal of CAE's work. All of CAE's artistic and scholarly output is informed by this idea of global pancapitalism.

While drawing on Hardt and Negri's work, as well as that of Deleuze, Guattari, and Foucault, CAE describes the control society as capitalism's global domination; that "under this regime, individuals of various social groups and classes are forced to submit their bodies for reconfiguration so they can function more efficiently under the obsessively rational imperatives of pancapitalism (production, consumption, and order)."[25] CAE theorizes this state of society as the body invasion: through the expanding knowledge of the biotechnology industry, the power of capital can now infiltrate the human body on the molecular level.

In their 2002 manifesto *Molecular Invasion*, CAE presents a clear and concise plan to resist pancapitalism's infiltration of the body and exploitation of biotechnology:

> Transgenic Production and Cultural Resistance: A Seven-Point Plan
> 1. Demystify transgenic production and products
> 2. Neutralize public fear

[23] Brian Holmes, *Escape the Overcode: Activist Art in the Control Society* (Eindhoven, Netherlands: Van Abbemuseum, 2009), 67.
[24] Ibid., 74.
[25] Critical Art Ensemble, *Flesh Machine Flesh Machine: Cyborgs, Designer Babies & New Eugenic Consciousness* (New York: Autonomedia, 1998), 11.

3. Promote critical thinking
4. Undermine and attack Edenic utopian rhetoric
5. Open the halls of science
6. Dissolve cultural boundaries of specialization
7. Build respect for amateurism[26]

Collectively, these seven goals inform CAE's seven biotech performances. Although each piece has a distinct subject, they are united by these goals, as well as several key theoretical concepts. These will be explored throughout this thesis in the context of each performance, but their significance dictates a brief introduction here. Ultimately, resistance to the control society is the primary reason for CAE's creation and the impetus for its core principles: collectivism, amateurism, and tactical media.

Collectivism

Since its inception, the members of CAE have prioritized collectivism in their artmaking and writing. Their manifestos, for example, are written from the perspective of the collective as a single entity, rather than its individual members. The identities of CAE's shifting membership are not easy to uncover, and are rarely published in discussions of their work. CAE's choice to maintain a collective practice has both a political and aesthetic basis. By operating as a collective, CAE rejects the traditional value attributed to "the beloved notion of the individual artist."[27] The art world doesn't escape capitalist influence, and for CAE collective practice is a form of resistance. But collective creation also allows CAE to possess a wide range of skills and knowledge. Therefore, they have a great degree of flexibility when making artistic decisions. Rather than bringing together artists of similar skills, CAE is founded on difference: "the parts

[26] Critical Art Ensemble, *Molecular Invasion* (New York: Autonomedia, 2002), 59.
[27] Critical Art Ensemble, "Observations on Collective Cultural Action," *Art Journal* 57, no. 2 (1998): 73.

are interrelated and interdependent. Technical expertise is given no chance to collide and conflict, hence social friction is greatly reduced. In addition, such structure allows CAE to use whatever media it chooses because the group has developed a broad skill base."[28]

For these same reasons, CAE often collaborates with other artists or scientists outside of their membership. These partnerships allow CAE to take up any issue and explore it using any media necessary by taking advantage of the knowledge and skill set of their collaborators. Because of CAE's continued commitment to collective creation, the question of which aspects of a project can be attributed to CAE and which to their collaborators is both impossible to answer and counter to CAE's philosophy. For CAE, "the privatization of culture is scandalous," and should also be resisted.[29] Collectivism and collaboration enable CAE to take on a wide variety of subjects and media, and remains at the center of all of CAE's work.

Amateurism

Closely related to collective practice, amateurism also lies at the core of CAE's practice. Claire Pentecost, an artist and scholar who collaborated with CAE on *Molecular Invasion,* has also developed this concept throughout her work. Pentecost describes the public amateur as an artist who:

> …consents to learn in public so that the very conditions of knowledge production can be interrogated…takes the initiative to question something in the province of a discipline in which she is not conventionally qualified, acquires knowledge through unofficial means, and assumes the authority to offer interpretations of that knowledge, especially in regard to decisions that affect our lives."[30]

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[28] Critical Art Ensemble, "Observations on Collective Cultural Action," 77-78.
[29] Steve Kurtz, qtd in "The Strange Case of Steve Kurtz," by Robert Hirsch.
[30] Claire Pentecost, qtd. in *Critical Strategies in Art and Media: Perspectives on New Cultural Practice*, ed. Konrad Becker and Jim Fleming (New York: Autonomedia, 2010), 41.

The goal of the public amateur is what Pentecost calls "cognitive sovereignty."[31] Simply put, people have the right to knowledge and the opportunity to contribute to decisions that directly affect them. Pentecost often points to CAE as an example of public amateurism in practice, because the members of CAE are not scientists themselves but obtain the knowledge necessary to conduct their public projects.

CAE expresses their commitment to amateurism as another form of cultural resistance to pancapitalism, which they see as successfully permeating all aspects of society by restricting knowledge and critical discourse to specialists. In CAE's eyes, specialization is another means of control:

> …profound alienation emerges due to competition for resources among and within specializations, along with an inability to communicate effectively with one another due to lexical difference…This situation is an embarrassment that not only breeds alienation within specializations, but also banishes interested nonspecialists (publics) from the stores of knowledge.[32]

The implications of specialization are especially apparent in biotech issues, in the idea that only skilled scientists possess the knowledge to understand scientific advancements. By undertaking public experimentation and seeking knowledge traditionally reserved for highly specialized scientists, CAE practices public amateurism. Furthermore, by engaging nonspecialist audiences in and with scientific processes, CAE seeks to educate other amateurs: their audience. Amateurism, coupled with collective creation, can inform the public to a degree that their opinions become significant.

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[31] Claire Pentecost, qtd. in *Critical Strategies in Art and Media: Perspectives on New Cultural Practice*, ed. Konrad Becker and Jim Fleming (New York: Autonomedia, 2010), 42.
[32] Critical Art Ensemble, "Recombinant Theatre and Digital Resistance," *The Drama Review* 44, no. 4 (2000): 157.

Tactical media

While CAE employs some of the aesthetics of their avant-garde predecessors, they belong to a new movement of artists practicing tactical media, which has its roots in the philosophy of Michel de Certeau.[33] CAE self-identifies as a tactical media collective, and analyses of their work frequently draw on the concepts and vocabulary of tactical media. In *Tactial Media* (2009), Rita Raley provides an overview of the concept and a thorough survey of the work of artists using it. She defines tactical media as "the intervention and disruption of a dominant semiotic regime, the temporary creation of a situation in which signs, messages, and narratives are set into play and critical thinking becomes possible."[34] Other examples of tactical media artists include culture-jammers like the Yes Men and Adbusters.

This essential definition of tactical media is also what makes it so difficult to evaluate. Tactical media artists are not "oriented toward the grand, sweeping revolutionary event; rather they engage in a *micropolitics of disruption, intervention, and education*."[35] Unlike performance as direct opposition, tactical media adopts the structure of its target in order to disrupt that target's message: "tactical media becomes so close to its core informational and technological apparatuses that protest in a sense becomes the mirror image of its object, its aesthetic replicatory and reiterative rather than strictly oppositional."[36] By adopting the content, structure and/or form of its object, tactical media resists from within rather than from without. Furthermore, CAE adopts the label

[33] Michel de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1988).
[34] Rita Raley, *Tactical Media* (Minneapolis: University of Minnesota Press, 2009), 6.
[35] Ibid., 1, emphasis mine.
[36] Raley, *Tactical Media,* 12.

and approach of tactical media in an effort to separate themselves from conventional artistic institutions: "CAE likes 'tactical media practitioner.' This term distances us from traditional ideological categories, and distinguishes us from the specialization of artists who are precious object makers for the luxury market."[37] Tactical media artists are not aiming to change the hearts and minds of a great mass of people, but instead make small interventions into daily life. In order to do so, CAE employs several specific aesthetic strategies, including the Situationist concept of *détournement.*

Détournement

One of the primary aesthetic strategies employed by CAE to expose the influences of capitalism in the biotech industry is *détournement,* originally developed by the Situationist International (SI), a collective of artists and intellectuals of the avant-garde. In the first issue of its journal, *International Situationniste,* the SI defined *détournement* as the use of "preexisting aesthetic elements" into a new and superior construction, and "within the old cultural spheres is a method of propaganda, a method which reveals the wearing out and loss of importance of those spheres."[38] As an aesthetic strategy, *détournement* is effective and powerful because of its inherent "double meaning, from the enrichment of most of the terms by the coexistence within them of their old and new senses."[39] For the Situationists, *détourned* elements in visual art revealed the hollowness of their original context and the futility of privileging the art object.

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[37] Critical Art Ensemble, qtd. in "Critical Art Ensemble: Tactical Media Practioners," by Jon McKenzie and Rebecca Schneider, *TDR: The Drama Review* 44, no.4 (2000): 137.
[38] "Definitions," in *Situationist International Anthology,* ed. Ken Knabb (Berkeley: Bureau of Public Secrets, 2006), 52.
[39] "Détournement as Negation and Prelude," in *Situationist International Anthology,* ed. Ken Knabb (Berkeley: Bureau of Public Secrets, 2006), 67.

In her study of the SI, Sadie Plant translates *détournement* as "somewhere between 'diversion' and 'subversion.'"[40] It became the hallmark of the SI's theoretical and artistic output, and "their subversive plagiarisms of the existing world were both playful and purposeful."[41] Plant's portrayal of the SI's *détournements* as both playful and purposeful is also a fit description of CAE, who deploy *détournement* not to demonstrate the emptiness of the art object but to uncover capitalist impulses in various biotech industries. The specific uses of this strategy throughout CAE's work will be discussed in further detail.

These small interventions into daily life, the micropolitics of tactical media, are challenging to articulate and analyze. If the efficacy of traditional activist performance can be measured by the number of protestors in a march or the passing of legislation, in what terms can tactical media be discussed? As Nato Thompson explains in "A Working Guide to the Landscape of Arts for Change" (2011), "assessment of these projects often relies on anecdote and is therefore more elusive."[42] This is especially true in the case of CAE, particularly the earlier projects examined here. Little documentation of audience response to their projects remains; the audience responses that can be found are individual, personal reactions to the performance, in the form of a blog post or video interview. As tactical media practitioners, CAE has dramatically different goals than the artists of the avant-garde that preceded them. What kind of framework, then, can be used to discuss tactical media performances like CAE's? Nicolas Bourriaud's concept of

[40] Sadie Plant, *The Most Radical Gesture: The Situationist International in a Postmodern Age* (New York: Routledge, 1992), 86.
[41] Ibid., 88.
[42] Nato Thompson, "A Working Guide to the Landscape of Arts for Change," *Animating Democracy* (New York: Americans for the Arts, 2011): 9.

relational aesthetics provides a foundation for examining CAE's work in terms of performance, while Robert Mitchell's theory of vitalism offers a lens for the work as bioart.

Relational Aesthetics

Nicolas Bourriaud's landmark monograph *Relational Aesthetics,* first published in French in 1998 and translated into English in 2002, theorizes the difference between contemporary art and the avant-garde, especially in terms of performance. According to Bourriaud, "twentieth century avant-garde, from Dadaism to the Situationist International, fell within the tradition of the modern project (changing culture, attitudes and mentalities, and individual and social living conditions)."[43] Both examples of the avant-garde that Bourriaud gives here are important predecessors of CAE's practice. But despite the clear influence of these and other avant-garde artists on CAE, their works cannot be discussed on the same terms, because they have distinctly different goals.

In Bourriaud's view, the objective of contemporary art (or post-1990s art) is not to propose alternate worlds, but to explore the world as it exists, politically and socially:

> …*learning to inhabit the world in a better way*, instead of trying to construct it based on a preconceived idea of historical evolution. Otherwise put, the role of artworks is no longer to form imaginary and utopian realities, but to actually be ways of living and models of action within the existing real.[44]

Therefore, the aesthetics of contemporary art and its objects are also different, in that they are relational. Bourriaud claims that this type of art creates a "social interstice," a term which he borrows from Marx. In these interstices, a new kind of relation, or dialogue,

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[43] Nicolas Bourriaud, *Relational Aesthetics,* trans. Simon Pleasance and Fronza Woods (Dijon: Les presses du réel, 2002), 12.
[44] Ibid., 13, emphasis in original.

becomes possible:

> The interstice is a space in human relations which fits more or less harmoniously and openly into the overall system, but suggests other trading possibilities than those in effect within this system. This is the precise nature of the contemporary art exhibition in the arena of representation commerce: it creates free areas, and time spans whose rhythm contrasts with those structuring everyday life, and it encourages an inter-human commerce that differs from the 'communication zones' that are imposed upon us.[45]

Bourriaud focuses specifically on art galleries, the site of the majority of CAE performances, and visual artists. However, his explanation of the interstices that contemporary art creates clearly applies to the goal CAE aims to achieve in their performance projects. In short, "art is a state of encounter."[46]

Vitalism

Each of these concepts, and how they relate to CAE's theoretical and aesthetic practice, will be treated in some depth throughout this thesis. However, the primary focus of this analysis is CAE's audiences and the agency they do (or do not) experience in each performance. In his 2010 book *Bioart and the Vitality of Media,* scholar Robert Mitchell presents an invaluable approach to discussing bioart and its audiences; his theorization of the specific tactics undertaken in bioart, how they differ from those of other genres, and their effect on the audience is a useful starting point for analyzing CAE's bioart. Their projects fall into Mitchell's category of vitalist bioart, which is "premised on the principle that art best engages the problematic of biotechnology when it becomes itself a medium for this latter."[47] This type of bioart "immerses gallerygoers *within* alternative practices

[45] Bourriaud, *Relational Aesthetics*, 16.
[46] Ibid., 18.
[47] Mitchell, *Bioart and the Vitality of Media,* 27.

of biotechnology," employing actual scientific processes, materials, and equipment to do so.[48] Vitalist bioart, through both content and form, can create "material folds" between the public, corporations, artists, and scientists, bringing together traditionally disparate elements of society. As an example, Mitchell points to the collaboration between CAE members and University of Pittsburgh scientist Dr. Robert Ferrell.[49] Echoing Bourriaud's idea of the interstice in contemporary art and Bürger's free space, these folds are precisely how bioart, like CAE's projects, can produce social change.

Mitchell's concept of vitalism is especially useful because he focuses on the experience of the audience of these artworks. For Mitchell, bioart generates two possible senses for an audience. In some bioart pieces, audience members experience a sense of "becoming-a-medium—the sense, that is, of being part of a biological milieu that has logics of transformations that exceed the gallerygoer's own goals and interests."[50] Essentially, the audience becomes the material for the artwork. The contrasting sense Mitchell theorizes is being-an-agent, where gallerygoers feel able to change the environment around them within the frame of the artwork. Ultimately, Mitchell maintains that in the experience of vitalist bioart is a "complex oscillation between the embodied sense of agency and an embodied sense of becoming-a-medium."[51] Mitchell's work, in junction with the characteristics of relational aesthetics, provides a valuable starting point when discussing the experience of CAE's audiences.

In their seven biotech projects, CAE explored various tactics to expose capitalist

[48] Mitchell, *Bioart and the Vitality of Media*, 28.
[49] Ibid., Chapter 3.
[50] Ibid., 70.
[51] Ibid., 75.

influence in biotech and create spaces for critical dialogue to occur. When examined collectively a continuum of audience experience emerges. Beginning with a more passive, albeit physical, experience, CAE used audience members as the literal material for the performance, namely by taking DNA samples. With each project, CAE moved toward an increased sense of audience agency, which ultimately resulted in participants not only donating their DNA but also completing scientific experiments.

Chapters

The following chapter examines the performances *Flesh Machine* (1997-8) and *Intelligent Sperm On-line* (1999). Stemming from the collective's belief that "eugenics never died,"[52] through these performances CAE aims to expose the hidden agendas of the reproductive industry as it currently operates under pancapitalism. *Flesh Machine* consisted of three distinct phases of performance, beginning with a lecture by CAE members performing as scientists. This lecture served as the content base for the next phase of the performance, in which participants took a computerized genetic screening test, donating a sample of their genetic material if they were deemed genetically adequate. Following the screening, CAE performers held a sale-by-auction of a human embryo.

In *Intelligent Sperm On-line*, a performance piece specifically designed for university audiences, a CAE member, performing as a representative of the company BioCom, exhorted university students to donate their sperm to a fertility clinic. Through a live video chat, another CAE member performed as a customer looking for an ideal

[52] Critical Art Ensemble, "Flesh Machine," critical-art.net.

sperm donor. This performer conducted a video conversation with the audience until a third CAE member (in the audience) agreed to donate his sperm and leaves to sign a contract. In these two pieces, CAE aims to achieve three goals: to simulate "bio-class divisions" inherent in the reprotech industry, to reveal the eugenic tendencies of that industry, and to bring out scientific processes into the public.[53] As both of these performances involve the actual or simulated donation of genetic material on the part of the participant, they represent examples of the becoming-a-medium experience as defined by Mitchell; the biological materials necessary for the performance (the media) come from the participants themselves.

This chapter also focuses on CAE's diverse implementations of information communications technology (ICT), including digital performance through video chat (*Intelligent Sperm On-line*) and the use of computers by participants as a part of the performance (*Flesh Machine*). The specific digital strategies undertaken by CAE, which are always deeply connected to the specific goal of any given performance, contrast with the embodied participation of each piece. When examined in light of continuing conversation and debate surrounding the influence and impact of the digital on live performance, with their careful and specific use of ICT, CAE foregrounds the physical dimension of their pedagogy while taking advantage of the capabilities of digital performance. The relationship between these two experiences, the digital and the embodied, is particularly evident in these performances.

The third chapter is centered on *Society for Reproductive Anachronisms* (1999-

[53] Critical Art Ensemble, "Flesh Machine," critical-art.net.

2000) and *Cult of the New Eve* (1999-2000). In these performances, CAE looks to uncover the religious rhetoric of reprotech through a "performative counterfeit." In *Society for Reproductive Anachronisms* (created with Faith Wilding), CAE performed as SRA, an activist group speaking about the dangers of reprotech through the "tradition" of an information table, which included both pamphlets and computerized information. Participants could also undertake a genetic screening test, as in *Flesh Machine*, though in this case they were rewarded for failing the test. CAE created another performative counterfeit in *Cult of the New Eve* (created with Faith Wilding and Paul Vanouse), allowing for a new context for the "appropriation of Christian promissory rhetoric" by reprotech industry.[54] The cult preached the advent of the messianic New Eve and new converts participated in a communion ritual, ingesting beer and a wafer composed of genetic material from the New Eve.

Cult of the New Eve and *Society for Reproductive Anachronisms* represent a shift in participant experience. Within these two performative superstructures or counterfeits, as CAE calls them, audience members do not participate in the performance as the physical material necessary for it. Instead, they actively choose to become members of the group CAE performs, aligning themselves with the performers, and ingest genetic material rather than give it. The audiences for these two projects experience a greater sense of agency than in previous CAE performances, but did not reach the degree of agency seen in their final biotech projects.

Chapter four focuses on the three CAE performances dealing with genetically

[54] critical-art.net.

modified organisms, or GMOS: *GenTerra* (2001-2003), *Molecular Invasion* (2002-2004), and *Free Range Grain* (2003-2004). Not only do these performances differ in content from those discussed in the previous chapter, but they also represent the next step in audience agency. For, while in the reprotech performances audience members might donate a blood sample for the performer-scientists to test, in these performances, the audience undertook the experimentation themselves. CAE continued to make use of information communications technology in these performances as well, but as the embodied participation of the audience is paramount to CAE's concept of contestational biology, the digital components of these performances are less prominent.

Like the reprotech performances, in *GenTerra*, CAE and Beatriz da Costa created a fictional company, GenTerra; in the performance, GenTerra technicians led participants in explorations and experiments to better understand the potential risks of genetic modification and recombinant DNA. After creating recombinant bacteria based on their own DNA, participants decided whether or not to take it home with them. CAE had two goals for this performance: to neutralize fear that surrounds popular conceptions of biotechnology and to created informed public discourse.

Molecular Invasion continued this participatory science through live experimentation in which audience members and CAE performers (with co-creators da Costa and Claire Pentecost) reverse-engineered GMOs in an attempt to disrupt the big-business process of GMO creation. This performance embodies CAE's concept of fuzzy biological sabotage, and is a testing ground for potential tactics of resistance against agrotech businesses. The overall goal of *Molecular Invasion* is a change in participants'

attitudes toward testing GMOs, and that a belief in the need for more regulation and testing will lead to resistance.

Free Range Grain, created with da Costa and Shyh-shiun Shyu, was inspired by the passing of strict GMO-labeling regulations in the European Union. In this performance, participants brought in their own food products and tested them for genetic modification, not only (potentially) demonstrating the prevalence of GMOs in the global food supply, but also demystifying the scientific processes that CAE believes the biotech industry purposefully continues to keep secret. The creation of a knowledgeable nonspecialist public will hopefully lead to public demands for further and more rigorous testing of GMOs before those organisms are released into the environment.

The final chapter will provide a brief account of Steve Kurtz's arrest in 2004 and its subsequent effects on CAE. Not only is an explanation of these events necessary for its impact on CAE's work, which shifted from biotechnology issues after 2004, but Kurtz's arrest and the resulting media frenzy gradually became the focus of many analyses of CAE. The fascination with Kurtz's tragic and politically significant arrest and following legal battle, with its repercussions for bioart, political artists, and censorship and prevalence in the national media, were of course significant. However, focus on these events should not overshadow CAE's previous work, which merits examination in the current cultural conversations of the posthuman.

Chapter 2
"We Want Your DNA:" Flesh Machine and Intelligent Sperm On-line

In 1978, the world's first "test tube baby," Louise Brown, was born. She was the product of a new procedure called in vitro fertilization, or IVF. British doctors Robert Edwards and Patrick Steptoe, who led the team that created Louise, quickly became internationally known and praised for their successful research. IVF radically changed the way the medical establishment treated reproductive challenges; from that moment forward, infertility was viewed as a disease, one that could be cured by IVF and other assisted reproductive technologies, including sperm donation and genetic pre-screening. In her book *Manufacturing Babies and Public Consent: Debating the New Reproductive Technologies* (1995), José Van Dijck[1] notes that, immediately following the birth of Louise Brown, IVF was painted as miraculous in the media while the actual scientific process itself remained shrouded in mystery. The advertisement of these procedures as necessary cures obscured the "market potential" of the rapidly growing industry; as Van Dijck shows, "economic or commercial arguments never overtly enter the arena of scientific discourse, but are disguised as medical arguments…the demand for a particular kind of treatment apparently justifies its need."[2] The continually expanding, profit-

[1] Van Dijck's name is sometimes Anglicized to Van Dyck. I will use the original spelling of her name.
[2] José Van Dyck, *Manufacturing Babies and Public Consent: Debating the New Reproductive Technologies* (New York: New York University Press, 1995), 72-73.

generating industry that these new reproductive technologies represent becomes, for CAE, the eponymous flesh machine of their live performance project *Flesh Machine: A Genexploitation Project.* This performance, along with *Intelligent Sperm On-line* that followed a year later, was designed to resist the insidious cultural construct of its title.

Flesh Machine

CAE performed *Flesh Machine* from 1997 to 1998 at numerous venues including Beursschouwburg (Art and Science Collision) in Brussels, Belgium; the Kiasma Museum of Contemporary Art in Helsinki, Finland; Public Netbase at Museums Quartier in Vienna, Austria; the Labor Gallery in Graz, Austria; and Kapelica Gallery in Ljubljana, Slovenia.[3] *Flesh Machine* is perhaps the most studied CAE performance, partially because CAE focuses much of its own writing on this piece. Much of the documentation of these performance events exists in archived press releases and event pages for various performance venues, but the enormous advances in Internet technology since the premiere of *Flesh Machine* make this evidence difficult to locate.

As described by CAE, the first performance of *Flesh Machine* was divided into three distinct parts: "The Cloning Project," "Virtual Termination," and "Let's Make Baby!" "The Cloning Project" consists of two separate phases. To provide a context for the event as a whole, in the first phase CAE members performed as employees of BioCom, a genomic research and development corporation. These members delivered a scientific lecture to the audience, focusing on the sociopolitical issues surrounding reproductive technologies as an introduction to the scientific work that would be

[3] critical-art.net.

undertaken in the performance. This lecture creates a specific performative space (the lecture hall) that invokes a particular audience experience, produces a specific performer-audience relationship, and constructs the content base of the performance. The easily accessible lecture format serves as a comfortable and effective introduction to the next phase of the performance, which radically changes this established lecturer-audience relationship.

The second phase of "The Cloning Project" transitions the audience from passive observers in the lecture hall to active participants. Participants took an extensive computerized screening test, which CAE acquired from an actual (anonymous) genetic laboratory, to "find out if they are considered 'fit' or 'unfit' for reproduction in pancapitalist society. If they are found to be 'fit,' they will be asked to donate DNA to be stored in [BioCom's] cryotanks, and they will receive a certificate of fitness."[4] Those participants who passed the screening could then choose to give a blood and cellular sample for preservation.

In the next part of *Flesh Machine,* "Virtual Termination," participants determined returned to the lecture hall, where BioCom employees advertise the sale by auction of an embryo. While the embryo does not contain the participants' genetic material, it is a real embryo that was donated to CAE by a couple going through an IVF process. The embryo was never alive or viable at any time during its use in *Flesh Machine*. BioCom representatives tried to persuade the audience to buy the embryo before the clock, projected on the screen in the lecture hall, ran out. If none of the participants purchased

[4] http://archive.constantvzw.org/events/e06/en/cae01en.html, retrieved August 16, 2014.

the embryo within the allotted time limit, it "died." When discussing this performance in 2000, Rebecca Schneider observed that every performance of *Flesh Machine* to date had ended with the "death-by-melting" of the embryo.[5]

Both "The Cloning Project" and "Virtual Termination" remained part of later performances of *Flesh Machine*, but the project's premiere was the singular occurrence of "Let's Make Baby!" CAE describes "Let's Make Baby!" as "an illustrated guide for children that explains how science and medicine create life and why."[6] Participants explored this book via CD-ROM at available computer terminals. Unlike any other CAE performance discussed here, "Let's Make Baby!" was geared toward children; perhaps this specific audience is the reason that it was not emphasized as part of later performances of *Flesh Machine*. A section of the BioCom website, which is still accessible as of this writing, offers a modified version of "Let's Make Baby!" under the title "For the Family." It consists of the written story of a couple undergoing the IVF process accompanied by extensive photo documentation.[7]

Remaining performance descriptions indicate that *Flesh Machine* underwent several major changes as it was shown around the world. The event description at Beursschouwburg in Brussels in 1997 indicates some flexibility in the various performance elements depending on the needs or desires of the sponsor or performance venue.[8] The fluidity of *Flesh Machine* presents a challenge in its analysis, as separate iterations at different venues could have involved any combination of the three parts,

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[5] Rebecca Schneider, "Nomadmedia: On Critical Art Ensemble" *TDR: The Drama Review* 44, no. 4 (2000): 123.
[6] http://archive.constantvzw.org/events/e06/en/cae01en.html.
[7] http://critical-art.net/Original/biocom/biocomWeb/family.html.
[8] http://archive.constantvzw.org/events/e06/en/cae01en.html.

which are not necessarily indicated in the remaining performance documentation. However, the overview provided by CAE in their own Internet archives and the records of various venues do provide a composite picture of the events of *Flesh Machine*, and offer insight into the experience of its audiences.

Intelligent Sperm On-line

CAE continued its performance as BioCom in *Intelligent Sperm On-line*, described as an "action" that "performs the aims and methods of the current eugenic meat market."[9] Unlike other CAE performances that occurred at multiple venues, especially art museums and festivals, *Intelligent Sperm On-line* premiered in 1999 at Rutgers University as a part of the conference "New World (dis)Orders: Globalization, Culture, and Identity." As in the first phase of *Flesh Machine*, CAE members dressed as representatives of BioCom, lectured about the company's products and services, and answered audience questions. In a manner eerily reminiscent of the organ-selling dystopia of Manjula Padmanabhan's *Harvest* (1998), the BioCom sales reps were looking for an ideal sperm donor for one of their customers, who attended the event through a live web chat. The "customer" was in fact a CAE performer using a computer in the adjoining room; the audience only communicated with her via a web chat tool. The conversation, facilitated by the BioCom representatives, continued until a "confederate" in the audience agreed to donate his sperm and left to sign a contract.[10] All the members of the audience were given the opportunity to take the genetic screening test and donate their genetic

[9] Critical Art Ensemble, "Intelligent Sperm On-line," critical-art.net.
[10] Critical Art Ensemble, "Recombinant Theatre and Digital Resistance," *The Drama Review* 44, no. 4 (2000): 160.

material to BioCom. Though participants in both *Flesh Machine* and *Intelligent Sperm On-line* took the same computerized exam to determine their genetic value, the donation of genetic material in *Intelligent Sperm On-line* was simulated rather than actual.

Theoretical Underpinnings and Artistic Precedents

In conjunction with the premiere of *Flesh Machine*, CAE created the book-length manifesto *Flesh Machine: Cyborgs, Designer Babies, & New Eugenic Consciousness* (1998).[11] In it, CAE defines the flesh machine as "a heavily funded liquid network of scientific and medical institutions with knowledge specializations in genetics, cell biology, biochemistry, human reproduction, neurology, pharmacology, etc., combined with nomadic technocracies of interior vision and surgical development."[12] The flesh machine has two specific mandates: "to completely invade the flesh with vision and mapping technologies," and "to develop the political and economic frontiers of flesh products and services."[13] Throughout this manifesto, and especially in defining the flesh machine, CAE heavily borrows its rhetoric from Althusser's concept of Ideological State Apparatuses,[14] Deleuze and Guatarri, and Rosi Braidotti. Indeed, the flesh machine is a close relative of the Deleuzean war machine.[15]

According to CAE, the highly profitable medical industry and the capitalist American government have jointly infiltrated the human body as the next, and perhaps

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[11] Like all of CAE's writings, the manifesto is not copyrighted, but anti-copyrighted, available free of charge through the collective's website.
[12] Critical Art Ensemble, *Flesh Machine*: *Cyborgs, Designer Babies & New Eugenic Consciousness* (New York: Autonomedia), 5.
[13] Ibid.
[14] See Louis Althusser, *Lenin and Philosophy, and Other Essays*, trans. Ben Brewster (London: New Left Books, 1971).
[15] See Gilles Deleuze and Félix Guatarri, "1227: Treatise on Nomadology: The War Machine," in *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), 351-423.

final, frontier for profit-making. This increasing commodification of the human body, analyzed by scholars including Lesley Sharp, Lori Andrews, and Dorothy Nelkin,[16] is for CAE a new eugenic agenda driven by pancapitalism under the guise of medical progress and the quest to achieve the "de-coding of nature," or the mastering of the natural world through scientific inquiry.[17] And, in the late twentieth century, by drawing on available technology, power has become nomadic in the Deleuzean sense; that is, it is both decentered and global. Because of its liquid and nomadic nature, CAE believes new forms of resistance are needed to combat the flesh machine.

When considering possible forms of resistance to the flesh machine, CAE praises the best available option:

> …counter-spectacle aimed at the nonspecialist public…since the mandates and methods of the flesh machine are kept as far away as possible from the scrutiny of the nonspecialist public, and because it is a step beyond the narratives of the bureaucratic ethicists whose teeth are not even the quality of dentures.[18]

The collective is aiming for an act of resistance that is primarily pedagogical, immersing participants without any advanced scientific knowledge "in the hyperreality of the flesh machine in a way that offered them an active experience of new eugenics and its tremendously complex cultural context."[19] Here, CAE draws extensively from Baudrillard's concepts of simulation and the hyperreal as the most effective tactics to

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[16] See Lesley A. Sharp, "The Commodification of the Body and Its Parts," *Annual Review of Anthropology* 29 (2000): 287-328, and Lori Andrews and Dorothy Nelkin, *Body Bazaar: The Market for Human Tissue in the Biotechnology Age* (New York: Crown Publishers, 2001).
[17] Critical Art Ensemble, *Flesh Machine*, 5-6.
[18] Ibid., 8.
[19] Critical Art Ensemble, "Recombinant Theatre," 164.

resist the nomadic flesh machine.[20] However, the active embodied engagement of the audience remains central to CAE's performance techniques and their political aspirations. To generate any resistance, spectators must become participants through active experience of the hyperreality CAE creates. This experiential hyperreality allows for critical distance for participants, who can then (hopefully) engage in informed discourse.

While CAE targets the capitalist appropriation of all fields of scientific inquiry, they adamantly reject being labeled as anti-technology or neo-Luddite: "science and technology in and of themselves are not the problem, nor have they ever been. The real problem is that science and technology are developed, deployed, and controlled by the predatory system of pancapitalism."[21] This is a key principle of CAE's aesthetic choices, which involve adoption and careful use of the very technologies under scrutiny in a practice they term "recombination."

CAE cites the *Flesh Machine* project as the foundation of their recombination technique, a performance tactic appears throughout the CAE performances discussed in this thesis. In "Recombinant Theatre and Digital Resistance" (2000), CAE defines these terms as "the foundations of a new cosmology—a new way of understanding, ordering, valuing, and performing the world."[22] While a clear, explicit definition of this concept is difficult to discern in CAE's jargon-laced, manifesto-style writing, CAE does detail the major characteristics of recombinant theatre in their article for *The Drama Review*.

First, CAE acknowledges the derivation of the term recombinant from molecular

[20] See Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Faria Glaser (Ann Arbor: University of Michigan Press, 1994).
[21] Baudrillard, *Simulacra and Simulation*, 7.
[22] Ibid., 151.

biology. According to the National Human Genome Research Institute of the National Institutes of Health, recombinant DNA is "a technology that uses enzymes to cut and paste together DNA sequences of interest…into a suitable host cell where it can be copied or expressed."[23] In a recombinant act, CAE adopts the term to describe their technique of appropriating images and ideas from dominant culture and placing them in a different context. This technique is not original to CAE, who draws inspiration from several historical artists in defining and practicing recombinance.

The clearest theatrical precursor of recombinance is Guy Debord and the Situationists. Recombinance is partly a new manifestation of Debord's concept of *détournement*. As defined in the first issue of *Internationale Situationniste* (1958), *détournement* involves "the integration of present or past artistic productions into a superior construction of a milieu."[24] For the Situationists, this technique often involved recontexualizing preexisting poetry, paintings, photographs, or other art objects. CAE, however, reintegrates elements of actual scientific corporations into their projects. Recombinance is also closely connected to CAE's practice of collectivism, because "recombinant theatre begins by eliminating the privileged position of the director, auteur, genius, or any other reductive, privatizing category."[25] This further aligns recombinance with the techniques of the Situationists, who also emphasized the collective nature of the creation of their constructed situations.[26]

In performance, recombinant theatre "consists of interwoven performative

[23] http://www.genome.gov/Glossary/index.cfm?id=173.
[24] *Internationale Situationnniste #1*, in *Situationist International Anthology*, ed. and trans. Ken Knabb (Berkeley, CA: Bureau of Public Secrets, 2006): 52.
[25] Critical Art Ensemble, "Recombinant Theatre," 158.
[26] *Internationale Situationniste #1*, 51.

environments through which participants may flow."[27] Here, CAE does point to a specific theatrical precedent: Allan Kaprow's Happenings. CAE explicitly rejects, however, what they feel the Happenings became after the 1960s. Specifically, they condemn the privileging of the performer over the audience, the predetermined outcome of a performance, and the pacification of the audience.[28] This last objection is central to CAE's mode of creation, because not only is an engaged and participatory audience their goal, but also a necessity for their performances.

Digitality, or digital aesthetics, is a second key concept established in the *Flesh Machine* project that continued in *Intelligent Sperm On-line* and heavily influenced later CAE performances. CAE describes a paradigm shift from the analog (order from chaos) to the digital (order from order) that coincided with the onset of late capitalism.[29] The digital paradigm influenced the economy, science, and culture. A worldview of "order from order" facilitated the creation of industrialization and mass production, as well as the understanding of DNA and its replication, which echoes digital copying.[30] The familiarity of the digital is the reason for its prevalence as a metaphor for biotech advancements, and also for CAE's use of digital techniques. By presenting new information to audiences through the familiar format of the digital, CAE promotes the accessibility of their performance. The language of the digital has permeated culture even further today than in CAE's first performances in 1997, which only validates CAE's strategy.

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[27] Critical Art Ensemble, "Recombinant Theatre," 157.
[28] Ibid.," 158.
[29] See Frederic Jameson, *Postmodernism, or The Cultural Logic of Late Capitalism* (London: Verso, 1991).
[30] Critical Art Ensemble, "Recombinant Theatre," 153-155.

Beyond its ubiquitous presence in contemporary culture and society, CAE employs "digital aesthetics" because it is "a process that offers dominant culture minimal material for recuperation by recycling the same images, actions, and sounds into radical discourse."[31] Digitality is the most effective means of resisting authoritarian culture (and the flesh machine) because it cannot be (re)appropriated by that same culture. The appropriated images are merely recycled versions of those already used by the dominant culture.

Here, CAE identifies two artistic precursors who inspired their use of the digital: Marcel Duchamp and Karl Kraus. In Duchamp's readymades, CAE sees the use of both recombinance, in appropriating objects from the dominant culture, and the digital, in a repetition of those objects. Just as Duchamp placed mass-produced objects in the context of an art gallery to change the meaning of those objects, CAE's placement of the genetic screening test in the context of *Flesh Machine* and *Intelligent Sperm On-line* changed its meaning. When placed alongside BioCom's sleek website and corporate representative, a questionnaire merely used to gather medical information becomes a measurement of the monetary value of flesh and blood.

CAE cites Karl Kraus's *The Last Days of Mankind* (1922) as the most significant theatrical antecedent of both digitality and recombinance, specifically Kraus's "implosion of fiction and nonfiction into hyperreality."[32] However, CAE feels Kraus failed to reconnect this hyperreality to real life; his work had no "looping mechanism" to make it

[31] Critical Art Ensemble, "Recombinant Theatre," 152.
[32] Ibid., 156.

relevant to the physical world.[33] This looping mechanism is precisely what CAE strives to create in their pedagogical performances through the techniques of digitality and recombinance.

Drawing on the theatrical legacies of their avant-garde predecessors, in *Flesh Machine* and *Intelligent Sperm On-line*, CAE aims to simulate "bio-class divisions" inherent in the reprotech industry, to reveal the perceived eugenic tendencies of that industry, and to bring out scientific processes into the public.[34] Ultimately, through specific performance strategies, CAE seeks to create a Baudriallardian hyperreality that will prompt critical discourse among participants.

Performance Strategies and Participant Experience

Flesh Machine and *Intelligent Sperm On-line* differ significantly in performance, though they serve as companions to each other. *Flesh Machine* centers on the commodification of female genetic material (the embryo) and *Intelligent Sperm On-line* on that of male genetic material (the sperm). The two performances are further aligned by the audience's experience. As both of these performances involve the actual or simulated donation of genetic material on the part of the participant, they represent examples of the becoming-a-medium experience as defined by Mitchell: the biological materials necessary for the performance (the media) come from the participants themselves.

CAE's use of the fictional company BioCom as framework for *Flesh Machine* and *Intelligent Sperm On-line* is critical, as CAE continued to employ this framework in many of the performances discussed here. As a faux representation of a powerful

[33] Critical Art Ensemble, "Recombinant Theatre," 156.
[34] Critical Art Ensemble, "Flesh Machine," critical-art.net.

company, BioCom functions as a Baudrillardan hyperreality, a "generation of models of a real without origin or reality."[35] Reminiscent of culture-jamming performers such as the Yes Men,[36] this performance strategy serves a dual purpose. It allows audience members, who are undeniably familiar with actual corporations, an accessible entry into the performance, and it enables CAE to critique the corporations that make up the flesh machine.

Although CAE had used this tactic in previous performances that focused on issues of hacking and digital resistance, in *Flesh Machine* the strategy involved both digital and embodied components. Participants encounter CAE members as employees of BioCom, wearing white lab coats and reiterating the company line, "building a better organic platform."[37] The BioCom construct is further legitimized by an elaborate and authentic website, which is still active as of this writing.[38] BioCom's virtual presence promotes the belief in the company's authenticity. Rebecca Schneider claims that this strategy is one example of CAE's nomadism; "by appearing as *not* that which one claims to be or by claiming to be *not* that which one seems," CAE itself becomes nomadic and better equipped to combat nomadic capitalism.[39] In addition to promoting nomadism, the BioCom construct and others like it serve as a point of accessibility for an audience well versed in the language of corporations. By casting the use of reprotech in the familiar commercial sales pitch, CAE reveals the abuse of these technologies by the industry.

Another widely used strategy CAE employs to create an experiential connection

[35] Baudrillard, *Simulacra and Simulation*, 1.
[36] See theyesmen.org.
[37] critical-art.net.
[38] http://critical-art.net/Original/biocom/biocomWeb/form.html.
[39] Schneider, "Nomadmedia," 123, emphasis in original.

for participants entails the use of computers and the Internet as performative tools. Analyzed in scholarship as virtual theatre or digital theatre, the use of computers in *Flesh Machine* was both a product of CAE's long interest in hacktivism[40] and the foundation for later CAE performances. CAE's carefully constructed BioCom website, which participants could explore prior to taking the genetic screening test, served several purposes. Through this web page, CAE could distribute information quickly to participants who may or may not know anything about reproductive technologies. The website, complete with advertisements and snappy slogans, also contributed to the simulation of BioCom as a legitimate company. There is no indication on the website that BioCom is not, in fact, an actual biotech corporation; CAE's name does not appear on any of the webpages (see Figure 1).

However, CAE is cautious with its use of information and communications technology, which they view as most valuable when not an immersive experience, and only used for storing and sharing information. CAE examines the immersive manifestation of this technology as virtual reality in the first chapter of the *Flesh Machine* manifesto, "Posthuman Development in the Age of Pancapitalism." CAE frames their discussion of imaging technologies, including virtual reality, in terms of Althusser's Repressive State Apparatus and Ideological State Apparatus.[41]

[40] Hacktivism involves using computer networks for political purposes, usually as a form of protest. See Critical Art Ensemble, *The Electronic Disturbance* (New York: Autonomedia, 1996) and Critical Art Ensemble, *Electronic Civil Disobedience* (New York: Autonomedia, 1998).
[41] Critical Art Ensemble, *Flesh Machine,* 13.

Figure 1. The BioCom home page.

These apparatuses, as structures of control, utilize virtual reality only to "specify, regulate, and habituate [one's] role in the material world" in another bid to exercise control over the body.[42] Because of the perceived danger of computers as virtual reality

[42] Critical Art Ensemble, *Flesh Machine*, 24.

tools, the live performance components of CAE's actions cannot be separated from their digital counterparts. CAE continuously maintains the importance of computers as tools in their actions: "This one thing is enough to offer a means to deepen the pedagogical dimension of resistant theatrical practice."[43]

Indeed, CAE sometimes refers to audience members as "users,"[44] demonstrating both their active participation and their position relative to the technology employed by CAE in the performance. This practice would continue in later actions, because a central part of CAE's mission is the demystification of scientific processes. The act of "using" or becoming a "user" that began in *Flesh Machine,* where audiences used computers during the advent of the personal computer, would shift in later performances to involve participants using actual scientific equipment and processes.[45]

The transformation of passive audience members to active users and the implementation of computers as a performative experience also reflect the characteristics of the biotech industry itself. Numerous scholars, including José van Dijck and Dorothy Nelkin, point to the creation and completion of the Human Genome Project as a major shift in the perception of genetics and biotechnology. Its completion created a "new genetics," or, as CAE claims, a "new eugenics," which "hides under the authority of medical progress and the decoding of nature."[46] This new eugenics is not driven by ethnic cleansing, but instead by capitalist market forces, primarily through the "techno-baby market" promises of taller or more intelligent children. Despite their inaccuracy (for

[43] Critical Art Ensemble, "Recombinant Theatre," 165.
[44] http://archive.constantvzw.org/events/e06/en/cae01en.html.
[45] See Chapter 4.
[46] Critical Art Ensemble, *Flesh Machine,* 6.

example, using the genes of two tall parents is not a guarantee of a tall child), consumers buy into these promises and are "more willing to pay higher prices for the sperm of an intelligent man than they are for the sperm of an average donor…an important ideological seed is being sown. People are being taught to think eugenically."[47]

This rhetoric is often couched in metaphor, which CAE believes is a primary reason that consumers buy into it. Human DNA, for example, is portrayed as a code to be deciphered or a puzzle to be solved. As José van Dijck explains in *Imagenation: Popular Images of Genetics* (1998), during and following the Human Genome Project "the new genetics derived its primary images from the burgeoning computer industry."[48] Computers, which of course were instrumental in the completion of the Human Genome Project, was one of several accessible metaphors for DNA. The human genome became a code composed of individual data points that could be determined, much like the binary code of computer programming. So, through their technique of recombinance, CAE appropriates both the language and the tools of the biotech industry to provoke critical dialogue surrounding these issues.

In *Flesh Machine*, CAE integrated computers as tools, a practice they would undertake in the performances discussed in the following chapter. In *Intelligent Sperm On-line*, CAE used a virtual performer, the member of their company live-chatting from an adjoining room, to interact with the audience. The audience did not engage with computers as individual users, exploring the website on their own. Instead, the web chat was a collective encounter, experienced by the audience as a whole. The BioCom

[47] Critical Art Ensemble, *Flesh Machine,* 72.
[48] José Van Dyck, *Imagenation: Popular Images of Genetics* (NY: New York University Press, 1998), 120.

customer was not *present* at the performance, but *telepresent*; her interaction with the audience is a mediated one. Gabriella Giannachi undertakes an analysis of telepresence in *Virtual Theatres: An Introduction* (2004). She investigates the experience of the viewer: "…the very way in which the screen operates encourages the viewer to interpret the world of the screen as truth, as presenting something which is or was 'really there.'"[49] The choice to use a telepresent performer in *Intelligent Sperm On-line,* rather than a present one, contributed both to the creation of a hyperreal environment and the belief of some audience members that BioCom was an actual corporation.

But, as in the work of other bioartists, the presentation component of *Intelligent Sperm On-line* is only one part of the performance; the participants' reactions are the completion of the performance event.[50] For example, Giannachi describes Eduardo Kac's *GFP Bunny* (2000), the seminal transgenic artwork, as "both the rabbit and the public debate, both the creation of life and the intertexuality and the metatexuality deriving from it."[51] For Kac, the performance *GFP Bunny* began with the birth of Alba the fluorescent rabbit, and is in fact ongoing as the public discussion surrounding her continues. In much the same way, the reactions of audience members to *Intelligent Sperm On-line* constitute the performance in the eyes of CAE. Closely tied to their collective creation methods, this focus on process over product is integral to establishing "productive pedagogy." Of course, this makes the outcome of any given performance impossible to predict: "no real intentionality exists, since the interaction is process-oriented and thereby subject to many

[49] Gabriella Giannachi, *Virtual Theatres: An Introduction* (New York: Routledge, 2004), 9.
[50] critical-art.net.
[51] Giannachi, *Virtual Theatres*, 86.

unforeseeable causalities and accidents."[52]

CAE is not unaware of the potential problems of their "permanently experimental" performance model, problems which become apparent when the audience reactions to *Intelligent Sperm On-line* are examined. Eugene Thacker, a media studies scholar who has written extensively about biotechnology issues and biomedia,[53] described his experience of the performance, which was performed under the name *BioCom*:

> There were a number of people who actually believed the BioCom action was real, and were, as a result, offended by what one person called the "fascist science" of this "corporation." Others assumed BioCom was a performance and a parody, finding much of it humorous. There were also several professors who stormed out during the action. One professor felt that the issue of fertility was not being taken with enough seriousness, and another professor expressed worry since he had brought several graduate students. Several other professors and graduate students voiced their support of CAE and the BioCom piece, not only as a critique of corporate biotech but also as a critique of academia and the conference format. By and large, most of the audience members were, to varying degrees, confused and intrigued by the BioCom demonstration.[54]

Thacker's revelation that some participants believed BioCom to be an actual corporation actively seeking sperm donors at an academic conference prompts several questions about the effect and efficacy of this performance specifically and CAE's working methods generally. If, as Thacker described, audiences did believe the action to be real, then CAE successfully created the hyperreality they strive for by appropriating the tools used by actual corporations (the website, the presentation, the lab coats). However, if these same audience members were unable to then realize that the action was not reality

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[52] Critical Art Ensemble, "Recombinant Theatre," 159.
[53] See Eugene Thacker, *Biomedia* (Minneapolis: University of Minnesota Press, 2004); Eugene Thacker, *The Global Genome* (Cambridge, MA: MIT Press, 2005).
[54] Eugene Thacker, " New World (dis)Orders Report," nettime.org, February 25, 1999, retrieved August 18, 2014.

but a hyperreal construct, then CAE did *not* succeed in creating the looping mechanism that they advocate as necessary for an effective hyperreal performance. This question of efficacy will continue to haunt later CAE performances.

Intelligent Sperm On-line is also unique among the performances discussed here as it was designed for a specific audience: universities. Unlike other CAE actions performed in the context of art museums or arts and technology festivals, *Intelligent Sperm On-line*'s presence within an academic conference with a university audience changed the audience's expectations and reception. Thacker believed the performance demonstrated the need for "critical reflexivity" in academic conferences, as they are one of "the primary sites at an educational institution…where issues may be critically discussed."[55] He also claims that, despite the (lack of) clarity and the audience reaction to other conference presentations, "CAE's BioCom action revealed that there was a general inability to 'read' the action and to get beyond a response of either offense or dismissal."[56]

Thacker's summary of this audience experience exemplifies a key challenge in analyzing CAE's work: translating their theories of performance into practice that generates the desired audience reaction. From Thacker's account, it seems unlikely that *Intelligent Sperm On-line* did so. Perhaps it is for this reason that this performance is rarely discussed in relevant scholarship and that it was short-lived in performance (unlike *Flesh Machine,* that was performed several times in various venues from 1997-1998). Despite the lack of analysis of *Intelligent Sperm On-line*, it serves as a necessary foil to

[55] Thacker, " New World (dis)Orders Report."
[56] Ibid.

Flesh Machine and an important step in the development of CAE's recombinant strategies. Following this performance, CAE moved away from using live web chatting as a tool. Instead, the pieces that followed *Flesh Machine* and *Intelligent Sperm On-line* employed computers as tools for participants and involved two new fictional constructs that differed significantly from BioCom. While these performances, *Society for Reproductive Anachronisms* (1999) and *Cult of the New Eve* (1999), involved the continuation of some of the tactics of prior performances, they also represent a shift towards a more active audience experience and engage in other reprotech issues.

Chapter 3

"Codpieces are Now!": Cult of the New Eve and Society for Reproductive Anachronisms

In 2003, the National Human Genome Research Institute announced the completion of the Human Genome Project: a finished sequence of the human genome, "nature's complete genetic blueprint for building a human being."[1] A thirteen-year undertaking costing millions of dollars, the Human Genome Project aimed to develop new mapping technologies and identify specific genetic markers for diseases. In 2001, when the project announced the completion of a draft of the human genome, the director of the National Human Genome Research Institute, Francis Collins, described the genome as:

> …a history book—a narrative of the journey of our species through time. It's a shop manual, with an incredibly detailed blueprint for building every human cell. And it's a transformative textbook of medicine, with insights that will give health care providers immense new powers to treat, prevent and cure disease.[2]

This glowing view of genomic research was propagated in scientific publications and especially in popular media. *The New York Times*' coverage, for example, was headlined "Reading the Book of Life."[3] London's *The Independent* described the project as "the blueprint of life" in an article Biblically entitled, "And scientists said, let there be life."[4] Such impassioned rhetoric surrounding scientific achievements like the Human Genome

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[1] "All About the Human Genome Project," genome.gov.
[2] "What Was the Human Genome Project?," genome.gov.
[3] *The New York Times,* 27 June 2000. *Lexis Nexis.*
[4] Colin Tudge, "And scientists said, let there be life," *The Independent* (London), 27 June 1994. *Lexis Nexis.*

Project became the target of CAE's projects *Society for Reproductive Anachronisms* (1999) and *The Cult of the New Eve* (1999).

Society for Reproductive Anachronisms

Society for Reproductive Anachronisms premiered at Rutgers University in 1999, and was performed at the Expo Destructo festival in London later that same year. CAE collaborated with multidisciplinary artist Faith Wilding to create the piece and articulate its theoretical basis in the form of a position paper. Wilding, who teaches at both the Art Institute of Chicago and Vermont College, shares CAE's interest in biotechnology as subject and as artistic medium. Her work investigates the "somatic, psychic, and sociopolitical history of the body…with a particular emphasis on biotechnology."[5] Like CAE, she draws on actual scientific equipment and processes in her artwork, although often in visual art or installations rather than performance. Her installation *Embryoworld: Pedigree Wall* (1998), for example, used actual sperm donor profiles and fitness tests as canvases for drawings. She defines her art practice as "complex and recombinant," a description reminiscent of CAE's appropriation of scientific concepts to theorize their own artistic practice.[6]

In *Society for Reproductive Anachronisms*, CAE performed as SRA, a group of activists looking to "combat the rationalization and instrumentalization of the reproductive process that is occurring in order to totally manage its service to the pancapitalist order" by extolling the benefits of the natural reproductive process.[7] SRA's

[5] "About Faith Wilding," http://faithwilding.refugia.net.
[6] Faith Wilding, "Artist Statement," http://faithwilding.refugia.net.
[7] Critical Art Ensemble, "Manifesto," http://critical-art.net/Original/sra/SRAweb/manifesto.htm.

language here echoes CAE's own description of pancapitalism. But CAE advocates using science to fight capitalist impulses in biotech from within, while SRA praises the exact opposite, a return to reproductive processes without medical or scientific intervention. CAE created this performance "in the tradition of activist groups," centering the "public interface" on an information table and offering "the usual pamphlets and flyers."[8] SRA members also invited participants to make use of the available computer terminals to explore SRA's website. Unlike *Flesh Machine* or *Intelligent Sperm On-line*, both of which had a more presentational structure, *Society for Reproductive Anachronisms* included CAE performers and their associates interacting on a one-on-one basis with participants in an unstructured environment.

An integral part of the performance of *Society for Reproductive Anachronisms*, SRA's website clearly outlined the goals of the group and underscored the satirical tone of the performance. Through articles and advertisements, SRA advocates the return of the natural reproductive process, rejecting the separation of the sexual act and human reproduction brought about by the inventions of reproductive technology. The site is divided into several sections: "Manifesto," "Nomadic Promiscuity," "Codpieces are Now!," "Procession of the Damned," and "Fertility Aids." The SRA Manifesto lists four Capitalist objectives regarding reproduction and ten specific ways in which SRA will resist these objectives, including that "it will retard and disrupt the commodification of the flesh" and that "it will provide ways and means to improve fertility and fecundity."[9]

[8] Critical Art Ensemble, "Recombinant Theatre and Digital Resistance," *The Drama Review* 44, no. 4 (2000): 164.
[9] http://critical-art.net/Original/sra/SRAweb/manifesto.htm.

The remaining sections of the website offer specific ways that men and women can participate in that resistance.

In "Nomadic Promiscuity," SRA advises women to take as many partners as possible during their ovulation period, in order to bring back the "natural selection mechanisms involved in human reproduction." To obtain the fittest sperm and increase biological diversity, women should travel great distances in search of sexual partners. This section offers a map detailing where women of various ethnicities should travel in order to create the most diversity in the gene pool.[10] The "Fertility Aids" section of the website offers natural and historical alternatives to modern reprotech "from the material to the mystical," including herbal treatments, dietary solutions, alternative medicines (such as reflexology), and fertility rituals. This section also provides historical examples of saintly interventions in the reproductive process; for example, barren women in Syria visited the shrine of St. George in hopes of conceiving.[11]

The section "Procession of the Damned" takes its name from early 20th century scientist Charles Fort, who spent his career documenting phenomena that science could not explain. SRA's list includes a black couple who has given birth to three albino children, a study relating birth statistics to the phases of the moon, and genetic experiments like the cama (a cross between a camel and a llama) and glow-in-the-dark rats.[12] Finally, in "Codpieces are Now!," SRA aims to solve the problem of falling sperm counts among American men. Rather than turning to reprotech solutions like in vitro

[10] Critical Art Ensemble, "Nomadic Promiscuity," critical-art.net/Original/sra/SRAweb/nomadic.htm.
[11] Critical Art Ensemble, "Fertility Aids," http://critical-art.net/Original/sra/SRAweb/fertility.htm.
[12] http://critical-art.net/Original/sra/SRAweb/procession.htm.

fertilization, SRA advises men to wear codpieces to increase their sperm count, offering three contemporary models to fit various lifestyles (see Figure 2).[13]

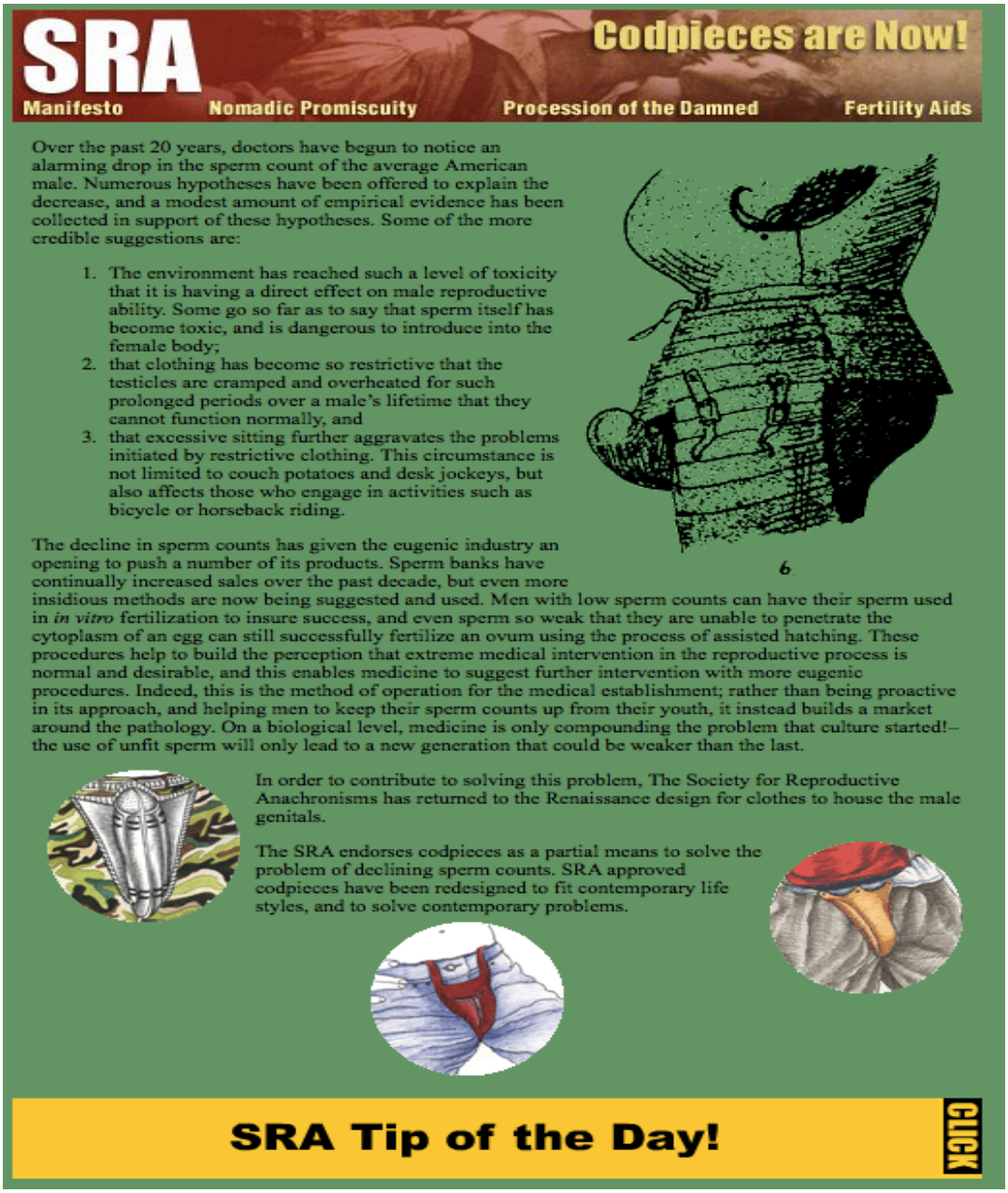

Figure 2. The SRA web page "Codpieces are Now!"

[13] http://critical-art.net/Original/sra/SRAweb/cod.htm.

Accompanying the articles are SRA advertisements, including "No Genetic Alteration Necessary," "It's Not Nice to Fool Mother Nature," and "May the Best Sperm Win." The bottom of each webpage broadcasts the "SRA Tip of the Day" in a bright yellow menu bar, offering advice like "Abstinence Makes the Seed Grow Stronger" and "Don't Lube Up Before Intercourse!"[14] The SRA website plays a more integral role than that in *Flesh Machine*, as the former lacks the context provided by the lecture component of the latter. A participant could conceivably attend a performance of *Society for Reproductive Anachronisms* and explore the website without any direct interaction with a CAE performer. This differs significantly from the function of the websites in *Flesh Machine* and *Intelligent Sperm On-line,* as both performances involved a lecture to the audience as a whole; participants only investigated the BioCom website following the lecture. The audience of *Society for Reproductive Anachronisms*, however, did not experience a structured performance environment, like that of *Flesh Machine*. Instead, participants flowed freely through the environment, choosing whether or not to interact with CAE performers, the SRA website, both, or neither.

Eugene Thacker described experiencing the premiere performance of *Society for Reproductive Anachronisms* at the New World (dis)Orders conference at Rutgers University in February 1999. He explains the fluid environment of the performance: "the action was performed during the afternoon, at a recruitment table in the main lunch hall of the Rutgers Student Center."[15] This location exposed the performance not only to conference attendees, but also to "innocent passerby," who were invited to take the

[14] http://critical-art.net/Original/sra/SRAweb/manifesto.htm.
[15] Thacker, " New World (dis)Orders Report."

genetic screening test or to take SRA literature.[16] As Thacker also points out, *Society for Reproductive Anachronisms* was performed the day after CAE's performance of *Intelligent Sperm On-line*, prompting conference attendees to compare them. With the juxtaposition of the two performances, SRA seemed to be protesting directly against the fictional BioCom. Unlike in his analysis of *Intelligent Sperm On-line,* however, Thacker's biggest takeaway from CAE's SRA action was "the need for some critical reflexivity within academic discourse as it is presented in the context of the academic conference."[17] Rather than prompting critical discussion about the content of the performance, biotech issues, as CAE hopes, for Thacker this action sparked questions about the format of academic conferences.

Cult of the New Eve

Cult of the New Eve (1999), which CAE performed during the same period as *Society for Reproductive Anachronisms*, premiered at St. Clara Hospital in Rotterdam, the Netherlands. CAE performed this action for the next year at various venues including the Museum of Contemporary Art, Toulouse, France; the Steirischer Herbst Festival at ESC Gallery in Graz, Austria; the Center for Arts and Media, Karlsruhe, Germany; and Future Heritage at World Information Organization's *Brussels2000* conference. It was also part of the touring exhibition *Gene(sis)* by the Henry Art Gallery at the University of Washington, which traveled to several locations around the U.S. *Cult of the New Eve* was also performed virtually via a web simulcast at InterCommunication Center in Tokyo, Japan; AVL Art Gate, Graz, Austria; and Media Center d'Art i Disseny, Barcelona,

[16] Thacker, " New World (dis)Orders Report."
[17] Ibid.

Spain.

To create this piece, CAE again collaborated with Faith Wilding, as well as another tactical media artist, Paul Vanouse. Currently a professor of art at the University of Buffalo, Vanouse describes himself as a artist of emerging media forms, guided by "radical interdisciplinarity and impassioned amateurism."[18] His artworks, or "operational fictions," share many characteristics of CAE's work, in that they are "hybrid entities—simultaneously real things and fanciful representations."[19] This is an apt description for both *Society for Reproductive Anachronisms* and *Cult of the New Eve*, as they are both "real things" (Critical Art Ensemble, a group of performers with a particular goal) and "fanciful representations" (a group of activists advising men to wear codpieces to increase their sperm count).

Cult of the New Eve serves as a mirror to *Society for Reproductive Anachronisms*. Both performances are designed to uncover the problems the reprotech industry, but employ opposing tactics. Each offers an alternative to the current reprotech agenda. SRA takes natural reproductive practices to their extreme, while the Cult of the New Eve (CoNE) does the same with scientific reproductive procedures. Members of CoNE extolled the benefits of scientific achievements, the decoding of the human genome, and advances in reprotech. CAE cast "the new Eve," the anonymous female genetic donor whose blood sample was sequenced to complete the Human Genome Project, as the cult's messianic figure. The cult foretells the coming of the "Second Genesis," when humans "will remake all the plants and animals to serve [their] needs more efficiently" through

[18] http://www.paulvanouse.com/index.html.
[19] Ibid.

scientific advances, especially in molecular biology.[20]

Wearing the cult uniform of sunglasses and a red hooded sweatshirt with the image of the new Eve emblazoned on the chest, CoNE members engaged with audience members individually, singing the praises of the new Eve. The performance occurred in an open space, usually a gallery, through which visitors flowed, rather than being seated in a presentational format. Participants were then invited to explore the CoNE website at available computer terminals. As cult members passed out literature and prayer cards. Overall, this performance involved the same fluidity seen in *Society for Reproductive Anachronisms*, as opposed to the more structured *Flesh Machine* and *Intelligent Sperm On-line*, and shares a heavy focus on the website as performance.

The CoNE website both shares information about the cult and provides a few interactive experiences for participants who decide to join (see Figure 3). The site details the cult's mission statement, warns against the many false Eves that detract from the new Eve, and offers words of inspiration and upcoming miracles from leading scientists. The two interactive portions of the website involve the signing of a petition to the mayor of Buffalo, New York, to erect a monument honoring the new Eve (who was from Buffalo), and a "genetic code name generator," a computer program that is designed to create a genetic sequence that "represent[s] your proper name."[21] Unlike the genetic screening test found on the *Flesh Machine* website, this is no longer active.

[20] http://critical-art.net/Original/cone/coneWeb/mission/pop.html.
[21] http://critical-art.net/Original/cone/coneWeb/welcome/bg1.html.

Figure 3. The Cult of the New Eve home page.

CAE performers invited the audience to become members of the Cult of the New Eve by participating in a ritual replicating the communion ceremony of the Christian church. Through a recombinant DNA process, CAE artists engineered yeast containing the genetic code of the new Eve. The Office of Environmental Health and Safety at the University of New Hampshire defines recombinant DNA as:

1. A DNA molecule containing DNA originating from two or more sources.
2. DNA that has been artificially created. It is DNA from two or more sources that is incorporated into a single recombinant molecule.
3. According to [National Institute of Health] guidelines, recombinant DNA are molecules constructed outside of living cells by joining natural or synthetic DNA segments to DNA molecules that can replicate in a living cell, or molecules that result from their replication.[22]

[22] Amy B. Vento and David R. Gillum, "Fact Sheet Describing Recombinant DNA," (Durham: University of New Hampshire, 2002), 1.

The genetically engineered yeast created by CAE truly is recombinant; it is both artificially created and contains DNA from two sources. CAE used this yeast to create bread (the Host) and beer (the Eunigen Pure) for use in the ritual of Eve Consumption. Participants who choose to join the cult partake in the communion ceremony thereby ingesting the biological material of their messiah. Although actual scientific equipment and processes were used to create the communion materials, they were not done in public, but prior to the performance.

Unfortunately, the inclusion of genetically engineered food products prompted the cancellation of the action's planned performance as part of the 2002 exhibit *Gene(sis)*. The exhibit included almost sixty artworks, including Eduardo Kac's *GFP Bunny.* Ultimately, *Cult of the New Eve* was shown at the exhibit, but in a modified format that did not involve any live performance, only the website. The exhibit's final showing took place at Northwestern University in 2004, and was reviewed by Dr. Scott R. Winters, an oncologist with the Children's Hospital of Philadelphia. Winters describes the process the exhibit was required to undergo. In light of government anxiety of bioterrorist attacks, the exhibit was forced to cancel the performance of *Cult of the New Eve.*[23]

However, according to Tony Adler of the *Chicago Reader*, who also reviewed the exhibit's 2004 showing at Northwestern, CAE still showed its websites as a visual installation. In this installation, all of CAE's websites were available for view, including the BioCom website seen in *Flesh Machine*, the SRA website, and the CoNE website. Adler describes BioCom as "creepily believable," and the sites as "mak[ing] elegant, dry

[23] Scott R. Winters, "Engaged with sequences," *Science* 306, no. 5694 (October 8, 2004): 231. *Academic OneFile.*

fun of capitalism's amoral genius for absorbing everything into its matrix of profit and loss."[24] Although viewing the websites without the context of the live performance, Adler is still able to recognize that the Society for Reproductive Anachronisms and the Cult of the New Eve are fictional creations. However, this is not due to any characteristics of the organizations or of the websites. Rather, the context of the art exhibition in which the websites were displayed indicates that they are art objects. The artist statements and exhibition guide that accompanied the websites' presentation communicate to the viewer that the websites, and the organizations they represent, are counterfeit, not actual.

Theoretical Underpinnings and Artistic Precedents

Like *Flesh Machine* and *Intelligent Sperm On-line*, *Cult of the New Eve* and *Society for Reproductive Anachronisms* are designed to expose the new eugenic tendencies of the capitalist-driven biotech industry.[25] The possibilities created by the success of the Human Genome Project could be used to advance a eugenic agenda. For instance, prenatal genetic testing currently allows parents to discover certain genetic disorders or birth defects prior to the birth of their child, enabling them to decide whether or not to deliver the child. If advances in genetics continue, it could be possible in the future to order "designer babies:" children whose traits are predetermined in advance.[26] Debates surrounding these advancements have created an entirely new field of study: bioethics. Bioethicist Joanna Zylinska describes the field as prompting "philosophical questions about the constitution of the boundaries of the human and human life, as well

[24] Tony Adler, "Fooling with Mother Nature," *Chicago Reader,* November 11, 2004.
[25] For CAE's explanation of new eugenics, see "Eugenics: The Second Wave," in *Flesh Machine*, 119-137.
[26] For another example of the imagined future implications of reprotech, see the 1997 film *Gattaca*, directed by Andrew Niccol.

as considering policy implications of such developments for government bodies, health care institutions, and other social organs."[27]

But CAE remains cynical of bioethics and any ethical discussions on biotechnology issues:

> …to read literature on the flesh machine (which at this point is dominated by the medical and scientific establishments), one would think that ethics is of key concern to those in the midst of flesh machine development; however, nothing could be further from reality. The scientific establishment has long since demonstrated that when it comes to machinic development, ethics has no real place other than its ideological role as spectacle.[28]

Rather than engage in any kind of meaningful, critical discussion on ethical concerns, CAE sees the biotech industry as painting all advances in technology as "progress." They detail this view further in the article "Performing a Cult" (2000). According to CAE, the progress pledged by biotech ultimately "means nothing more than the expansion of capital, but presents itself as advancement of the common good."[29] This promise of progress extended to biotechnology, but what resulted was "the horror show of eugenics:" "selective breeding, forced abortions and sterilizations, and in the worst cases, genocide."[30] CAE maintains that, because the horrors of eugenics from WWII remain present in historical memory, science has to create a new rhetoric to separate itself from its checkered past.

CAE terms this rhetoric "new universalism," which is "the idea that if all DNA is part of every living creature and if it is all compatible, then the essential link between all

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[27] Joannna Zylinska, *Bioethics in the Age of New Media* (Cambridge: MIT Press, 2009), 5.
[28] Critical Art Ensemble, *Flesh Machine: Cyborgs, Designer Babies & New Eugenic Consciousness* (New York: Autonomedia), 59-60.
[29] Critical Art Ensemble, "Performing a Cult," *The Drama Review* 44.4 (2000): 167-168.
[30] Ibid., 168.

living creatures has been discovered. DNA can replace the soul."[31] CAE aims to uncover this new universalism advocated by the biotech industry in *Society for Reproductive Anachronisms* and *Cult of the New Eve*. In the latter, CAE adopts the new universalist rhetoric as members of CoNE, exposing it as rhetoric by removing it from the position of authority occupied by reprotech corporations. CAE contends that, by drawing on Biblical metaphors, the biotech industry reframes their work, especially the Human Genome Project, as both necessary and noble. They are not alone in this interpretation. José van Dijck describes the tendency of science writers to cast nature as a readable book, citing "frequent references to the Human Genome Project as the production of 'the Book of Man' or 'the Book of Life.'"[32] She also points out that in scientific accounts geneticists like Francis Collins and French W. Anderson are endowed with "divine qualities" in their quest to decode the genome.[33] Dorothy Nelkin and Susan Lindee, who analyze the human genome as a cultural icon, believe that "DNA in popular culture functions, in many respects, as the secular equivalent of the Christian soul."[34]

Because of this popular interpretation of DNA, according to CAE, the scientific industry has supplanted the Church as the vehicle to achieve human immortality (*Society for Reproductive Anachronisms*) and appropriated the rhetoric of religion to justify their capitalist actions (*Cult of the New Eve*). These performances are also a continuation of the issues raised in the *Flesh Machine* manifesto: the reproductive industry as an apparatus in service to the capitalist government. Much of the position paper for *Society*

[31] Critical Art Ensemble, "Performing a Cult," 169.
[32] José van Dijck, *Imagenation: Popular Images of Genetics* (New York: NYU Press, 1998), 129.
[33] Ibid., 132.
[34] Dorothy Nelkin and Susan Lindee, *The DNA Mystique: The Gene as a Cultural Icon* (New York: WH Freeman and Company, 1995), 8.

for Reproductive Anachronisms, in which CAE details the theoretical basis for the performance, is taken directly from the fifth chapter of *Flesh Machine*, "As Above, So Below."[35]

The essay contains an analysis of traditional opinions of reproduction and sexuality held by the Christian Church since the Middle Ages, especially their implications for women: "the Church fathers needed to naturalize the idea of sexuality for reproductive purposes only, and to reinforce motherhood as a redemptive state for women. The figure of Mary was constructed to support this ideology."[36] According to CAE and Faith Wilding, this narrative drove women to seek salvation through reproduction. The story of Mary became the example for all Christian women to follow:

> Mary, as the reprogrammed Eve—the pure vessel, fruitful though not tainted by human fertilization—had the special task of redeeming female bodies, especially the organs of sexual reproduction (material mater). Christ was a virtually conceived embryo that became both human and immortal (resurrected) flesh. Mary was the ethereal flesh machine (the hardware), who interfaced with God (the programmer) through the disembodied Word transmitted by the bodiless angel Gabriel (software).[37]

Clearly, CAE draws strong associations between this religious view that has permeated Western culture for hundreds of years and the advent of reprotech. Women are still driven to have children in search of immortality, but for genetic survival rather than spiritual fulfillment: the scientific and medical establishment has replaced the Church in the narrative.

The idea that science is the key to human life has, in CAE's belief, taken the place

[35] Critical Art Ensemble, *Flesh Machine,* 98-117.
[36] Ibid., 103.
[37] Ibid., 110.

and, more importantly, the power that the Church has held in Western culture for thousands of years:

> Rather than the church, with its connection to angelic saviors, acting as the institute of redemption in regard to the sin of sexuality and the finitude of the flesh, the scientific/medial establishment, with its connection to Nature's Code, has become the mediation for those who hope to achieve the grace of immortality.[38]

While CAE repeatedly states that they are not anti-technology, they are against the obfuscation of capitalist goals through the use of this quasi-religious rhetoric. *Cult of the New Eve* and *Society of Reproductive Anachronisms* are designed to uncover and expose the true aims of the biotech industry through the performance of two very different organizations.

Performance Strategies and Participant Experience

Cult of the New Eve and *Society of Reproductive Anachronisms* encapsulate several important shifts in CAE's artistic practice, especially in terms of audience experience. While *Flesh Machine* and *Intelligent Sperm Online* functioned as environments through which participants flowed, there was a specific structure involved in each performance. All participants experienced the components of the performance in a particular order, as they were guided through the environment by CAE members. The inclusion of a lecture as part of both performances, and a concurrent reinforcement of the traditional separation of performer and audience, colored the participant experience. This separation was underscored by lab coats worn by CAE performers. Both *Cult of the New Eve* and *Society of Reproductive Anachronisms*, however, move beyond this explicitly

[38] Critical Art Ensemble, *Flesh Machine,* 116.

structured component, instead functioning in an even more environmental capacity. *Cult of the New Eve* especially eschewed the presentational qualities of CAE's previous performances in a further rejection of the audience-performer binary and an increase in audience agency.

In *Cult of the New Eve,* there is no physical separation between participant and performer, as exists in *Flesh Machine,* where the audience and performer occupy a traditional proscenium arrangement. The ultimate goal of the performance is, in effect, to invite the audience member to become performer: to consume the communion materials and join the cult. The shift from a hybrid lecture-environment structure to one that is a purely performative counterfeit significantly alters the participant experience, emphasizing and creating a heightened sense of agency. As posited in the previous chapter, the experience of *Flesh Machine* and *Intelligent Sperm Online* is largely one of being-a-medium, as theorized by Robert Mitchell in *Bioart and the Vitality of Media*.[39] In a sense, *Cult of the New Eve* in particular shares that experience, but it also represents a transition to the opposite sense conceived by Mitchell: being-an-agent.[40]

Both of these senses are present in the embodied experience of *Cult of the New Eve.* Participants exercise their agency by *choosing* to listen to the cult's preaching outside of an explicit lecture environment. Furthermore, this sense of agency is furthered by the participants' interaction with the available computer terminals, as they *choose* to explore the cult's website. However, this sense of agency coexists with the same sense of being-a-medium present in CAE's previous performances, particularly within the act of

[39] Robert Mitchell, *Bioart and the Vitality of Media* (Seattle: University of Washington Press, 2010), 28.
[40] Ibid., 76-77.

the communion ritual. When participants choose to take the communion, they effectively become the medium of the performance, as their ingestion of genetically altered organisms initiates another biological process (digestion).

Significantly, in both of these pieces, CAE chose to perform as a cult, in contrast to the powerful and successful BioCom corporation that they created in their previous performances. There are both practical and theoretical reasons for this choice. The technical equipment and resources necessary for the performance of *Flesh Machine* was a significant financial burden. Part of the impetus for this shift in performance tactics was to provide a low-tech, low-cost, and highly mobile performance that could be sponsored by anyone and performed anywhere. The desire to lower production costs also drove the heavier emphasis on the website-as-performance:

> The main goal here was to produce an action that could be realized under almost any social condition. Production costs were extremely low, so any group or institution could sponsor [*Society for Reproductive Anachronisms*]. If participants had no computer skills, someone was at the table to help them. With a very simple gesture, a lot of complex information could be conveyed in an entertaining and inexpensive manner.[41]

By keeping production costs lower, a choice that resulted in the absence of the scientific equipment and processes present in *Flesh Machine*, *Cult of the New Eve* and *Society for Reproductive Anachronisms* could be performed at essentially any venue, even on the street. Other CAE actions have been designed as site-specific or public pieces performed on the street; for example, in 1998, the collective created *The International Campaign for Free Alcohol and Tobacco for the Unemployed* in Sheffield, UK, which explored the role of big business in public space. However, neither *Cult of the New Eve* nor *Society for*

[41] Critical Art Ensemble, "Recombinant Theatre," 164-5.

Reproductive Anachronisms was performed in a public street.

The choice to perform as a cult, while creating a more mobile and cost effective performance, also had a very specific theoretical basis. CAE hopes to change the public's reception of scientific promises by associating them with cult activity:

> The strategy was to move the advertising rhetoric of science and its marketers from a context of maximum authority and legitimation (i.e., the authority of science) to a context with the least amount. The social constellation that would function best in this regard would be a cult. Cults are the object of the most extreme skepticism...Through this social filter, the utopian promises of the flesh revolution are sent back into the public sphere in the hopes that the legitimacy of this rhetorical system will become corrupted via association with cult activity.[42]

The primary reason for this aesthetic choice is creating a permanent connotation between the biotech industry and a cult activity, thereby stripping science of its authority and delegitimizing the claims made by the industry. Furthermore, by offering audiences the choice of becoming active participants rather than passive observers, CAE strives toward their goal of demystifying science, which they would pursue further in their later performances.

The result of CAE's adoption of a cult persona is an effect similar to Guy Debord's Situationist concept of *détournement*. Debord saw the need to go beyond simple opposition to the concept of Art and artistic genius (an opposition that CAE also shares) to create political art. His practice of *détournement* made new meaning from preexisting elements, though Debord extended this idea beyond simply altering a painting or rearranging words to "the mutual interference of two worlds of feeling, or the juxtaposition of two independent expressions," which "supersedes the original elements

[42] Critical Art Ensemble, "Performing a Cult," 171.

and produces a synthetic organization of greater efficacy."[43]

Both *Cult of the New Eve* and *Society for Reproductive Organisms* exemplify this concept of synthetic organization through the appropriation and recontextualization of the ideas, messages, and symbols of the scientific industry and religious practice. CAE's deployment of *détournement* is most clearly seen in the ritual of Eve Consumption. This sacrament serves as an initiation of sorts into the Cult, in an act of "Molecular Cannibalism:"

> When the Cult performs the ritual of Eve Consumption, we eat the DNA of the New Eve—She is the one and the many, the general and specific…The Cult hopes that in the process of consuming this staple of life, we will reflect on the interconnectedness of all things, and remember that the taboo of cannibalism that haunted the first biological age no longer serves a purpose. The Cult also hopes that it is immediately apparent that this new world is one in which even ritual is founded on what can be apprehended by the sense. Our sacred bread is material, not a metaphor for something unseen and transcendent.[44]

By recasting the familiar Christian communion ceremony as the foundation of the Cult's belief system, CAE calls attention to the biotech industry's appropriation of religious rhetoric and prompts participants to examine the place of science in their own experiences.

In another act of *détournement,* both the Society for Reproductive Anachronisms and the Cult of the New Eve are imitations of CAE itself. As CAE is wont to compose manifestos about their own work, it is only appropriate that SRA and CoNE would compose one as well. The SRA Manifesto is distilled to ten specific points, or goals, of the society, including:

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[43] Guy Debord, "A User's Guide to Détournement," in *Situationist International Anthology*, ed Ken Knabb (Berkeley, CA: Bureau of Public Secrets, 2006), 15.
[44] http://critical-art.net/Original/cone/coneWeb/mission/pop.html.

1. That it will resist all eugenic initiatives, whether they are represented by the retrograde rhetorics of race and reason, or in the new rhetorics of economic necessity.
2. That it will maintain the connection between sexuality and reproduction, and fight to sustain the human right to sexual pleasure in all arenas of life.
3. That it will retard and disrupt the commodification of the flesh.
4. That it will expose the hidden authoritarian politics of reproductive technology.
5. That it will create avenues for the voices of all public spheres to enter the discussion of the development and deployment of new reproductive technology. The SRA will defend and value the voice of the amateur and the nonspecialist.
6. That it will increase awareness of the interconnection of sexuality and social responsibility.
7. That it will provide ways and means to improve fertility and fecundity.
8. That it will push the parameters of scientific prejudice by celebrating anomalies and the inexplicable.
9. That it will vanquish the market mythology of hardcore genetic determinism.
10. That is will disturb the waters of capital's gene pool.[45]

In contrast, the Cult's Mission Statement, which takes the form of an oath, charges its members:

AA) To protect the identity of the New Eve;
AC) To expose all imposters and pretenders to the throne of Eve;
AG) To help construct the new theology that will educate and guide all people during the time of the Second Genesis;
AT) To help prepare members of the public for the changes coming in the time of the Second Genesis, and to understand their role as the children of the New Eve;
CA) To eradicate the Extropian Menace.[46]

Though the respective ideologies of the Society for Reproductive Anachronisms and the Cult of the New Eve stand at opposition to each other, essentially attacking the reprotech industry from within and without, the aesthetics of these two performances are very similar. Both pieces strongly emphasize the performative nature of websites, their potential as performance, and their ability to interact with live performance. While the

[45] Critical Art Ensemble, "Manifesto," http://critical-art.net/Original/sra/SRAweb/manifesto.htm.
[46] Critical Art Ensemble, "Mission Statement," http://critical-art.net/Original/cone/coneWeb/welcome/bg1.html. Rather than Arabic numerals, the Cult uses the base pairs that are the components of DNA.

performances discussed in the previous chapter also employed websites as a performance tactic, the greater emphasis placed on their use in *Cult of the New Eve* and *Society for Reproductive Anachronisms* merits examination here.

The creation of elaborate websites for both the Cult of the New Eve and Society for Reproductive Anachronisms allowed CAE to share a large amount of information in a clear and efficient manner. To recall Mitchell's terminology, by inviting participants to engage in a performative interaction with the website, CAE created an experience of being-an-agent. Interface designer and scholar Brenda Laurel theorizes using theatre as both a metaphor for and a means of analyzing the human-computer interaction. Although her work is aimed at game designers, her theoretical structure provides some key insights when considering CAE's use of websites in *Society for Reproductive Anachronisms* and *Cult of the New Eve.*

The foundation of Laurel's work is the idea that human-computer interactions are inherently theatrical. The computer is a representation just like a theatrical performance:

> In a theatrical view of human-computer activity, the stage is a virtual world. It is populated by agents, both human and computer-generated, and other elements of the representational context…The technical magic that supports the representation, as in the theatre, is behind the scenes. Whether the magic is created by hardware, software, or wetware is of no consequence; its only value is in what is produces on the 'stage.' In other words, *the representation is all there is*.[47]

The experience of the audience, or users, of this representation is similar to the experience of audience members at CAE performances. They are not audience members, but active participants. Laurel posits that "people who are participating in the

[47] Brenda Laurel, *Computers as Theatre* (New York: Addison-Wesley Publishing Company, 1993), 17, emphasis in original.

representation aren't audience members anymore. It's not that the audience joins the actors on the stage; it's that they *become* actors—and the notion of 'passive' observers disappears."[48] Engaging with a representation, like the Cult of the New Eve's website, is an inherently active experience, which demonstrates why CAE places such emphasis on the use of websites in their performances. Not only is it an efficient way to share information with a large number of people, but the engagement with the website, participation in the representation, echoes the participants' experiences with CAE performers.

Laurel also points to three central differences between drama and narrative, which demonstrate the benefits of her theatrical metaphor: enactment, intensification, and unity of action.[49] The idea of enactment is key to Laurel's analysis as well as this one. Clearly, as performance, enactment is a central characteristic of CAE's work, even more so as the audience experience shifts from passive to active. But enactment is also central to the use of computers found in *Society for Reproductive Anachronisms* and *Cult of the New Eve*.

The theory of the experience of computers-as-performance remains an ever-changing landscape; as technologies shift, so does the analysis of the experience of them. As Sue-Ellen Case demonstrates, the arrangement of information on a computer screen is the antithesis of traditional, linear narrative. Rather than experiencing information in a sequential order, "the computer screen offers multiple arrangements of data, allowing the reader to form the development of materials in a multitude of ways."[50] Each visitor to the

[48] Laurel, *Computers as Theatre,* 17, emphasis in original.
[49] Ibid., 94-95.
[50] Sue-Ellen Case, *The Domain-Matrix: Performing Lesbian at the End of Print Culture* (Bloomington: University of Indiana Press, 1996), 33.

Society for Reproductive Anachronisms website has a singular performative experience. Each decides which page to read first and whether or not to follow the prompt to click on the SRA Tip of the Day.

Moreover, the use of a website as a performative tool underscores CAE's vehement antagonism to the primacy of the author. Case identifies the computer screen as a mode of performance that could become "a late capitalist version of 'closet drama'…a kind of screened performance in the hands of an *auteur*, who could bring all the elements of performance together on the screen for 'private' viewing."[51] As each participant directs their own experience in their interaction with the website, they become, in effect, creators of the performance. In this way, these performances break down the traditional separation of audience and performer; not only can anyone be a scientist, but anyone can be an artist. While CAE successfully achieved a more active audience experience in *Society for Reproductive Anachronisms* and *Cult of the New Eve* than in their previous actions, they continued to explore ways to increase audience agency in their next pieces: *GenTerra, Molecular Invasion,* and *Free Range Grain.*

[51] Case, *The Domain-Matrix*, 74.

Chapter 4
"Transgenic Solutions for a Greener World:"
GenTerra, Molecular Invasion, and *Free Range Grain*

In May 2004, the Supreme Court of Canada issued its decision in the case *Monsanto Canada Inc. v. Schmeiser.* The case, which was first filed six years earlier, was portrayed in the media as a sort of David and Goliath story, pitting corporate giant Monsanto against ordinary Saskatchewan farmer Percy Schmeiser. He maintained that in 1997 some of Monsanto's patented Roundup Ready canola seeds had blown into his field. He harvested his crops and replanted the following season using the seeds he had reaped the previous season. In 1998, Monsanto visited Schmeiser to obtain a license fee and his signature on their licensing agreement. But Schmeiser refused, claiming the seeds used to grow his 1998 canola crop were his property, as the Roundup Ready seeds had accidentally contaminated his 1997 crop. Monsanto sued Schmeiser for patent infringement, and Schmeiser countersued for libel, trespassing, and the initial contamination of his custom-bred canola crop in 1997.[1]

How the original Monsanto seeds ended up in Percy Schmeiser's field in 1997 remains unclear, but the courts' ruling had larger implications for the global food industry. In a 5-4 decision, the court ruled in favor of Monsanto, declaring that the corporation could patent the genes and genetically modified cells of a plant without

[1] Kirk Makin "Plant genes, modified cells can be patented, court rules," *The Globe and Mail* (Toronto), May 22, 2004; Adrian Ewins, "Legal battle over patented canola set for next June," *The Western Producer*, August 19, 1999.

owning the plant itself. This was the first major court ruling involving corporations' ability to patent genes, and it prompted a global debate on the possibilities and consequences of patenting life. CAE engaged in this debate in their final three biotechnology performances: *GenTerra* (2001), *Molecular Invasion* (2002), and *Free Range Grain* (2003). Collectively, these projects not only represent a shift in content, from reprotech to agribusiness, but also a dramatic shift in CAE's performance tactics, from participants donating their genetic material in *Flesh Machine* to participants engineering transgenic bacteria using scientific equipment in *Molecular Invasion.*

GenTerra

CAE began its exploration of non-human genetic modification with *GenTerra*, which it performed from 2001 to 2003. Following its premiere at the University of Pittsburgh, CAE took *GenTerra* across the world, including to the Natural History Museum, London; Gallery Oldham, Manchester, UK; St. Norbert Art and Cultural Center, Winnipeg, Canada; and the Centre National d'Art Contemporain, Grenoble, France. *GenTerra* was CAE's first collaboration with Beatriz da Costa, whose own interdisciplinary artwork and scholarship shares CAE's political and scientific concerns.

In her artist statement, da Costa described herself as an artist who "works at the intersection of contemporary art, science, engineering and politics. Her work takes the form of public participatory interventions, locative media, conceptual tool building and critical writing."[2] Her interests included "examin[ing] the role of the artist as a political

[2] Beatriz da Costa, "About," bdcosta.net.

actor engaged in technoscientific discourses."[3] Da Costa had a strong background in robotics and engineering, and was one of the founding members of the Arts Computation, Engineering graduate program at UC Irvine, where she was an associate professor of Studio Art, Electrical Engineering, and Computer Science.[4] Da Costa would also contribute to the next two CAE performances.

CAE describes the *GenTerra* action as "a live exploration of the variety of discourses on transgenics and in relation to environmental risks and human health policy."[5] The event followed the model of CAE's previous performative actions: CAE members performed as researchers for GenTerra, a corporation "committed to creating products through the use of new transgenic technology that will solve the many social and ecological problems that we all face."[6] Costumed in long white lab coats, the GenTerra researchers explained the process of creating transgenic bacteria and organisms to participants, who could also explore the company's website (see Figure 4).

As in previous CAE actions, participants could donate a DNA sample for GenTerra's use. However, unlike the samples taken in *Flesh Machine,* which were only used in a genetic test, participants in *GenTerra* could create a new transgenic bacteria made from their own genetic material and a modified form of *E. coli* found in the human digestive system. Once the bacteria were created, participants could choose to take a sample home for their own use.

Another key element of the *GenTerra* action is the Transgenic Bacteria Release

[3] Beatriz da Costa, "About," bdcosta.net.
[4] Da Costa died in December 2012 after a long battle with cancer.
[5] http://critical-art.net/Biotech.html.
[6] http://critical-art.net/Original/genterra/genWeb.html.

Machine, which was created using da Costa's engineering expertise. The machine is a hulking, robotic arm encircled by ten covered petri dishes, one of which contained transgenic *E. coli* bacteria. Participants could choose to press the red button on the machine, causing the robotic arm to open one of the containers at random and expose everyone in the room to the bacteria inside: "a sort of biological Russian roulette."[7] While removing the cover of the petri dish does open its contents to the air, the bacteria cannot escape the confines of the petri dish. None of the participants were in danger of contracting any illness, but it is unclear whether or not participants knew about the bacteria's behavior. CAE and da Costa were certainly aware of the connotations of the Transgenic Bacteria Release Machine. As Robert Mitchell mentions in his analysis of the action, the Transgenic Bacteria Release Machine "exploits the fact that many people will associate this term (at least in the United States) with illnesses caused by contaminated food."[8] Moreover, the terrorist attacks of September 11 have fomented a climate of bioparanoia in which the public is in constant fear of bioterrorist attack, despite evidence of any such events.[9]

Video footage of the *GenTerra* performance at Gallery Oldham in Manchester in 2002 shows participants of varying ages in conversation with performers in lab coats, using computer terminals, viewing bacteria through microscopes, and creating their own transgenic bacteria. Three participants were interviewed, though they are not identified by name: a man, a woman, and a child. The man explains that he wanted to see the

[7] Robert Mitchell, *Bioart and the Vitality of Media* (Seattle: University of Washington Press, 2010), 69.
[8] Ibid., 136n1.
[9] For CAE's theorizing of bioparanoia, see Critical Art Ensemble, "Bioparanoia and the Culture of Control," in *Tactical Biopolitics: Art, Activism, and Technoscience*, ed. Beatriz da Costa and Kavita Philip (Cambridge: MIT Press, 2008), 413-427.

performance because of his interest in biotech and the staging: "…the way GenTerra staged the whole presentation, the way they present themselves as scientists, the way they present the laboratory experience, that's what I wanted."[10]

Figure 4. The home page of GenTerra's website.

Although he refers to the performers as GenTerra, he seems aware that it is a fictitious corporation:

The fact that Critical Art Ensemble are performers, that they are taking on the role

[10] Critical Art Ensemble, "Genterra, Critical Art Ensemble, 2002," *The Arts Catalyst,* 5:56, March 9, 2010, https://www.youtube.com/watch?t=19&v=6vwS74vEPFI.

> of scientists, it's not so much that it presents truth it's more that it presents a way of perceiving things, a way of perceiving science and a way of experiencing biotechnical processes that are easier to grasp. They materialize these processes so that they lose their abstraction and they lose their distance…[11]

In this case, CAE has accomplished their goal; for this participant, they successfully demystified scientific concepts and demonstrated their relevance in daily life. CAE hopes that this increased knowledge and the recognition of the importance of biotech issues to everyone will lead their audiences to become better citizens. Steve Kurtz explains CAE's goal for *GenTerra*'s audiences in an interview:

> …with the information maybe that they've gathered here, they can become more involved and they can become better on the citizen level, or for the cases that are more extreme that they can become involved on an activist level, on a better-informed basis than when they walked in. And if we did that, then we're pretty happy with what the results are.[12]

Molecular Invasion

In 2002, CAE again collaborated with da Costa, as well as interdisciplinary artist Claire Pentecost, on *Molecular Invasion.* Pentecost is currently a professor of Photography at the School of the Art Institute of Chicago. Primarily a visual artist, Pentecost aims to "use art to politicize and create public knowledge around the production, distribution, and consumption of food," primarily through the concept of the "public amateur."[13] An influence throughout Pentecost's body of work, the public amateur is an artist or citizen who enters traditionally specialized discourses (like those in science and technology) to prompt critical discussion of how science functions in the public sphere. Much of Pentecost's work uses the same strategies of *détournement* that

[11] Critical Art Ensemble, "Genterra, Critical Art Ensemble, 2002," *The Arts Catalyst*.
[12] Ibid.
[13] Thom Donovan, "5 Questions for Contemporary Practice with Claire Pentecost," *Art21 Magazine,* January 12, 2012, blog.art21.org.

CAE employs. Her project *The Grub Heap Kernel* (2006), *détourned* a traditional print newspaper. Complete with articles, advertisements, comics, obituaries, the piece aimed to increase public knowledge of corporate practices in the food industry.[14]

For *Molecular Invasion*, which continued until 2004, CAE, da Costa, and Pentecost also worked with students from the Corcoran School of Art and Design in Washington, D.C. Through this "participatory science-theater work," CAE took on one of the largest biotech corporations in the world: Monsanto.[15] The Monsanto Company, an American agricultural business and one of the largest producers of genetically engineered seeds in the world, is famous for its patented genetically modified soybean. The Roundup Ready soybean has been engineered to resist a specific pesticide, glyphosate, which Monsanto also produces under the brand name Roundup. Monsanto is no stranger to controversy, and has faced numerous protests worldwide for their scientific and business practices.[16]

CAE obtained a number of Roundup Ready seeds (soy, corn, and canola) and planted them in the Corcoran Gallery, alongside natural seeds used as a control group. After the seedlings had grown, the artists sprayed the GMO plants with a nontoxic chemical, pyridoxal 5-phosphate (PLP), a form of vitamin B-6. By applying PLP to the plants, the artist attempted to reverse their genetic modification and make them susceptible to pesticide. A few days later, CAE sprayed all of the plants, both GMO and natural, with Roundup pesticide. The project was deemed successful when all of the

[14] For more on Pentecost, see her website publicamateur.org.
[15] http://critical-art.net/Biotech.html.
[16] For another theatrical response to Monsanto, see Annabel Soutar's 2012 docudrama *Seeds*, chronicling the case of *Monsanto Canada Inc. v. Schmeiser*.

plants were killed by the pesticide, even the Roundup Ready plants that had been genetically engineered to be resistant.

Visitors to the gallery were provided with various materials that explained the ongoing science-theater project. These included the project website, which offered information about important CAE concepts, scientific terms, and the PLP chemical. CAE also created a book, *Betty Crocker 3000 Presents Food for a Hungry World,* which is now available as an appendix to their larger work *Molecular Invasion* (2002). *Food for a Hungry World* targets corporations like Monsanto as well as "foodie culture that is so out of touch with what working people are facing in regard to food options."[17] The book envisions a future where genetically engineered foods are ubiquitous and natural ones are luxury items. It offers a selection of satirical recipes "to show that with a little imagination, [genetically engineered] foods can be so delicious and appetizing that you will never miss the certified organic products you cannot afford."[18] Recipes include "Mock-lobster recombinée," "Antibiotic bananas with Hershey's chocolate syrup," and even "Ragout Alba la Provencale" using rabbit modified with Green Fluorescent Protein, a nod to their fellow bioartist Eduardo Kac and his work *GFP Bunny*.

Free Range Grain

Free Range Grain (2003-2004), CAE's final performative exploration of transgenic issues, premiered at Schirn Kunsthalle, Frankfurt, Germany, and later traveled to the ESC Gallery in Graz, Austria. For this project, CAE again collaborated with da

[17] Linda Weintraub, *To Life!: Eco Art in Pursuit of a Sustainable Planet* (Berkeley: University of California Press, 2012), 150.
[18] Critical Art Ensemble, *Molecular Invasion* (New York: Autonomedia, 2002), 131-132.

Costa, as well as molecular biologists Shyh-shiun Shyu and Mustafa Unlu. Both scientists, who were Ph.D. students at the time, were invaluable to the project. Unlu, who was studying biology at the University of Pittsburgh, helped the artists identify specific chemical compounds for use in the piece. Shyu, who was studying biology at SUNY Buffalo, assisted the artists in selecting, ordering, and operating the necessary scientific equipment. Da Costa emphasizes that the assistance of both scientists was necessary for the creation of the piece.[19] However, in descriptions of *Free Range Grain*, only Shyh-shiun Shyu is credited.

In this action, CAE prompted participants to bring food items from their own homes into the gallery, where CAE members and collaborators ran a series of tests covering several common genetic modifications. The testing process took approximately seventy-two hours to complete. While the testing could not determine with total certainty that a product was genetically modified, only a strong probability of genetic modification, the tests could provide conclusive negative results. Once products had been tested, those that were most likely genetically modified, or "contaminated," were displayed in the gallery and offered to participants for their consumption at their own risk.

Unlike all previous CAE actions discussed here, *Free Range Grain* was both a response to a specific event and designed for a specific audience. In 2003, the European Union passed a regulation that mandated the labeling of all GM food products, including those used in crops and animal feed. A result of longstanding public anxiety about the potential effects of GMOs among the European population, this regulation aimed "to

[19] Beatriz da Costa, "Reaching the Limit: When Art Becomes Science," in *Tactical Biopolitics: Art, Activism, and Technoscience*, ed. Beatriz da Costa and Kavita Philip (Cambridge: MIT Press, 2008), 376.

inform consumers through the compulsory labeling, giving them freedom to choose" and "to create a 'safety net' based on the traceability of GMOs at all stages of production and placing on the market" to monitor any effects on the environment or the population.[20] The majority of GM products in the European Union, and the majority of GM crops grown globally, originates in the United States, which holds a dramatically different attitude toward regulation and mandatory labeling of said products. Currently, sixty four countries require labeling of GM products, while in the United States labeling remains voluntary. The disparity between E.U. and U.S. regulation caused CAE to become "quite skeptical that the E.U. will be able to maintain its borders against such 'contaminated' commodities" as GM corn and soy.[21] *Free Range Grain* was specifically geared toward European audiences, to explore the possibility of GMO presence in their foodstuffs and generate critical discussion about GMOs.

Theoretical Underpinnings

As a companion to the GMO projects, CAE published the book-length manifesto *Molecular Invasion.* In it, CAE details the theoretical foundations of *GenTerra, Molecular Invasion,* and *Free Range Grain.* Before expounding on the theoretical basis of the GMO projects, CAE addresses the question of whether they are "for or against" GMOs, which they both do not answer and maintain is not a useful question to ask. They believe that:

> the real question of GMOs is how to create models of risk assessment that are accessible to those not trained in biology so people can tell the difference between a product that amounts to little more than pollutants for profit and those which

[20] http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1431996453556&uri=URISERV:l21170.
[21] http://critical-art.net/Original/free/.

> have a practical and desirable function, while at the same time have not environmental impact.[22]

But because of the persistent belief that science is a specialized field that is too difficult for non-specialists to grasp, an idea exploited by biotech corporations, the public remains in the dark about the realities of GMOs. In the following six chapters of the manifesto, CAE outlines the ways "to use rogue representational capital for purposes of consciousness raising:" in other words, how to appropriate the signs and language of biotech in performance to inform the public. Much of the manifesto is a kind of do-it-yourself guide to bioresistance. CAE presents a model of "contestational biology," the most successful "means of slowing, diverting, subverting, and disturbing the molecular invasion."[23]

According to CAE, the most effective way to combat the privileging of profits over environmental and human safety is "to disrupt the profit flows" of agribusiness corporations.[24] In modern biotech corporations like Monsanto, profit flows are directly tied to living organisms and their genetic components, such as the Roundup Ready gene. Therefore, traditional and electronic forms of protest, while potentially useful, will not be as damaging to these corporations. The most effective form of resistance in this case is contestational biology, in which "the new molecular/biochemical front [is] directly engaged as a means to disrupt profits."[25] Agrotech directly engages with life on the molecular level, by patenting specific genes, for example. So, CAE must also engage at the molecular level, through contestational biology.

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[22] Critical Art Ensemble, *Molecular Invasion*, 3-4.
[23] Ibid., 12.
[24] Ibid., 10.
[25] Ibid.

The specific tactics CAE deploys as contestational biology have many parallels with their earlier work in electronic civil disobedience. Rather than hacking websites or other electronic fronts, contestational biology involves the hacking of living organisms, or "fuzzy biological sabotage." By functioning in the "fuzzy" areas that have yet to be fully regulated, "the fuzzy saboteur has to stand on that ambiguous line between the legal and the illegal…from that point, the individual or group can set in motion a chain of events that will yield the desired final result."[26] CAE offers several examples of fuzzy biological sabotage, including pranks, such as releasing flies in or near biotech facilities to create paranoia among the workers, because "a paranoid work force is an inefficient work force. This approach thus creates inertia in the system." Ideally, this prank would cause "an investigation into the origins of the flies…which would burn more cash and waste even more employee time."[27] Another example of fuzzy biological sabotage entails spraying Roundup Ready crops with a harmless enzyme that would alter their color, "thus making all [Roundup Ready] crops an undesirable color from the point of view of the consumer."[28] Because consumers would not purchase the products, Monsanto's profit flows are interrupted. These acts are designed to disrupt the profits of agrotech while protecting both the fuzzy biological saboteurs from possible legal ramifications and farmers or workers from any kind of harassment.

CAE also sees the biotech industry as creating and promoting a climate of fear surrounding transgenic ideas, while simultaneously circulating a "promissory rhetoric"

[26] Critical Art Ensemble, *Molecular Invasion,* 101.
[27] Ibid., 104.
[28] Ibid., 114.

that elevates science as the new religion. In the case of GMOs, CAE points out the claims of scientists and agribusiness that genetically engineered food will "feed a hungry world" and solve global hunger. Critics of biotech, on the other hand, accuse scientists of "playing God."[29] Rather than provide for any critical investigation of the actual effects of GMOs and the current food system, these opposing viewpoints focus public discourse on the ethical or moral question of their use.[30] CAE's goal, then, is to:

> …replace this rhetoric with a critique of power that reveals the relationship of individuals to biopolitical authority and the consequences of these relationships. *Providing simple, practical tools of risk assessment that are grounded in science and placed within historical and cultural context* is the easiest way for doubt to be transformed into insightful critical questions.[31]

As they have repeatedly emphasized in various writings, CAE claims that they do not hold any specific ethical or legal position regarding the presence of GMO products in the global food system. Instead, CAE hopes to create the knowledge and opportunity for the public to ask questions about GMOs and the corporations that create them.

The GMO projects were also the continuation of the core ideas behind CAE's reprotech performances, namely demystifying scientific knowledge and emphasizing the amateur. Arguably, it is only in these performances that CAE achieves these goals. Unlike the reprotech performances, in the GMO projects, participants could both witness and contribute to actual scientific processes as part of the performance event. The direct, hands-on experience with transgenic bacteria increases their legibility for the nonspecialist audience. A young boy, when interviewed about his experience in the

[29] Critical Art Ensemble, *Molecular Invasion*, 63.
[30] CAE uses the debate on cloning as another example of this problem.
[31] Critical Art Ensemble, *Molecular Invasion,* 64, emphasis mine.

GenTerra action, explains the transgenic bacteria in his take-home petri dish:

> Well what I've got inside, I've got a little stick and the circle end is where the bacteria is, and put it in a bit of…seaweed nutrition and the bacteria's growing on the bottom at the moment. You can see it's kind of a dot, that's the bacteria growing on the bacteria's food, because bacteria need food to survive. And once it gets bigger, it produces—it's like having babies, but it doesn't really have babies. Once they touch each other, it starts producing more and more and more. It doesn't matter how much you did put in, you get more.[32]

In his own terms, this young participant described the process of cellular reproduction, demonstrated the clarity and effectiveness of this particular action. By guiding participants through a scientific experiment identical to one that would be performed in any laboratory, CAE successfully demystifies this particular scientific concept, revealing its simplicity and accessibility.

Artistic Precedents

The work of the avant-garde artists that CAE cite in their writings continues to influence these performances, including Kaprow and Debord. However, the impact of another theatre artist can be seen particularly in the GMO projects: Joseph Beuys. The structure of these three projects bears strong theoretical similarities to Beuys' concept of social sculpture. While he spent his artistic career working with and refining the concept, Beuys defines social sculpture broadly as "how we mold and shape the world in which we live: SCULPTURE AS AN EVOLUTIONARY PROCESS; EVERYONE AN ARTIST."[33] Beuys was interested in the how the same creative impulses that lead to artmaking could change the world socially and politically. His installation *Bureau for*

[32] Critical Art Ensemble, "Genterra, Critical Art Ensemble, 2002," *The Arts Catalyst.*
[33] Joseph Beuys, *Energy Plan for the Western Man: Joseph Beuys in America: Writings by and Interviews with the Artist,* ed. Carin Kuoni (New York: Four Walls Eight Windows, 1990), 19.

Direct Democracy at the 1972 Documenta 5 exhibition in Kassel, Germany, is an important precursor to CAE's practice, as well as that of other contemporary artists.

In this 100-day installation, Beuys and several assistants staffed an office for the Organization for Direct Democracy through Referendum, which Beuys had founded in 1971. The installation environment was a simple one:

> Beuys, in a red fishing vest and felt hat, is in his office. He has two co-workers. On the desk is a long-stemmed rose, next to it are piles of handbills. On the wall with the window is a blue neon sign that says 'Office of the Organization for Direct Democracy through Referendum.' Besides this, there are several blackboards on the walls. One each is written the word 'man.'[34]

Each day, visitors to the exhibition had the opportunity to engage Beuys in critical discussion about direct democracy and how it might come about. Every person who visited Beuys office had the choice to speak with him, or not, and was offered a handbill. A report on one day of the installation lists a total of 811 visitors, of which thirty-five asked Beuys questions or participated in discussion.[35]

Patricia C. Phillips describes social sculpture, as "the nexus of human action and ecological principles…If there was a strongly articulated intent, the results were often dispersed, indeterminate, incremental, and so 'natural' as to be rendered invisible."[36] Her analysis of Beuys recalls Nato Thompson's conceptualization of CAE's practice: "their work is not sustained over a long time but instead makes small insertions in the larger

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[34] Joseph Beuys and Dirk Schwarze, "Report on a Day's Proceedings at the *Bureau for Direct Democracy*, in *Documents in Contemporary Art: Chance,* ed. Margaret Iversen (Cambridge: MIT Press, 2010), 120.
[35] Ibid., 122.
[36] Patricia C. Phillips, "Social Sculpture: The Nexus of Human Action and Ecological Principles," in *The New Earthwork: Art Activism Agency*, ed. Twylene Moyer and Glenn Harper (Seattle: University of Washington Press, 2011), 234-235.

circuits of dialogue and media."[37] Both Beuys and CAE strive to change the way people think, targeting them on an individual basis rather than attempting to reach large audiences. As Kurtz stated in an interview with Arts Catalyst:

> …what we're really interested in is a qualitative experience for the person who's engaged in dialogue. When they're embodied…all of consciousness is taken by that experience, and done so in a way that's rather rigorous, in that they move through different kinds of hands-on experience…And what we find then is that you get a lot more information in there and that it's remembered, that it really sticks with the person and rolls around in their minds for a much longer period of time, which is why we're far less interested in numbers that we are in the quality of the experience itself.[38]

For both Beuys and CAE, engaging one participant in actual critical discussion is far more valuable than hundreds of people merely viewing the gallery installation.

Moreover, Beuys focuses on education rather than direct action: "…real future political intentions must be artistic. This means that they must originate from human creativity, from the individual freedom of man. For this reason here I deal mostly with the problem of education, with the pedagogical aspect."[39] As Rebecca Schneider points out, CAE also emphasizes pedagogy rather than direct action, because "pedagogical actions can slide into the space between location and dislocation, visibility and invisibility."[40] Or, to use CAE's terminology, pedagogical actions can inhabit the fuzzy space outside of regulation.

CAE's counterfeit corporations and fictitious societies echo Beuys' Organization for Direct Democracy through Referendum, although Beuys' political organization was

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[37] Nato Thompson, "A Working Guide to the Landscape of Arts for Change," *Animating Democracy* (New York: Americans for the Arts, 2011), 9.
[38] Critical Art Ensemble, "Genterra, Critical Art Ensemble, 2002," *The Arts Catalyst.*
[39] Beuys, "Report on a Day's Proceedings," 124.
[40] Rebecca Schneider, "Nomadmedia," *TDR: The Drama Review* 44, no. 4 (2000): 126.

far from feigned. The Organization for Direct Democracy was an actual political group, as for Beuys art and politics could not and should not be separated: "Politics has to become art, and art has to become politics. That's exactly the point I am making: all human activities have to become art, and they have to be organized by artists."[41] In CAE's view, however, a political organization like the Organization for Direct Democracy through Referendum is no longer an effective form of resistance. The control society has rendered that type of action futile. Instead, other forms of cultural resistance, like electronic civil disobedience and tactical media, are needed.

Performance Strategies and Participant Experience

In her examination of *Flesh Machine*, Rebecca Schneider asks the vital question "how much 'real science' is involved?'"[42] As CAE explains in a variety of published writings and detailed in all analyses of their work, all of the science is real, in the sense that actual equipment and processes are used. One of the central tenets of all of CAE's performances is to "build respect for amateurism" and promote the idea that the scientific processes taking place in laboratories are not incomprehensible:

> The perception that science is too difficult for anyone other than a specialist to understand is socially ingrained in those separated from the discipline on an everyday life basis…however, while such perceptions have a serious degree of truth to them, they are also overexaggerated. Within a very brief period of time, anyone who is modestly literate can learn the fundamentals of scientific study and ethics.[43]

Maintaining the fiction that only a select few can comprehend the science behind biotech is part of the capitalist agenda. CAE strives to disprove this perception in each of their

[41] Beuys, *Energy Plan for the Western Man,* 37.
[42] Schneider, "Nomadmedia," 120.
[43] Critical Art Ensemble, *Molecular Invasion*, 4.

performative events, by teaching fundamental laboratory processes and by bringing biotech issues into the everyday life of the audience.

It is possible to argue, however, that the members of CAE and their artistic collaborators (Beatriz da Costa and Claire Pentecost) are not, in fact, amateurs. They are highly educated and connected to both people and resources. Founding CAE member Steve Kurtz, for example, currently teaches in the art department at SUNY Buffalo, and Beatriz da Costa taught in both the departments of art and computer engineering at UC Irvine. Clearly, the members of CAE and their collaborators are experienced and knowledgeable artists who are employed in academia. Da Costa addresses this problematic position within academia:

> Not only are job opportunities outside the university scarce…but direct access to the locations where science is being conducted is often a necessity for those who wish to become active players in the shaping of socioscientific discourses and their (mis)appropriation by cultural, political, and economic forces.[44]

Artists like da Costa see an academic position as a necessary evil in order to pursue their creative agendas, and one that must be addressed. She also laments the inability of artists to acquire the range of skills necessary to work effectively in technoscience, because knowledge in the life sciences has become so specialized. She sees two ways to approach this problem, one being public amateurism.

Many artists, including several discussed here, have theorized public amateurism: CAE, Claire Pentecost, Eugene Thacker. These artists "have ventured to find help in the realm of hobbyism and do-it-yourself home recipes for conducting scientific

[44] Da Costa, "Reaching the Limit," 365-366.

experiments."[45] The virtual project *Biotech Hobbyist* (1998) is the prime example of this type of practice. Created by Natalie Jeremijenko, Heath Bunting, and Eugene Thacker, the *Biotech Hobbyist* is an online magazine that publishes biotech experiments for the public, including information on how to obtain the necessary equipment.[46] Although it is impossible to measure how many people are performing the experiments listed there, any layperson who reads the website could feasibly complete a wide variety of biotech processes in their own homes.

This is the approach to biotech knowledge that CAE took in its reprotech performances; the scientific processes, while all real, were self-taught. In the GMO projects, CAE used another method, described by da Costa as "lay-expert relations." Simply put, the content of the projects necessitated the involvement of scientific experts. As da Costa explains, "the production and development involved in order to bring these projects into existence are clearly dependent on active cooperation between scientific experts and the group itself."[47] For example, for *Free Range Grain,* CAE needed to consult with scientists Mustafa Unlu and Shyh-shiun Shyu in order to create the project. The piece could not have been created without their assistance.

Rather than *how much real science is involved*, perhaps a better question to ask of CAE's work, is *how much real science is undertaken by the audience?* The reprotech performances relied on actual scientific processes for completion, such as the creation of transgenic yeast for the communion ceremony in *Cult of the New Eve.* But the scientific

[45] Da Costa, "Reaching the Limit," 373.
[46] For the *Biotech Hobbyist,* see http://www.nyu.edu/projects/xdesign/biotechhobbyist/index.html. For an analysis of the magazine, see Mitchell, *Bioart and the Vitality of Media,* 64-67.
[47] da Costa, "Reaching the Limit," 376.

processes of extracting the DNA and incorporating that DNA into the yeast molecules, while essential components of the final project, were completed before the performance. The audience did not observe or witness the creation of the recombinant yeast. Of the reprotech projects, only *Flesh Machine* involved actual scientific experimentation during the performance event. The other three reprotech projects drew on scientific concepts and jargon, but no experimentation was completed in the course of the performance. Because the focus of *Intelligent Sperm On-line, Cult of the New Eve,* and *Society for Reproductive Anachronisms* involved the rhetoric of the biotech industry, scientific experimentation served as a framework for the projects rather than their content.

When reflecting on her work with CAE, da Costa wrote that collectively the GMO projects were the most effective merging of CAE theory with practice.[48] *GenTerra, Molecular Invasion,* and *Free Range Grain* take CAE's mandate to demystify scientific processes much further than their previous performances by providing participants with the opportunity to either directly observe or actively join in scientific experimentation. For example, in *Flesh Machine,* participants donated their DNA for genetic testing and observed the scientific processes involved in the reprotech industry. But participants did not undertake any scientific experiments themselves. However, in *GenTerra*, participants not only provided their DNA as material for the experiment, but they performed an experiment themselves. This is the key distinction between CAE's reprotech performances and the GMO projects, as well as the reason that *GenTerra, Molecular Invasion,* and *Free Range Grain* more effectively achieve the CAE objectives of

[48] da Costa, "Reaching the Limit," 374.

demystifying science and promoting amateurism.

One contributing factor to this increased audience agency is simply the content of the performances. Unlike reproductive technologies, which audiences may or may not have direct experience with, the current food system has an immediate relevance to everyone. And, while technological developments like predetermining the eye color of an unborn child still smack of science fiction, genetically modified products have existed for consumption since the 1980s.[49] The first GMO food products appeared in grocery stores in the United States in 1992, and their presence has increased dramatically since then. Agribusinesses like Monsanto are much more embedded in everyday life for a larger portion of audiences than reprotech, making their effects pertinent to more participants.

The subject matter of the GMO projects also lends itself more easily to public experimentation. CAE faced objections from participants and venues for using a donated unviable embryo as a model in *Flesh Machine*, and they possibly would have faced further backlash for attempting any actual experiments in the course of a reprotech project. The technology, equipment, and materials necessary to perform, for example, an artificial insemination procedure are both expensive and difficult to transport. Conversely, the equipment needed to create transgenic bacteria (*GenTerra*) or test food products for genetic modification (*Free Range Grain*) is easily obtained, used, and transported, making public experimentation much easier to accomplish.

Two levels of public experimentation can be seen in the three GMO projects: observation and participation. *Molecular Invasion*, as a "theater of live public

[49] Rather than a food product, the first commercially available bioengineered consumer product was a form of insulin.

experimentation," provided audiences with the opportunity to witness the process of a scientific experiment.[50] The explicit goal of the project was to explore "the possibilities of reverse engineering Monsanto's highest cash crop."[51] As the materials for the experiment can be easily obtained by anyone, and the process of spraying the plants is far from difficult, *Molecular Invasion* serves as a sort of instructional performance. Once the project was completed and the results were favorable, anyone who had observed the project could in fact replicate it outside of the gallery space. This is the result CAE hopes for, that other amateurs will follow their example and undertake their own fuzzy biological sabotage. Although the audiences of *Molecular Invasion* did not participate in scientific experimentation, the project provides them with the knowledge necessary to participate in CAE's resistance.

The other two GMO projects, *GenTerra* and *Free Range Grain,* demonstrate the participation of audiences in public experimentation; as such, it is in these projects that CAE most successfully puts their theory into practice. These projects also represent the height of audience agency in CAE's biotech actions. Robert Mitchell's concept of vitalist bioart tactics again provides useful insight into this discussion of audience agency. In order to truly explore the problematic of biotechnology, vitalist bioart "seeks to use spectators themselves as means, or media, for generating new biological possibilities."[52] It is "primarily exploratory and experimental."[53] The performances *GenTerra* and *Free Range Grain* are not only exploratory and experimental, but also essentially *experiential*.

[50] critical-art.net./Biotech.html.
[51] da Costa, "Reaching the Limit," 374.
[52] Mitchell, *Bioart and the Vitality of Media,* 28.
[53] Ibid., 32.

The audience's role as participants in these two projects is the most active of any CAE biotech performances, and their agency is necessary for the accomplishment of CAE's objectives.

Mitchell claims that vitalist bioart encourages an oscillation between the experience of being-an-agent and being-a-medium, or "the embodied capacity-for-affecting and the capacity-for-being-affected."[54] He uses the Transgenic Bacteria Release Machine as a lens through which he examines this oscillation. For Mitchell, the project prompts the "gallerygoer's" active engagement (by pressing the button). In addition, "by positioning the air in the gallery space as something that might link the *E. coli* in the petri dish with the inside of [his] body, *Transgenic Bacteria Release Machine* emphasizes a sense of being *within* a more general medium that connects the biology of my body with other forms of life."[55] It is important to point out that Mitchell does not include the Transgenic Bacteria Release Machine as a larger part of the *GenTerra* performance, but as a separate project by da Costa and CAE. His analysis lacks the context of the other components of the event: the presence of GenTerra scientists and computer terminals with the company's website. However, each CAE project is ultimately dominated by either the experience of being-a-medium (as in *Flesh Machine,* where participants are shown to be raw material for the reprotech profit-making apparatus) or being-an-agent (as in *GenTerra,* where participants create their own strain of recombinant bacteria).

CAE's three GMO projects also saw a dramatic shift in the deployment of digital performance techniques. In *GenTerra,* CAE continued their practice of performing as a

[54] Mitchell, *Bioart and the Vitality of Media*, 77.
[55] Ibid., 71-72.

satirical corporation, one seeking "Transgenic Solutions for a Greener World."[56] The project website shares many similarities with the BioCom website used in *Flesh Machine*, offering a mission statement and a page for frequently asked questions. GenTerra follows the model of BioCom, which is designed to mimic actual reprotech companies in both form and content. But GenTerra is not a clear satirical reflection of the pancapitalist corporations that CAE is against, like BioCom. Instead it represents a fictitious ideal biotech company. GenTerra endeavors to reduce fear about transgenic organisms, promote thorough risk assessment, and create consumer products that protect both the consumer and the environment.

On one hand, GenTerra's rhetoric could be interpreted as an alternate dystopian vision of the biotech future, in which the corporation is a sort of compassionate dictatorship. As in the society of Aldous Huxley's *Brave New World* (1931), an allegedly benevolent power exploits scientific knowledge to pacify the population. In this way, the GenTerra construct could be seen as another performative counterfeit, *détourning* existing elements of biotech jargon to uncover capitalist impulses within the industry.

However, the fictitious GenTerra is also a step toward CAE's self-identification in *Molecular Invasion* and *Free Range Grain.* GenTerra functions as a middle ground, a step between BioCom and Critical Art Ensemble itself. Many of the beliefs espoused by GenTerra on its website echo those found in CAE manifestos. GenTerra's mission statement, for instance, resembles CAE's own thoughts on transgenic issues:

> GenTerra believes that the future of transgenics should be open to *informed public debate*, and acts as an information resource to anyone who wants to learn more

[56] http://critical-art.net/Original/genterra/genWeb.html.

> about transgenics. We present both the good and the bad news regarding transgenics and biological environmental resource management, so that *people can make up their own minds* about these extremely complex issues. GenTerra believes in an open-door policy of business and communications. Only through *open dialogue* can we make our corporate philosophies known, and ensure that we always work within the boundaries of what is ethically, socially, and environmentally responsible. The world belongs to us all—take control.[57]

By performing as BioCom, CAE sought to recontextualize the claims of biotech companies, exposing their true intentions and opening up opportunities for participants to engage in critical discussion. GenTerra, on the other hand, represents a possible future for biotech, in which the relationship between corporations and the public is not fraught with secrecy but one of exchange of ideas. GenTerra is what CAE hopes biotech companies to be: ethical, environmentally conscious, engaging in open dialogue, and not prioritizing the profit margin.

As their performances involved increased public experimentation and audience agency, CAE departed from their practice of creating performative counterfeits like BioCom, and began performing as themselves. The final two biotech projects, *Molecular Invasion* and *Free Range Grain*, were public experiments executed by CAE members. By performing as themselves, CAE foregrounds the citizen-science advocated in these performances: if a group of artists can design and conduct a scientific experiment, anyone can. This development is also reflected in the websites for each performance. The main page of the *Molecular Invasion* website features the name Critical Art Ensemble prominently, and offers links to further pages detailing CAE theoretical concepts, including contestational biology, public experimentation, and fuzzy biological sabotage

[57] "Mission Statement," http://critical-art.net/Original/genterra/genWeb.html, emphasis mine.

(see Figure 5). Unfortunately, this website is no longer active and only the main page remains visible.

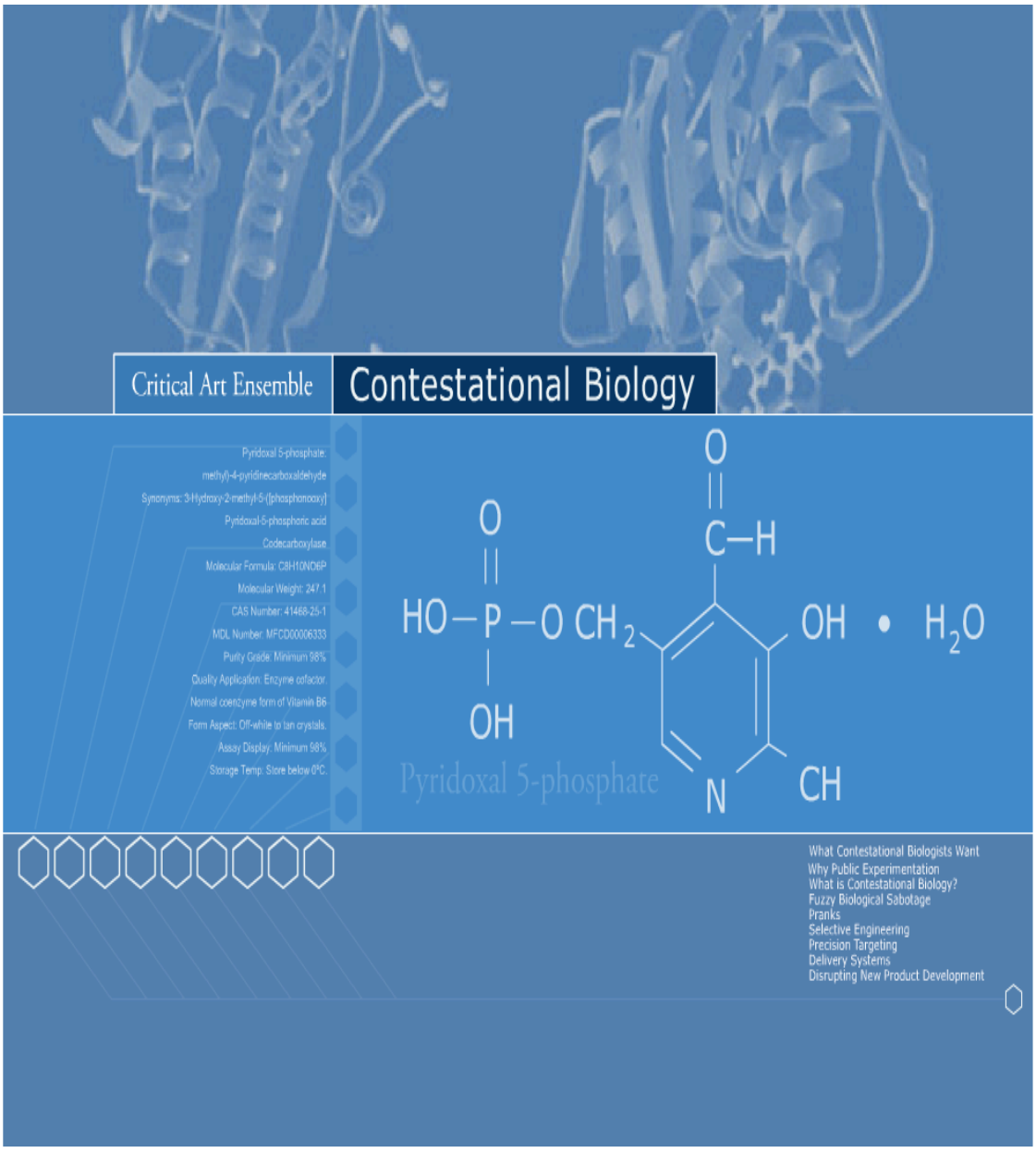

Figure 5. The main page of CAE's *Molecular Invasion* web site.

The website for *Free Range Grain* continues this trend; CAE explicitly claims ownership of the project directly below the title (see Figure 6). This website offers four separate sections: a project statement, a lab tour which lists images and descriptions of all equipment used in the project, a step-by-step guide to the experimental process, and a frequently-asked-questions page about GMO regulations in the European Union. Given all the information on the *Free Range Grain* website, anyone with access to the basic scientific equipment listed could replicate CAE's performative action and continue to test their foodstuffs for the presence of GMOs (see Figure 7). Although the members of CAE and their collaborators might not be amateurs in the same way that their audience is, both *Molecular Invasion* and especially *Free Range Grain* demonstrate that ordinary citizens have the capability to gain scientific knowledge and to disrupt the profit cycle of biotech corporations.

If the GMO projects are the most effective achievement of CAE's theoretical goals, they are also the most directly confrontational. CAE only obtained Monsanto seeds through the generosity of feed store employees who allowed them to take some out of the trash. Both obtaining the seeds and using them in the *Molecular Invasion* performance was a breach of Monsanto's licensing requirements. The corporation sent lawyers to the gallery exhibition to take photographs. While they did send several cease-and-desist letters to CAE, Monsanto took no legal action against the group.[58] Kurtz speculated that the location of the performance prevented Monsanto from taking further legal action:

[58] Weintraub, *To Life!,* 151.

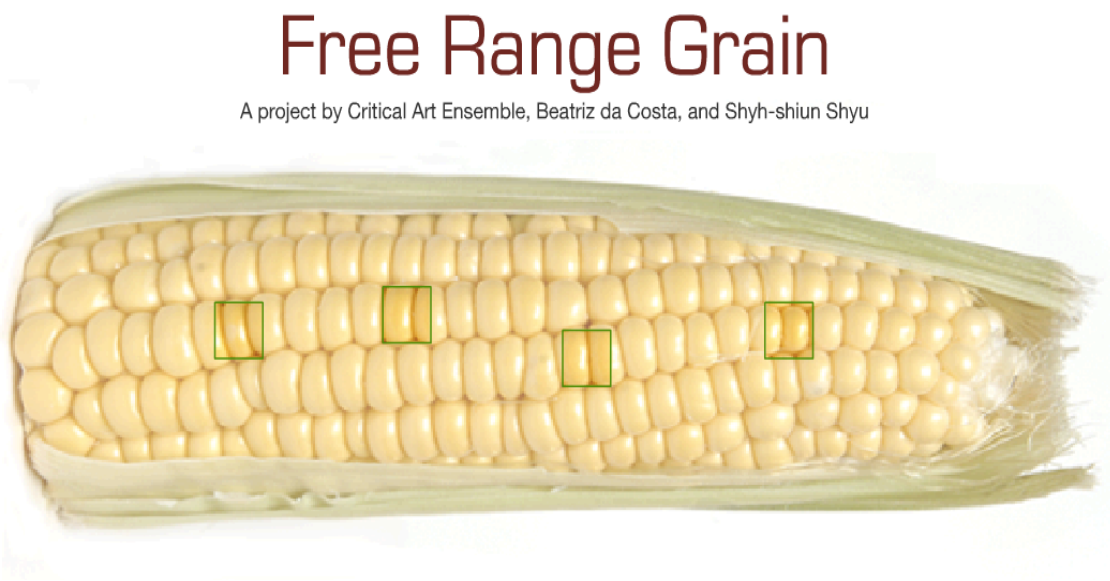

Figure 6. The home page of CAE's *Free Range Grain* website.

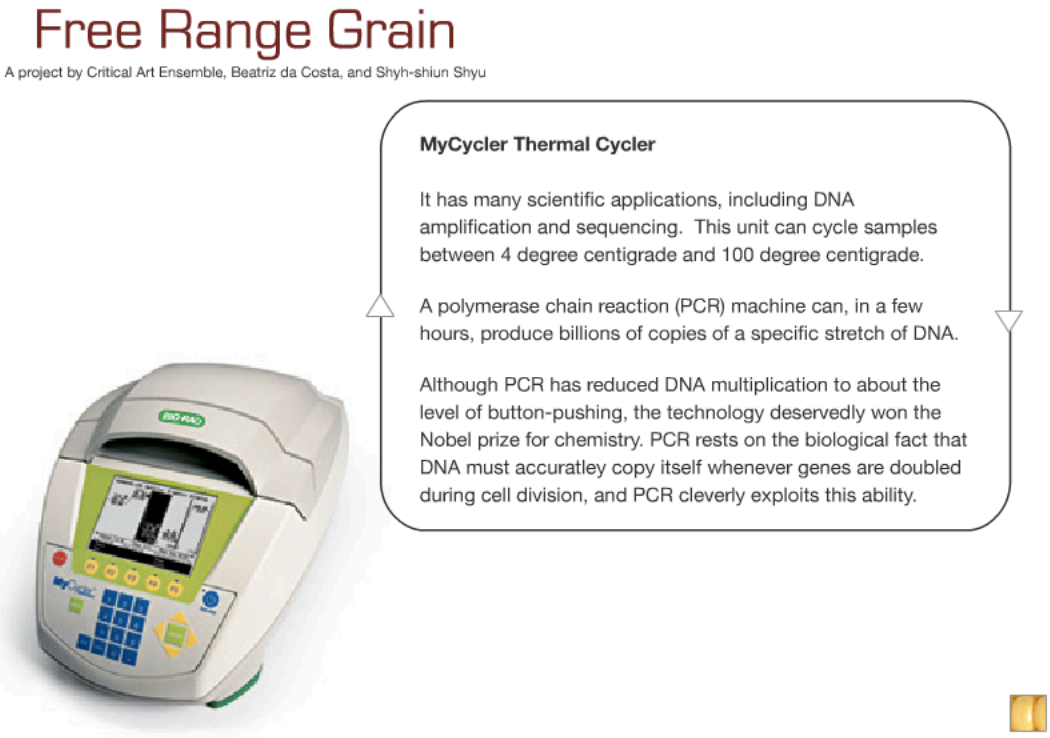

Figure 7. One of several webpages detailing equipment used in *Free Range Grain.*

> It was a false show, just a bluff. Were they going to sue us for license violation for using ten dollars' worth of seeds? Also, the museum that hosted the show would need to be sued. Monsanto's public relations image is not good. We knew they would want to avoid the nightmare publicity if they sued a venerable art institution that was part of the Smithsonian. That is one reason we launched the project at the Corcoran. It provided an umbrella of legitimacy. Just try to get us now! It was like having superman protecting you."[59]

While CAE remains staunchly against the tradition of privileging the artist, namely by creating and publishing as a collective, they are not afraid of taking advantage of the privileges that art institutions enjoy.

The potential legal repercussions and the general climate of fear surrounding biotech issues led CAE to speak out against more traditional anti-GMO protest actions, such as burning down testing sites. These types of resistance often result in accusations of terrorism. In the eyes of CAE, becoming associated with terrorism only creates negative public opinion and does nothing to disrupt profit flows or reduce public fear of biotechnology. But CAE does point out that it is illogical to equate their actions with terrorism at all:

> The association with terrorism is completely unwarranted, since it is not possible to terrorize plants, insects, and single-cell organisms. The problem with GMOs, however, is that they are more than organisms—they are private property. Since capital values property over all (humans included) one can only expect the strongest types of denunciation and response to its destruction.[60]

Despite CAE's vocal opposition to associations with terrorism, Monsanto was not the only organization to interfere with CAE's artistic operations.

In May 2004, CAE founding member Steve Kurtz found that his wife and fellow

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[59] Steve Kurtz, qtd in "Critical Art Ensemble: Contestational Biology," in *To Life! Eco Art in Pursuit of a Sustainable Planet*, ed. Linda Weintraub (Berkley: University of California Press, 2012), 151.
[60] Critical Art Ensemble, *Molecular Invasion*, 99.

CAE member, Hope, had died in her sleep, the result of congenital heart failure. Kurtz called the paramedics to his home. The law enforcement that responded to Kurtz's call saw the lab equipment present in the Kurtz home, all used for various CAE projects. The police then called the FBI, whose Special Task Force on Terrorism detained Kurtz the next day on suspicion of bioterrorism. FBI investigators occupied Kurtz's house for six days, seizing lab equipment, books, art supplies, and computers. CAE associates and collaborators were also served subpoenas to appear before a grand jury, which met in July. While the grand jury would not bring charges of bioterrorism, they eventually pursued charges of wire and mail fraud.

In preparation for another biotech project, Kurtz had exchanged bacteria via mail with Dr. Robert Farrell of the University of Pittsburgh. This practice was neither illegal nor unusual; research supply companies frequently send bacteria of this type to labs and scientists around the country. Although the legal proceedings continued for several years, ultimately Kurtz was declared not guilty.[61]

[61] For accounts of Kurtz's legal battle see Nicola Triscott, "Performative Science in an Age of Specialization: The Case of Critical Art Ensemble" in *Interfaces of Performance,* ed. Maria Chatzichristodoulou, Janis Jefferies, and Rachel Zerihan (Burlington, VT: Ashgate, 2009), 153-166; Gabriella Giannachi, "Exposing globalisation: Biopolitics in the work of Critical Art Ensemble," *Contemporary Theatre Review* 16, no. 1 (2006): 41-50; Robert Hirsch, "The Strange Case of Steve Kurtz: Critical Art Ensemble and the Price of Freedom," *Afterimage* 32, no. 6 (2005): 22-32; and http://www.caedefensefund.org.

Chapter 5
Conclusion: "Permanent Cultural Resistance"

> CAE acts like a genetic cross between James Bond and Bill Nye the Science Guy. CAE has repeatedly set up tactical art interventions into the 'mysteries' of biotechnology (à la Bond) in order to turn around and offer 'hands-on' work with that technology in a 'You, Too, Can Back-Up Your Paranoia with Fun Science Facts' (à la Nye).
>
> —Rebecca Schneider and Jon McKenzie[1]

Kurtz's arrest and the immediate seizure of the contents and structure of his home interrupted a planned performance of *Free Range Grain* at the Massachusetts Museum of Contemporary Art (Mass MoCA) as part of the 2004 exhibit *The Interventionists: Art in the Social Sphere.* Because the FBI had confiscated CAE's entire laboratory, including the equipment necessary for *Free Range Grain,* CAE "showed" the empty performance space as part of the exhibition. Instead of lab equipment, "there remained an empty refrigerator, several empty tables, a box of 'organic' cereal, and bags of 'organic' chips."[2] The space was marked by a small sign that summarized Kurtz's interactions with the FBI, and their refusal to release the equipment despite having decided it was neither dangerous nor illegal.[3]

The FBI seized equipment for several other CAE pieces as well. According to the CAE Defense Fund, an organization dedicated to financially supporting Kurtz's legal

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[1] Rebecca Schneider and Jon McKenzie, "Keep Your Eyes on the FRONT and Watch Your BACK," *TDR: The Drama Review* 48, no. 4 (2004): 8.
[2] Ibid.
[3] Ibid., 5.

battle and providing information about the case, the FBI confiscated the *E. coli* that was used in *GenTerra*, the Monsanto seeds used in *Molecular Invasion*, and material for a future project, *Marching Plague.*[4] CAE eventually performed *Marching Plague*, a recreation of a 1952 germ warfare experiment conducted by the British military, in 2005. The FBI seized benign bacteria designed for use in the project as well as the manuscript for CAE's next book, *Marching Plague: Germ Warfare and Global Public Health.*[5] Even after a grand jury dismissed the bioterrorism charges against Kurtz, the FBI retained all of these materials. The manuscript for the book had to be completely reconstructed before its publication in 2006.[6]

While the FBI's confiscation of CAE's equipment prohibited them from continuing to perform their biotech projects, the occupation of the Kurtz home provided the impetus and material for a new artwork. In 2008, CAE debuted their installation *Seized* at Hallwalls Contemporary Art Center in Buffalo, New York. The mixed media installation contained some documentation and ephemera from *GenTerra, Molecular Invasion, Free Range Grain,* and *Marching Plague.* Items that had been confiscated by the FBI were represented by "photographs depicting the negative spaces remaining following their seizure."[7] The majority of the materials on display were not things that had been seized, but things that had been left behind. The six-day occupation of the Kurtz home by the FBI, Homeland Security, the Joint Terrorism Task Force, the Department of Defense, the Buffalo Police and Fire Departments, and the State Marshall's office

[4] See http://critical-art.net/mp.html.
[5] http://www.caedefensefund.org/faq.html.
[6] Ibid.
[7] http://art.buffalo.edu/2008/06/02/seized-exhibit-presents-cae-art-confiscated-in-fbi-raid/.

resulted in an astounding amount of trash, including pizza boxes, hundreds of empty bottles, Hazmat suits, and yellow caution tape. Once the FBI left, CAE collected all of this refuse and displayed it as part of the installation.

Kurtz himself was detained for twenty-two hours the day following his wife's death. He was questioned and interrogated by the FBI and Joint Terrorism Task Force without being informed of his rights. Officials seized Hope's body for further testing until the investigation was completed, refusing to release her remains to the funeral home. About a week later, the New York Commissioner of Public Health declared that nothing in the Kurtz home was a threat to public safety, releasing Hope's body and allowing Kurtz to return to his home.[8] Despite the emotional suffering this investigation caused the Kurtz family, and the absence of any dangerous biological materials among CAE's equipment, the FBI continued to drag on the investigation and legal battle until 2009, when charges against Kurtz were finally dismissed.

Steve Kurtz's ordeal with the FBI had an immediate and lasting effect on analyses of CAE's work. Although other CAE members and collaborators were subpoenaed to appear before the grand jury, the case centered on Kurtz and Pittsburgh scientist Dr. Robert Ferrell. Because he was also struggling with a serious medical condition, Ferrell plead guilty to the wire and mail fraud charges while Kurtz continued to fight them, resulting in his increased presence in the media. This effectively separated him from his fellow CAE members: he was no longer semi-anonymous. Prior to the events of May 2004, most discussions of CAE's work did not draw attention to Kurtz over other CAE

[8] http://www.caedefensefund.org/overview.html#kurtz.

members. Photos of Kurtz in the *Cult of the New Eve* action, for example, only describe him as a CAE member. Pre-2004 interviews involved CAE as a collective entity, not as individuals. When Rebecca Schneider and Jon McKenzie interviewed CAE for the 2000 special issue of *The Drama Review,* the interview was published with this caveat:

> To produce this interview, Schneider met with CAE in New York City over the course of a weekend in June 1999, while a few days later McKenzie emailed them a series of questions. CAE responded to these queries, and McKenzie in turn sent a few follow-up questions. After the interview sessions were complete, Schneider, McKenzie, and CAE reviewed and synthesized the materials to produce this text.[9]

All of Schneider and McKenzie's questions are answered by CAE as a whole, which is typical of their interviews and publications prior to 2004.

The unfortunate events involving his wife's death and interactions with the FBI singled Kurtz out from his CAE colleagues. The subsequent media frenzy only further separated Kurtz from the collective, which also had implications for scholarly analyses of CAE's work. Interviews after 2004 often center on Kurtz alone, deemphasizing the importance of collectivism to CAE's work. The legal battle itself, and its possible consequences for other artists, has also overshadowed critical discussion of CAE's work. Rather than examine CAE's performance events, some scholars focus on a general idea of their work as a starting point for issues of censorship and government control.

After 2004, CAE's work shifted away from biotechnology to other issues, including government surveillance and bioterrorism. In addition to *Marching Plague,* CAE explored the use of germ warfare in *Target Deception* (2007), which was based on experiments conducted in the 1950s in the United States. The majority of their recent

[9] Rebecca Schneider and Jon McKenzie, "Critical Art Ensemble: Tactical Media Practitioners," *The Drama Review* 44, no. 4 (Winter 2000): 156.

work, however, investigated a variety of environmental issues while continuing to use tactical media strategies. For example, in 2011 CAE partnered with an Italian group, Parco Arte Vivente, to plant endangered flowers on public land and in urban spaces in an action called *New Alliances.* The most recent CAE action is *A Temporary Monument to North American Energy Security* (2014), which was performed at Toronto's annual Nuit Blanche arts festival. The action began with "a piece of corporate art extolling the benefits of unregulated extraction:" a sleek corporate advertisement for CanAmerican Energy. CAE simulated an oil spill by coloring a public fountain with brown food coloring and bringing in a Hazmat team to clean it.[10]

The perceived success of the biotech actions is part of the impetus for CAE's shift from bioart to ecoart. CAE felt that biotechnology issues simply no longer needed their attention. In a 2011 interview with artist Linda Weintraub, Kurtz explained:

> *Molecular Invasion* will be one of those touchstone pieces when it comes to bio hacking for political purposes. It was prophetic. No one listened to us at the time. Now…biotechnology in food production is big news. Local and federal governments are involved. When stuff gets mainstreamed, it doesn't need us. We are cultural researchers—we look into things that people aren't paying attention to. Now this cause is working on its own volition. We have made ourselves obsolete. We worked ourselves out of a job.[11]

Considering the success and wide reach of the documentary *Food, Inc.* (2008), or the recent public decision made by global restaurant chain Chipotle to remove all GMO products from their food,[12] it would seem Kurtz is right. CAE's model of tactical, participatory science-theatre functioning from the margins can promote critical dialogue

[10] http://critical-art.net/ecoArt.html. For a review of this action, see http://buffalo.com/2014/10/04/news/art/buffalo-artists-play-starring-role-at-annual-toronto-art-festival/.
[11] Steve Kurtz, qtd in "Critical Ensemble: Contestational Biology," in *To Life! Eco Art in Pursuit of a Sustainable Planet,* by Linda Weintraub (Berkeley: University of California Press, 2012), 154.
[12] https://chipotle.com/gmo.

about biotechnology issues. Once that dialogue occurs in the mainstream, CAE's temporary spaces, created through their performance projects, are no longer necessary.

Perhaps it was the potential for CAE's artwork to spark public discussion that prompted the FBI to continue its investigation of Kurtz after the confiscated biological elements were proved harmless. In 2004, Rebecca Schneider and Jon McKenzie, after visiting the "aborted exhibition" of *Free Range Grain* at Mass MOCA, speculated on the reasons behind the FBI's continued investigation of Kurtz:

> CAE's work has consistently suggested that patriotism is a set of blinders doled out in the public sphere, blinders that mask the way in which the public is asked to ignorantly consent while multinational corporate elite interests alter their world (in the interests of a very few) on a molecular level…Is CAE's general move away from *rhetoric* toward tactile *participation* pointedly what provoked the FBI to suspect terrorism? If they had simply 'put on a show' would their performance have been disappeared?[13]

Of course, the answers to Schneider and McKenzie's questions are impossible to determine. But the FBI's attitude toward CAE artistic practice could be interpreted as possible proof of its threat to capitalist interests.

Beginning with their first biotech performance in 1998, *Flesh Machine,* CAE developed performance tactics to uncover hidden rhetoric of capitalism within biotech, allowing audiences to engage in critical discussion. *Flesh Machine, Intelligent Sperm On-line, Society for Reproductive Anachronisms,* and *Cult of the New Eve* collectively explored the ways biotech is sold to the public. Supported by the websites for each entity, CAE masqueraded as powerful corporations and marginalized cults to expose the truth behind biotech rhetoric and demystify the reprotech industry. Actual scientific processes

[13] Rebecca Schneider and Jon McKenzie, "Keep Your EYES on the FRONT," 9.

and materials, while not directly performed by audiences, remained an integral part of each action. Primarily, however, the reprotech performances focused on four the objectives in CAE's Seven-Point Plan for cultural resistance: to demystify transgenic products and processes, to neutralize public fear, to promote critical thinking, and undermine and to attack Edenic utopian rhetoric.[14]

All four of CAE's reprotech performances aim to promote critical thinking about the use of new technologies by reproductive corporations, and implications that such technology might have. Through the use of DNA tests, *Flesh Machine* and *Intelligent Sperm On-line* prompt audiences to consider the value of their own genetic material in the context of the profit-seeking reprotech industry. *Cult of the New Eve* and *Society for Reproductive Anachronisms,* both individually and when considered as one unit, directly reveal the promissory rhetoric employed by biotech and simultaneously critique it. By reframing biotech jargon in the context of a cult, *Cult of the New Eve* exposes the absurdity of the promises made by scientists about the human genome. *Society for Reproductive Anachronisms*, on the other hand, undermines the industry's rhetoric by promoting the extreme opposite of it. Like all of CAE's biotech actions, the reprotech pieces also strive to reduce public fear and paranoia surrounding biotechnology in general simply by explaining them: "through the collective's activity, members hope to replace a general fear with critical tools and replace public impotence with tools for direct action."[15]

CAE's GMO projects continue the model of the reprotech actions, but include

[14] Critical Art Ensemble, *Molecular Invasion* (New York: Autonomedia, 2002), 59.
[15] Ibid., 140.

active scientific experimentation by participants. For this reason, the GMO projects successfully address each of the objectives outlined in the Seven-Point Plan, including those not fully addressed in the reprotech pieces: to open the halls of science, to dissolve cultural boundaries of specialization, and to build respect for amateurism.[16] By undertaking public experimentation in *GenTerra, Molecular Invasion,* and *Free Range Grain,* CAE removed scientific knowledge from its privileged and hallowed position in the laboratory and brought it into the art gallery. Participants could not only observe, for example, the creation of transgenic bacteria in *GenTerra*, but also complete the experiments themselves. Public experimentation open to any participant shows that the experiments and the science behind them can be accessible to anyone, and once they have the knowledge of scientific issues, audiences can effectively participate in public discussions on those issues.

While many of their specific performance tactics originate in the ideas and work of the avant-garde (*détournement,* situations, Happenings), CAE vehemently rejects the mythological status avant-garde artists have garnered in scholarship: "No longer can we believe that artists, revolutionaries, and visionaries are able to step outside of culture to catch a glimpse of the necessities of history as well as the future."[17] Instead, groups of individuals, or cells, must take a tactical approach, working from within apparatuses of power to resist them. Calling to mind the terrorist activities of our post-September 11th world, for CAE, cells are the most effective form of cultural resistance because they

[16] Critical Art Ensemble, *Molecular Invasion,* 59.
[17] Critical Art Ensemble, *Electronic Civil Disobedience & Other Unpopular Ideas* (New York: Autonomedia, 1998), 26.

allow

> …resistance to originate form may different points, instead of focusing on one (perhaps biased) point of attack. Within such a micro structure, individuals can reach a meaningful consensus based on trust in other individuals (real community) in the cell, rather than one based on trust in a bureaucratic process.[18]

Just as bacterial cells hack healthy cells, or a small group of computer users hack information systems, a cell of tactical media artists can "hack" the processes and ideologies of biotech. However, these groups will never be able to completely destroy or overcome capitalist structures:

> We only believe in temporary solutions, temporary improvement. There is only permanent cultural resistance; there is no endgame. Authoritarian culture won the day on the first day. CAE knows of no way that it can be removed—it is too deeply entrenched…But there can be spaces and processes within certain moments that can successfully stop the flow of capital, lift the repression, and in so doing, actually allow for the emergence of pleasure and happiness.[19]

But through participatory, embodied practice, CAE demonstrates that it is possible to create interstices in which critical dialogue can occur. Other artists, often operating in a collective structure themselves, have used tactical media to explore similar issues. As one of the first examples of these techniques, an understanding of CAE's performance strategies can also provide insight into the work of groups like Futurefarmers, the Tissue Culture and Art Project, and SymbioticA.[20] Perhaps the numerous innovations in biotechnology in the years since CAE's final biotech action demonstrate the necessity public discussion, sparked by their work as well as the ongoing exploration of these topics by other artists.

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[18] Critical Art Ensemble, *Electronic Civil Disobedience*, 23.
[19] Critical Art Ensemble, qtd in "Critical Art Ensemble: Tactical Media Practitioners," by Jon McKenzie and Rebecca Schneider, *TDR: The Drama Review* 44, no. 4 (2000): 139.
[20] http://www.futurefarmers.com; http://www.tca.uwa.edu.au; http://www.symbiotica.uwa.edu.au.

Most recently, scientists at Massachusetts General Hospital successfully grew a functioning rat forearm from living cells. This "biolimb" could be the first step to growing new limbs for amputees from a few cells. One of the scientists working on the project described the biolimb as "science fiction coming to life."[21] What implications this development will have for humans will not be determined for years. But direct experience with transgenic processes, like CAE offers, could be a useful tool in deciding exactly how biotech should be employed.

[21] Andy Coghlan, "Growth of the world's first biolimb," *New Scientist,* June 6, 2015, *LexisNexis Academic.*

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