

## Modeling and Implementing Nonspecialized Cross-Disciplinary Production

Critical Art Ensemble and Beatriz da Costa<sup>1</sup>

Considering the subject of artist as researcher can give one feelings of temporal disorientation. On the one hand, it seems impossible that research was not always a part of the artistic process and that a method that has always been used is only being rediscovered and revitalized. After all, wasn't one of the key modern models of the artist born from the Renaissance hybrid subject fueled by the energy of interdisciplinary invention? On the other hand, research as an artistic practice, or as a significant component of it, has such an aura of "newness." Artists appear to be scouting and squatting in what for them are uncharted territories of knowledge specialization and methodological difference that were either once off limits or simply undesirable. Either way, the research component of artistic practice has ebbed and flowed over the decades, so maybe the questions are why is this model being reproduced and reinvented, and how is this artist-subject being constructed?

Even after the impact of postmodernism, artists are still pressured by the expectations arising from the residues of modernist paradigms concerning the role(s) and sphere(s) of action for artists. Market demands and popular prejudice, at times, still require the production of expressive work (a monologic, unidirectional process moving from internal idea, feeling, or intuition to external expression), while dialogic content-driven responses to the material world are met with skepticism (as to what such processes have to do with art) or disappointment. In spite of these residual pressures, socially responsive work that functions outside of traditional specialization(s) has still managed to assert itself. This group of cultural producers prefers creating radical situations, symbolic provocations, subversive interventions, etc., in an effort to begin and/or further discourse and action around topics and occurrences that they believe must be engaged. However, for layered and complex work to occur that interrogates issues within their political and economic context, artists must conduct research outside their "home" disciplines. This includes research specific to the content of a particular project, but also research directed toward an understanding of the environment in which the project will be realized. Under these conditions, preparatory social-scientific research becomes mandatory. Artists have to investigate legal situations, policy-making procedures, and social and demographic constellations as well as historical tendencies and latencies. Effective communication

cannot happen without this information, and even worse, the situation engaged could be damaged in an undesirable way without proper preparation. Whether it is an institution, a neighborhood, or a macro-constellation, understanding the historical and social context in which an action occurs is as essential as the research necessary to create this understanding.

The authors have invested a considerable amount of labor in this regard in relation to biotechnology, but also as tactical media practitioners (tmp). Tactical media comprises one of the major thrusts in our general practice. Based on the ideas and observations of de Certeau, our tactical media efforts attempt to open the bunkers (commodity dumps, transportation arteries, monuments, governmental agencies, etc.) that dot the cultural landscape via direct, immediate actions that address issues specific to given situations in locations where strategic action is not a possibility. The tmp works in locations that are fortified and policed in a manner that allows the resister no possibility for a “home” territory from which to launch long-term actions. Instead the tmp searches for opportunities that can be quickly seized, used, and discarded so that they either fail to call the attention of authority due to social camouflage or they occur too quickly for authority to respond. In order to accomplish these tasks, the tmp must have a diverse set of tools at he/r disposal, and a broad understanding of the general ecology of the situation. Acquiring these necessities requires considerable background research and/or localized dialogue and participation. In conjunction with research, collaboration and skill and knowledge sharing are fundamental to the practice.

This set of necessities leads to the appearance of an artist-subject explicitly displaying a multiplicity of integrated becomings in relation to knowledge and methodology. As with most interdisciplinary endeavors, the question of legitimacy becomes an urgent concern. Unfortunately, most cultural producers are short on the power to legitimate activities outside traditional specializations. (Why trust the kooky inhabitants of Bohemia with their zany dreams, visions, and musings?) In order to demonstrate that a given cultural process is grounded in the real conditions of the world, systematic research becomes essential to it. The model of the bohemian artist as the keeper of the unchained imagination is a representation that socially engaged artists need considerable distance from; instead, the tendency of this particular group is to identify and affiliate with the intelligentsia from any discipline that has a part to play in the investigation of the “real.”<sup>2</sup>

For this association to be meaningful, producers must be able to speak the language of a given discipline and perform and conform to its methodological conventions. Some artists are beginning to answer these demands, and in so doing are beginning to construct a platform of legitimacy from which they may work and speak with a relative degree of authority on subjects outside of their traditional domain.

Another compelling variable in regard to this variety of research practices is the relationship to the market structure. While this may be a more unpleasant one, it is nonetheless one that has an impact. We cannot escape the cultural market's need for the new. Nothing is more deadly to a cultural practice than the engendering of a feeling of seeming overly familiar. Recombinatory practices can feed the market in perpetuity, but this is not the only source of the new available. The market will exploit all options available (here the market is actually of some positive use), encouraging artists (sometimes cynically, sometimes not) to raid other disciplines in order to provide "new" resources, processes, materials, and concepts. Among the loot brought back from these incursions are research methods.

The authors have indeed felt all of these pressures as we have attempted to explore the intersections and collision points between various disciplines. While from our own perspective we have had greater concern for hybrid investigations, we are unable to completely dismiss market forces. Our relationship to production and consumption is always ambivalent, but the goals of refusing specialization and producing knowledge/experience from the position of disciplinary hybridity invites us to continue the exploration in spite of its less desirable relations.

Since one of our primary interests over the past seven years has been following developments in biotech and its representation, we have been forced to learn more about the biological sciences than we ever expected. At the same time, we have yet to even approach a conventional notion of expertise in these areas. Not that that was our goal; however, this lack leaves us now in the unenviable position of finding ourselves in the realm of the amateur. A healthy portion of our research now is to find out what can and cannot legitimately be done from this position. After all, the word "amateur" is very rarely used in a positive sense. It is a disciplinary term to discourage hybridity and maintain profitable and alienating separations. We are the jacks-of-all-trades and the masters of none, trying to discover what power can be

recuperated for this second-class citizen. This exploration constitutes much of the social research that we conduct.

One incident that brought us to understand that any motivated literate person can productively participate in areas reserved for experts occurred while visiting one of the Human Genome Centers. As to be expected, it was a sea of lab benches and banks of PCRs. We stopped a young man working at one of the benches and inquired about the function of what appeared to us to be a mysterious piece of equipment. He said he didn't know because he was a political science major. It dawned on us that if the workers on the flagship project of molecular biology are political science majors (amateurs), surely a lot could be done in this area without extensive training. This belief, in turn, inspired a series of projects well outside our usual areas of exploration.

*GenTerra* was the first step in a long process toward developing a notion of contestational biology that could be used by nonscientists.<sup>3</sup> In *GenTerra*, we were interested in people's responses to contact with transgenic creatures (in this case, colonies of bacteria containing a random human genome library). While these creatures were harmless and inert in any biological sense, they tended to make people quite nervous and even afraid. Our other interest was to see whether we could dispel this nonrational fear.<sup>4</sup> To accomplish this task, we created a situation in which we had personalized dialogues with individuals on biological risk assessment, before they were offered a chance to interact with transgenic wetware. Once armed with basic information on transgenic production and the risks that accompany it, people in most cases were able to see the difference between pollutants for profit and transgenic products produced in the public interest. Participants would generally go on to release some transgenic bacteria and to streak out dishes of transgenic bacteria for their own use. What this indicated to us was that people were willing to get involved in these debates on a more sophisticated level than merely saying "ban it" or "use it," and that they would feel able to use the materials found in scientific laboratories.

With *Molecular Invasion*, we took another step forward by doing an actual scientific experiment in public. Our belief was that scientific practices could be appropriated by the public (amateurs) and used for resistant purposes. In reaction to the foolish tactics of the Earth Liberation Front (burning fields and fire-bombing labs), and as a means to show precisely how contestational biology could become another important tool in the activist tool kit, we set ourselves the assignment of

creating a biochemical intervention into RoundUp Ready crops (canola, corn, and soy).<sup>5</sup> These are Monsanto's most profitable seeds and spin-off products. We wanted to find a way to specifically target these crops. Our premise was that any trait of adaptability could be made a trait of susceptibility. Having given ourselves this task, we quickly found the limits of amateur research. We had no idea how to begin. We did not have the biochemical knowledge to know where a likely candidate might be found, and we couldn't just test randomly. We needed expertise, but where could we find it? We appropriated it from Monsanto. When Monsanto patented its crops, it had to place all its lab research in the public domain. While the hunt through the archives was difficult, we did find a couple of likely candidates. The best was Pyridoxal 5 Phosphate (P5P, a compound often found in vitamins), harmless to humans and the environment, but potentially problematic for RoundUp Ready products. We acquired some RoundUp Ready seeds, grew the plants, and tested the chemical. At present, we don't have clear results about the efficiency of this compound—particularly because we did not get to use it on fully mature plants. More experiments are necessary before we can proceed with any certainty. However, Monsanto did send their lawyers to the exhibition to intimidate us, but we only took that action as indicating that we are on the right track.

There are a couple of important lessons here for amateur research. Everyone has heard the old trope that [science] is 10% inspiration and 90% perspiration. In biology this is really true. We should remember that the 90% (grunt lab work) can be done by a political science major, and that that 90% includes a lot of optimized procedures that, once recontextualized, can be used in unexpected and subversive ways. The 10% is the problem. On the highest level, amateurs can certainly get a piece of the inspiration, but in many ways they cannot. The good news is that whatever question one asks from an amateur position, the answer is probably already out there. It's not that the amateur's question has already been asked (although it's likely), but that the answer was created for a different question. In other words, P5P was not tested on RoundUp enzymes as a means for cultural and political resistance.

This is not to say we are promoting amateurism for amateurism's sake. The amateur's relationship to expertise is a necessary one in many ways. Fundamentalism is never good for any enterprise. For the sake of efficiency, to limit mistakes, and to reinforce good ideas, we have to be in dialogue with experts. In all our projects we work with expert consultants (and in some cases, collaborators) who

function in a green light/red light capacity, provide input, and train us to do the 90%. Any literate person can learn it fast, but someone has to teach.

We are also not promoting a dissolution of the distinction between art and science. Specialists are necessary and desirable, but only under certain conditions. Marx highlighted the problematic of the modern division of labor as an engine of alienation implicit in specialized separation. The more focused specialization becomes, the more communications break down between various sectors in a manner that only empowers administrative connections. In turn, these singular lines of information flow solidify as boundaries that keep individuals captives within their own disciplines. Our goal is to resist and hopefully break these alienating and punitive boundaries, and in so doing to regenerate lines of information flows that invite open communication and information exchange. We do not want to corrupt the specialized task, but to liberate it—to allow it to exist in a networked smooth space that fosters the repoliticization of these research initiatives.

With our latest project that is currently under construction, *Free Range Grains*, we are taking the final step in amateur research and opening a public lab. With this project, we are not doing scientific research, but market research within a European context. Recently, the EU passed fairly strict laws regarding the importing and labeling of genetically modified (GM) foods in an effort to protect and inform a concerned public about the origin and manufacture of the food on the market. Given these restrictions and the general aura of caution in regard to the consumption of genetically modified foods, Europe will need to maintain strong borders to halt the freedom of movement given to food commodities. With the relatively heavy importation of grains and processed grains from the US, it appears to us that it will be very difficult to filter out GM foods. Not only are the protocols for product testing on a systematic basis different in intensity in every country, but one must also be suspicious about American corporation's resolve about volunteering information that could be damaging to its profits. In the US, all the companies agree that labeling GM foods is neither helpful to the public nor good for business.

What we see in this particular example of GM food distribution is a means to visualize the material reality of theories of global trade. On the one hand, there is the global economy of smooth space, where the commodity moves relatively freely. On the other hand, there is a belief that markets can be locked down by using traditional forms of blockage typically employed to preserve or strengthen nation-state economies. The EU is often perceived both as open (a major architect in the

development of open markets and free trade as well as producers of global "consensus") and yet locked down ("Fortress Europe"). Our belief, however impressionistic, is that the EU tends toward the global (smooth space). Since processed corn and soy products are being imported into Europe in large quantities, we are quite skeptical that the EU will be able to maintain its borders against such "contaminated" commodities. To test grain product as an indicator of relationship of the commodity to national borders is relatively easy. Anyone with the desire to do so could learn to test grains. The protocols have also been optimized. For example, DNA extraction is fairly simple. Kits take the user through a step-by-step process. They are very user-friendly, and are actually designed for amateur use. The hard part is getting the equipment, which is still rather expensive, although the costs are coming down. The door to these fields of investigation are open to nonspecialists, even if only a crack. We only need the courage and/or the foolishness to move forward.

For the socially and politically engaged artist, research is simply a necessity, and always has been (at least in relation to the social sciences). What perhaps is new is that movement through the labyrinth of knowledge vectors is easier and wider than ever. In conjunction, access to equipment is getting somewhat easier, and could get even better. Amateur production in research-heavy areas thus becomes meaningful again by contributing to the reestablishment of nonadministrative, politicized communication between disciplines. Under these conditions, we can find answers in science (or in any other area of knowledge) to political questions. No longer reduced to the level of hobbyists and tinkerers, we believe that the hybridized nonspecialist will function as a viable option in cultural practice for a long time to come.

## Notes

1. Beatriz da Costa is a machine artist and tactical media practitioner. Her work crosses the boundaries between art and engineering, aiming to implement a true notion of interdisciplinarity. She has worked in collaboration with Critical Art Ensemble since summer 2000, and has taken a vital part in all the research and projects described in this paper. For more information please see <http://www.beatrizdacosta.net>.

2. We are not arguing that bohemians cannot be good cultural citizens or be politically astute, nor that such performativities or products are without social value. We only mean that this model of the artist is rewarded with public tolerance for less than normalized behavior, but pays for this privilege by being denied participation in production of the real.

3. Please see *The Molecular Invasion*, (Autonomea, 2002) for a complete explanation of contestational biology. The book may be downloaded free of charge at <critical-art.net>. Contestational biology is a model for developing additional tools used for resistant cultural and political purposes. Much as CAE has contributed to the idea of using ICT (electronic civil disobedience) and robotics (in collaboration with the Institute for Applied Autonomy) as an expanded means to resist state and global capital in conjunction with conventional activism, we believe the same can be done in the field of biology/biotechnology. This knowledge system does not have to function solely in the service of the state and global capital. It can be appropriated and the knowledge turned against those who profit from it and abuse others with it. Thus far, little work has been done to explore what scientific ideas and methods could be used for subversive purpose, nor has much work been done on how the means of production can be exported out of various cultural bunkers and made useful in both general and specific cultural and political contexts. A primary aspect of the authors' research has been to invent and discover the ways and means that nonspecialists can use biotechnology in this new capacity, and to convince political and cultural activists that this research is worth doing, and that the results will benefit public interests.

4. Please see Chapter 1 of *The Molecular Invasion* for a complete explanation of the relationship between fear and transgenics.

5. Please see Chapter 5 of *The Molecular Invasion* for a complete explanation of this experiment.