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Source: *Grey Room*, No. 28 (Summer, 2007), pp. 86-107
Published by: The MIT Press
Stable URL: http://www.jstor.org/stable/20442767
Accessed: 02-09-2016 00:21 UTC

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Manhunt.
Rockstar Games, 2003.
Game still.

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StarCraft, or, Balance

ALEXANDER R. GALLOWAY

Is not sadism the essential perversion of cybernetic systems, in that they have as their end the emergent expression of action events (what in other contexts might be called desire) via a complex of machinery whose prime directive is the control and manipulation of objects? The sadism of a game like *Manhunt* is, in this sense, merely a hypertrophy of software itself which solicits us to pursue, target, isolate, reconfigure, process, execute, and generally inflict pain on objects in the world as if they were endless masses of data.[1] What makes the computer different from something like the cinema—which essentially establishes object relationships through a variety of forms of masochism—is the active, expressive, exploitative, ergodic, vigorous, driven materialization of measurable presence and measurable activity.[2] This hubbub of activity is the cybernetic system.

Cybernetics comes from the Greek *kubernétes* (κυβερνήτης), a root also shared by the word *governmentality.* Both concern the "steering" or controlling of individual agents in association, be they animal or machine. This essay is about that interaction, that antagonism, and how one may come to know it. I suggest that an examination of cybernetic systems and virtual worlds is a useful way to understand material life today, first because crucial parts of the planet (battlefields, boardrooms) are saturated by such systems, but also because the formal and semiotic structure of these systems indicates a number of things about how interpretive work should be done and thus about the state of knowledge itself.

Cybernetic systems are not however smooth or consistent throughout, even if they subsume disparate objects (workstations, sensors, weapons, human beings, robots) in relations of universality and interconnectivity. In fact I would like to indicate in what follows that such systems not only generate and thrive on internal difference and asymmetry but they also establish a logic in which antagonism and struggle are held up as utterly crucial only to be dismissed later as entirely *inessential.*

But before addressing this claim in detail, I will start by pointing to two examples in the contemporary arena that beckon toward two indicative and altogether different types of cybernetic organization and control: the "optical strike" versus the "spatial system." These should be understood as *figurative interfaces* into what Gilles Deleuze called the "control society"; that is, a broad geopolitical understanding of power concurrent with the informatic systems of the late twentieth century.[3]

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Top: ***Counter-Strike.*** **Valve Software, 2000. Game still.**

Bottom: ***World of Warcraft.*** **Blizzard Entertainment, 2004. Game still.**

The first-person shooter game, to start, is one such example, all the more delightful for the number of "rules of media" it breaks (the foregrounding of a bona fide subjective perspective typically sidelined in mass media, the ostensible rejection of "remediation" or what in McLuhan is the "layer" law of media, the seeming inability—or lack of motivation—to cleanse the gamic experience of all nondiegetic, which is to say purely algorithmic, modes of representation).[4] For this we shall select *Counter-Strike* as our exemplar.[5] The second example is driven less by the characteristics of a species and more by the particularities of a single part of a single game: the player-versus-player mode of *World of Warcraft*.[6]

At this moment any sane reader will doubtless be asking, Who cares about video games? A sensible concern. Yet while the U.S. military and other global powerbrokers continue to adopt gaming environments and virtual worlds as training tools and even weapon systems, one must remain sober and focused on this very question.

At first glance what seems to make *Counter-Strike* and *World of Warcraft* so interesting is the difference in genre, the two entirely different styles of modeling system-based antagonism in play space. But one can go further and home in on the process and significance of generic *targeting,* targeting as the establishment of a relationship between predator and prey, between the cursor and the object of selection, between, as it were, subject and object. Samuel Weber's recent treatment of the concept is inspiring.[7] Yet the notion of targeting is a curious one and takes on a number of entirely unexpected characteristics inside the cybernetic framework. What characterizes the quality of targeting in these two simulated systems? If they have anything to tell us about how power functions in the world today, then the answer to this question is of utmost importance.

Blundering forward in a rather crude fashion: targeting in *Counter-Strike* is essentially optical, whereas targeting in *World of Warcraft* is essentially spatial. But what does this mean? In *Counter-Strike* the methods by which objects are selected and relationships are established between subjects and predicates flows from the simulation of linear "rays" that are extended through mathematical matrices in such a way not dissimilar to the projection

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of a ray of light through space (or, to be more precise, not dissimilar to the discredited, pseudo-scientific notion that, in the faculty of human sight, rays extend from the eyes outward onto objects); the "bouncing" of these rays off of discrete volumes (via ray-surface intersection algorithms) comes to represent a successful "hit."[8] While in *World of Warcraft* relationships are established via the simulation of aggregate ecosystems of agents arranged in spatial models such that lists of eligible targets and ineligible targets, ranked according to proximity, are automatically calculated and recalculated using simple vector transformations and sorting algorithms, the assumption being that any number of agents within the ecosystem may have multiple, changing relationships with other agents throughout the course of a single encounter. Certainly the concept of a "line-of-sight" exists in *World of Warcraft,* but it is diminished to a purely mechanical parsing of spatial angles and blockages, and is for the most part geometrically adrift from actual player sight lines. Whereas in *Counter-Strike* the concept of "line-of-sight" is played down as a distinct concept only because it is synonymous with the essence of the game, that being the accurate selection and execution of bullet trajectories (or, as Raph Koster humorously put it, first-person shooters essentially teach people how to position a mouse cursor on a screen, correctly).[9] The targeting technique in *Counter-Strike* is what graphics programmers call "picking," a method of ray tracing in which a single ray is projected from the foreground, typically represented by a crosshair or other surrogate cursor, into the three-dimensional scene. The first object it hits is returned. In short, ballistics and optics merge in *Counter-Strike.* It is a line-of-sight environment, and nothing more. This is why the first-person perspective is entirely normal in this type of simulation. It is also why melee combat is generally upstaged by projectile-weapon combat. In *Counter-Strike* ray tracing is weaponized. Orchestrating the correct ray at the correct time is the art of game play. In principle these encounters are strictly symmetrical: one target, one bullet.

But in the spatial-systems approach of *World of Warcraft* volume, range, proximity, linkages, and arrangements in space are paramount.[10] Here it is no longer the ray trace that is the weapon, but the *hyperlink* between protagonist and antagonist. It is no longer a question of hitting the target, but of deciding who or what one is targeting. The "act" in *World of Warcraft* is the short-term creation of an arc relationship between player character and target. It is enacted through the time-based selection of command sequences that span the interval linkage to the target. This is why the third-person perspective is the default and why melee combat is entirely normal. As with *Counter-Strike,* relationshipping is weaponized, but it is no longer strictly the optical challenge of matching up the two ends of a vector ray in the proper fashion

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given a rifle sight here and a visible landscape out there. Instead, relationshipping in *World of Warcraft* is reconstituted as a weapon of machine-calculated intervals and proximities moving and changing fluidly through a system of alternatives. The hyperlink is the weapon, not the sight line. If the kill in *Counter-Strike* is a bilateral strike, in *World of Warcraft* it is a multilateral one. If in *Counter-Strike* the hyperbolic case is the sniper rifle (which fuses optics and ballistics in a particularly neat and tidy fashion), the hyperbolic case in *World of Warcraft* is the area-of-effect (AoE) phenomenon (single spells or weapons that effect groups of targets existing in a specific volumetric space). Proximity itself becomes dangerous. Certainly AoE phenomena exist in *Counter-Strike* (grenades and the like), but they play a supporting role at best. Similarly, the optical approach of *Counter-Strike* tends to minimize all class functionality in favor of the singular metric of the kill, whereas the systems approach of *World of Warcraft* promotes class-based game design, leading to the complex art of *balance*. If *Counter-Strike* is in principle a symmetrical encounter, *World of Warcraft* is, by following the benefits of the network model, able to accommodate strictly symmetrical encounters (e.g., duels between two players) and entirely asymmetrical ones (e.g., the so-called Zerg). As Eugene Thacker and I have suggested before in these pages, this type of ecumenicalism of structure is entirely consistent with systematicity itself.[11] So if *Counter-Strike* is a simulation of optics, or the *optical* modality of thinking and identifying the objects of thought, then *World of Warcraft* is a simulation of the informatic space, or the *networked* modality of ecological or systemic expression.

To connect back to Samuel Weber, there exists what might be called "trivial targeting," targeting that can be achieved purely algorithmically via auto-selection with a single keystroke. (The trivialness is what is so intriguing, and potentially unprecedented.) Once the target has been acquired trivially, the subsequent engagement remains exceedingly nontrivial and highly agonistic. Conversely, in *Counter-Strike* targeting could not be less trivial—it is essentially the sole challenge of the game—because targeting becomes entirely coextensive with the base, ergodic activities of play, and the aftermath becomes a perfunctory affair of squeezing the trigger (a mouse click). One must always inquire: At what point in any given cybernetic system does "trivial" mechanization intervene, and at what point does agent-based play intervene? Further, one must ask the Foucauldian question: What conditions must be in place for mechanization versus agent-based play to be established as such?

In sum, with *Counter-Strike* selection is the universe, and execution is reduced to mechanized nothingness, but in *World of Warcraft* selection is nothingness and execution is the universe.

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Which is more politically dubious, the automation of selection or the automation of execution? Which is worse, an electric sensor or an electric chair? Does not selection itself have its own brand of violence—not *how* execution should happen but to *whom* it happens? If *Counter-Strike* is fascism, *World of Warcraft* is neoliberalism: the one pegs everything on force as an uncontaminated aesthetic act, optical or otherwise; the other thrusts the constituents of the system into a flux of organic struggle. If, as Benjamin wrote, fascism is an aestheticization of politics (and therefore not, following his suggestion, a politicization of the aesthetic), is not neoliberalism that new global system that distributes control in such fine granularity so that all must struggle against all?[12] It is not unreasonable to suggest that we have witnessed a general transformation from the one to the other in all spheres of social and material life: from the modern model of power in the "fascistic" visual episteme to the contemporary model of control in "neoliberal" information systems.

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These introductory remarks are meant to highlight the sorts of challenges that arise when one begins to simulate relationships of struggle or antagonism using computerized models. By "challenges" I do not mean challenges of the scientific variety, the quite formidable challenges of modeling complex systems using hardware and software, but instead the *significant* challenges, those around the production and interpretation of meaningful narratives, actions, images, and algorithms. (The reverse of this makes for a more appetizing claim: significant expression is nothing but a set of "challenges.")

The remarks also aim to suggest here at the outset that there are radically different ways to interpret ludic action, and perhaps more pointedly that the development of these two models themselves is significant, both in isolation and in how they comment on each other's ability to represent organization and control in contemporary society. Ultimately I want to suggest that the spatial-systems critique in *World of Warcraft* is the most useful. This is less a nomination for the correctness of this or that interpretive framework, an unfortunate knee-jerk reaction with some critics, but instead to claim that the "systems" critique introduces a way of thinking that is essentially synonymous with what is known as "historical" or "material" thinking. In other words, to think the historical present, one must think in terms of informatic systems.

The optical-strike allegory helps more because of the flagrant ridiculousness of it all, that any optical strike could possibly command significant influence in a Deleuzean control society, where nonoptical informatic control (biometrics, collaborative

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filtering, clustering algorithms, data mining, technologies of capture, behavioral profiling, and so on) is the norm. The offline is always a decoy in the control society; one must never forget that. This is the homonym pun of "role" and "roll" in gaming. One speaks of "re-rolling" a new character in a role-playing game. The new, "re-rolled" character is created literally or figuratively via a roll of the dice (pencil-and-paper games use this technique literally) before being donned as a "role," in the sense of a dramatic avatar. Any informatic instance of a "role" is thus always subtended by the necessary and continuous input of "rolls" in the form of random-number generation and other nonrandom informatic inputs. Identity becomes mathematics, and mathematics becomes identity.[13]

The same transfection is happening in the "optical" model of *Counter-Strike:* the laws of visuality are quantized and modeled using data arranged in three-dimensional matrices. The difference from *World of Warcraft* is that the actual phenomenon of game play is also one of information systems (character stats as variables, numbers on health and mana, the management of inputs and outputs via "functions" like spells and weapons, the networked quality of group encounters, management and optimization of constituent flows, and all of the other details mentioned previously).

So if Deleuze's control society is of concern to us, if all the details of material life are of interest, if we seek any knowledge of the present moment as conceived as the representation of a history projected into the here and now, it would make sense to home in on those objects of culture that best represent complex material systems alive with antagonism and struggle. Hence my journey from *Counter-Strike* to *World of Warcraft*, and now to a third game, *StarCraft*.[14]

IIIII

If I single out *StarCraft* in this context it is merely due to the aesthetic achievements of this particular title; any number of real-time strategy (RTS)[15] games would be candidates for an analysis similar to the following, as would any media system that focuses on the algorithmic balancing of multiple, dissimilar factions in conflict (which most games are guilty of in some form or another). But the expressed inclusion of the "Zerg" racial category makes *StarCraft* particularly appealing. Why? Because the Zerg simulates a rather unusual ontological category: the swarm.

Everyone knows what a swarm is. It is a large group of living entities such as insects. There are those who suggest, further, that such assemblages exhibit "emergent" or even "intelligent" behavior, as in the ability of ants to martial collective decision-making based on a large number of autonomous actions, or the ability of a flock of birds to navigate collectively based on the microdecisions of

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StarCraft. **Blizzard Entertainment, 1998. Game still.**

its constituent flyers.[16] The Zerg in *StarCraft* are modeled on such a grouping. They attack en masse, overwhelming the opponent by bombarding it on all sides. Each individual Zerg attack may be relatively weak, but the sheer size of the swarm creates a formidable strike. "Emergent" behavior is evident here, too, both in a heavy-handed way via the software interface, whereby several agents may be selected and locked together in a group and then tasked as if they were a single entity, but also in the object-oriented nature of the game software, which produces from the bottom up intelligent behaviors such as flocking, or the "flood" attack style. As with queens versus drones in the insect world, the narrative of the game also lapses back onto a model of radical anonymity "controlled" by a singular consciousness, dubbed the "Overmind" in the gamic narrative. This, too, corresponds to the curious tension in the typical conception of the swarm: these many autonomous mini-agents must always form an organic whole in order to get anything done. The argument goes: a swarm must always be personified—as the Overmind, as the "emergent" whole, or what have you—in order to qualify in some sense as a subject able to act and take responsibility for making things happen. Let me therefore label the current conception of the swarm the "anthropological" model of swarming. In it the hive must always be "subject" to a singular entrainment, just as the operations of the human mind and body are entrained under the single coordination of an individual, integral consciousness.

But suppose the swarm was no mere anthropological proxy. Suppose we direct our efforts toward the swarm itself as an autochthonous material phenomenon unrestrained by the projection of a human spirit within. The essence of a thing is considered to be what that thing is. What does it mean to swarm? What is the essence of swarm? For the argument that follows, the essence of the swarm *must not be too essential.* The swarm is acephalous and unhuman. The topology of distribution abhors an essence. (Complexity theory and notions of self-organization

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claim otherwise but only via recourse to the transcendental.) Thus the essence of the swarm is inessential. But at the same time it is important to ask: Can the swarm be simulated in a machine? Is it essential that it be simulated? I shall return to these important questions at the end.

Swarm comes to us from the German *schwarm,* meaning "a swarm (as of bees)," and from the Sanskrit *svárati,* meaning "sounds" or "resounds." The word does not identify only a specific organic group entrainment but also a type of unique expressive emanation of that group, that pure multiplicity. The swarm is not a "thing"; it is a "resonating." But of what? The swarm is a resonating of its own presence as swarm—as in the audible hum or buzz. As a being the swarm does not exist in any durable sense, as does a material object, but instead exists in a general state of agitation and sensuous energy (which accounts for the palpable sensation of fear often evoked in the heart of man by swarming animals, be they birds or bees). The notion of "resonating" puts any firm sense of physical or material grounding in flux—just as a sound wave puts in flux the material medium it propagates through—which is precisely the mode of presence evoked by the swarm as a form of life. This resonating is always an energy of antagonism; it is a resounding *for,* the buzz—but only the buzz as heard by the listener, the nonswarming observer (who is inevitably the swarm's prey). In this way the swarm is an "asymmetrical presence."[17]

The Zerg is what game designers call a race. A race designates a set of representational proclivities—across both diegetic and nondiegetic representation—that are closely hewed to in matters of narrative, character modeling and animation, gamic elements such as weapons and resources, mise en scène, algorithmic personalities, styles of game play, AI behaviors, and so on. These types of software artifacts are then "metaphorically patched"[18] into games as coherent, contained "races." Gamic races are often essentialist in nature, paralleling certain offline retrograde notions of naturally or physiologically determined and unchangeable human races. Race in a game like *World of Warcraft* is conditioned largely by the demands of aesthetic representation of certain "ethnic" intangibles like voice, visage, and so on (the world is still waiting for an explanation for why *World of Warcraft*'s troll race speaks with a Jamaican accent) and only secondarily intersects with informatic modeling of behavior in so-called racial traits. Race in *StarCraft* is more algorithmically foundational.[19] One speaks of race A's "way of doing things," or the unique combat strategies of race B. (To be sure, we are admittedly speaking about "race" in an entirely gamic context, a context which is altogether different from but in some senses determined by offline race.) In this sense *StarCraft* is more sinister in its representation of race because it provides a much more direct

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mapping of race onto machinic variables. *World of Warcraft* offloads almost all of this functionality to the sister concept, class, retaining race largely for the window dressing of diegetic representation. After these software clusters are metaphorically patched into the game as distinct races, balance in game play is established through the fine-tuning of different variables within each software cluster, reducing a value in one faction and augmenting it in an opposing faction. For example, if one *StarCraft* race is inordinately powerful, certain racial variables may be quantitatively increased or decreased. The goal is to create a better sense of equilibrium in play. Because each software cluster is apt to be quite complex, the techniques of racial balancing generally operate in a rather roundabout way, eschewing any neat and tidy trade-off between this or that trait mirrored across two or more races. Instead, balance is achieved through the delicate art of exchanging qualitatively different values; for example, shaving *time* off one racial ability and transmutating it into a *damage* boost in another race's ability. If the simulated system involves three races, as in *StarCraft* (or an even larger number of classes, as in *World of Warcraft*), the art of balance can be exceedingly difficult, ultimately measurable in certain global statistics such as win-loss percentages for each race or that intangible statistic elusively known as player fun.

There is a better word for this phenomenon: a *market.* Markets are places where the standardized exchange of qualitatively different entities takes place in a naturalized, unfettered fashion. One might make the claim that RTS game—races and all—are essentially simulations of markets. To be sure this is entirely different from the claim, issuing from certain economists, that games like *Everquest* or *World of Warcraft* are markets due to the circulation of virtual gold within them.[20] RTS games (a genre that does not include *World of Warcraft* but does include its predecessor *Warcraft III*) are markets because the algorithms of game play are structured around an economy of resources and productive capabilities. Resources circulate, objects and agents are produced, destroyed, and replenished, all without the exchange of "gold" or the existence of imaginary "marketplaces" in any proper sense. The market analogy is significant because it highlights the problem of how to "control" that which is uncontrollable, or how to shift from top-down control to organic, bottom-up control.

Certainly much more could be said about markets and the race/class distinction, but I will offer just one more observation, that these games subscribe to a specific notion of race and class (one not dissimilar to the offline): race is static and universal, while class is variable and learned. Thus, in *World of Warcraft* racial traits do exist and have a bearing on game play, but they are unmodifiable (alas, the troll-Jamaican alliance is incorruptible),

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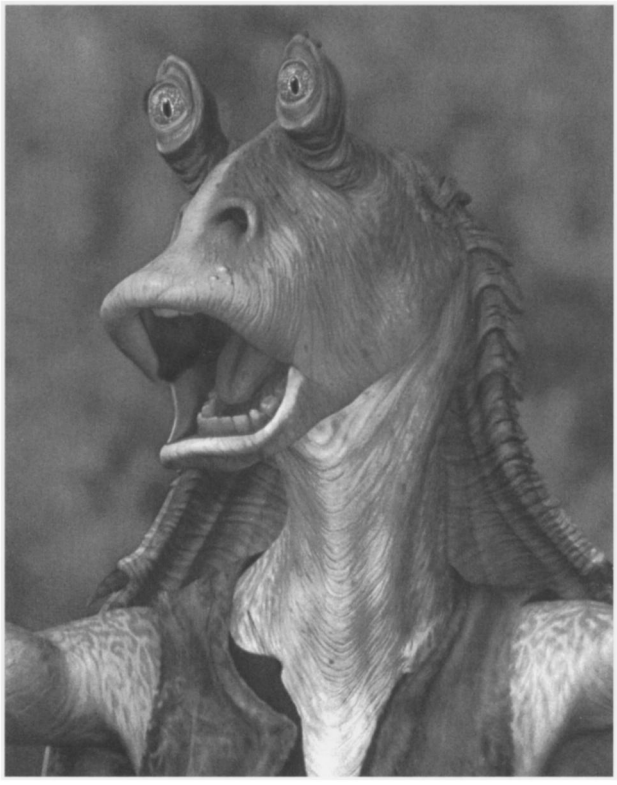

Star Wars, Episodes I–III.
Dir. George Lucas, 1999–2005.
Jar Jar Binks publicity image.

whereas class traits are configurable in a number of significant ways, including the talent tree and the boosting of class abilities via consumables or wearables. What this means is that race is "unplayable" in any conventional sense for all the tangible details of gamic race (voice, visage, character animation, racial abilities, etc.) are quarantined in certain hard-coded machinic behaviors, what I have elsewhere called the "diegetic machine act."[21] One cannot "play" race in *World of Warcraft.* One must accept it as such. Certainly the enterprising gamer can "play with" race via the chat channel, fan comics, and so on. But to *play* with race and to play *with* race are entirely different things. The worrisome conclusion is that this view of race is typically what we would call, in the offline context, racism, in that the game assigns from without certain identifiable traits to distinct classes of entities and then builds complex machineries for explaining and maintaining the natural imperviousness of it all. That the game pleads innocence by placing the narrative in a fantasy world of fantasy races (trolls, gnomes, elves) does not absolve it from foregrounding a systemic, "cybertype"[22] logic of naturalized group definition and division, as in a dream when the most important or perhaps traumatic details are paraded before the mind's eye in such flagrant obviousness that the mind is blinded by their immediacy. The "innocence" of the sublimation is in fact apropos because it illustrates the neoliberal, digirati notion that race must be liberated via an uncoupling from material detail, but also that the logic of race can never be more alive, can never be more *purely* actualized, than in a computer simulation. Apparently one must leave this world in order to actualize more fully its mechanisms of management and ascendancy. Let me stress, the most interesting thing to observe here is *not* that *World of Warcraft* is racist. That would be absurd. The interesting thing to observe is precisely the way in which racial coding must always pass into fantasy before it can ever return to the real.

(An interesting rejoinder is the notion that the race problem in gaming is merely a nominal one, that "race" is simply an unfortunate word choice for what is ultimately a pragmatic design requirement: games often require clusters of algorithmic representational proclivities to designate distinct players and player types. If the game designers had used a different word ["archetype,"

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"species," "family"] would we be having this conversation? The answer lies in the deployment of what Lisa Nakamura calls "menu-driven identities"—with or without reference to race—but also in the disheartening discovery that ethnic and racial coding seem always to be synonymous with mediation itself.[23] The one implies the other. This is what one might call the "Jar Jar Binks" problem of fantasy representation: the more one seems to extricate oneself from the mire of terrestrial stereotyping, the more free and flexible the bigotry machine becomes, able to repopulate one's racialized imagination with "aliens," but aliens that conveniently still stick to the gangly comic relief of the blackface minstrel complete with exaggerated facial features and a Jamaican accent. [In the *Star Wars* films Jar Jar Binks borrows the voice but not the body of black actor Ahmed Best.] Similar scenarios occur in any number of other digital animations, such as the 2001 animated feature *Shrek* [dir. Andrew Adamson and Vicky Jenson] in which Eddie Murphy quite literally plays the ass. Apparently computers are much better at this than we ever could have imagined. In this sense the contemporary format of animation, both cinematic and gamic, is one of the most important sites today where racial coding is worked out in mass culture. Until this issue is addressed, the "race" problematic in gaming will be alive and well, no matter what name it goes by.[24])

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Back to the swarm and to claim number one on the topic of asymmetry: *The swarm is "outside of" traditional organization and control.* The swarm is a "resounding." This means it exists less as a durable, integral agent and more as a state of agitation or energy within some other context to which it is ultimately foreign. As a resounding, the swarm is asymmetrical, meaning that it exists in a relationship of qualitative difference, both within itself and in relation to the without. Thus the swarm is outside of traditional organization and control to the extent that traditional organization and control follow a model of integral sovereignty coalescing around discrete entities or subjects. These are two different "diagrams" of organization. The diagram of the swarm is a distributed network or "rhizome," an entropic force aimed at the annihilation of any form of power existing in the shape of a "consciousness." The diagram of traditional organization and control is a "sovereign," a negentropic force aimed at the preservation and augmentation of integral objects and egos.[25]

To explore this claim about asymmetry, I shift now from games to another time and to another medium. The time is full postmodernity; the medium is cinema. Postmodernity is characterized by heightened frictions between structurally incommensurate

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political diagrams, hence the rise of the so-called conspiracy film in Hollywood;[26] or the growing importance of social movements and the New Left, which, if it did anything, offered up to the powers-that-be a "new model" for how social life might operate; or the new bellicose swarms in the form of asymmetrical warfare in Vietnam and the guerrilla wars of Nicaragua, El Salvador, or Guatemala.

In Richard Sarafian's 1971 film *Vanishing Point,* the distributive diagram, exemplified in the network form, and the sovereign diagram, exemplified in the integrity of objects and individual egos, are clearly rendered. The network—the geographical network of highways and back roads; the communications network of police radio and radio station KOW; the social network within and adjacent to the counterculture—keeps the film's protagonist, Kowalski, alive. Kowalski routes himself from one friendly node to another. He has no home base or command center to return to for protection and guidance (as do the cops). Nonetheless, an individual ego, he remains a distinctly nonnetworked agent in the film. He exhibits no network-centric strategies of escape or advance (such as swarming or flooding). He experiences no fragmentation of identity. In fact, the opposite is true: desire is invested in the spiritual and bodily integrity of Kowalski as he navigates a treacherous, overland obstacle course.

In *Vanishing Point* the sovereign mode is eventually elevated over the distributed. Although Kowalski may leverage the hidden virtues of the networked forms surrounding him, as an individual he still must face off kind against kind with the cops. The speed and physical integrity of Kowalski in his machine are matched against those of the state. The hope of the film is that there might be a symmetry in this conflict, an ability to translate quantitatively from protagonist to antagonist, whether it is between the brawn of the black KOW radio engineer and the brawn of the racist deputy, or the horsepower of Kowalski's Dodge Challenger and the horsepower of the cops' squad cars. Ultimately, though, *Vanishing Point*, along with a handful of other films, including Ridley Scott's *Thelma and Louise* (1991), is about an asymmetrical war and how to lose it.

In the film, all the indices of the counterculture are wrapped up in the superior muscle of the white Dodge Challenger. Using a type of intuitive or extrasensory perception and a radio scanner to eavesdrop on both Kowalski and the police, the blind disc jockey Super Soul effectively creates a two-way feedback loop. Soul's radio station, KOW, becomes a bidirectional communications platform broadcasting directly into the fugitive's car, thus symbolizing the alliance in the film between the black and white countercultures (a connection established early on in the narrative with Kowalski's speed-dealing friend in Denver). This structure

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of bidirectionality (with the distributive mode) is one of the key virtues of what Hans Magnus Enzensberger called an "emancipated" medium.[27] Speed is the special virtue that keeps Kowalski out of reach of the law. The only advantage he has is his ability to flee faster and flee farther. But in the end the state triumphs in this asymmetrical war, and so goes Kowalski, snuffed out in the final frames by an immovable obstacle. The state triumphs against Thelma and Louise's road rebellion, too, even if the final frames of that film recast their death as a form of martyrdom. The political unconscious in both films keeps a vision of utopia alive for quite a while, but ultimately the guerrilla forces are defeated.

If *Vanishing Point* expresses the cynicism inherent in late-modern political realities, then a film like *First Blood* (dir. Ted Kotcheff, 1982) expresses the concomitant political fantasy. The two films stem from similar histories and desires (Vietnam, individual alienation, police violence, a desire for freedom, and so on), but where *Vanishing Point* resolves the asymmetrical war against the state through self-annihilation, *First Blood* resolves the war by simply winning it.

"I'll give you a war you won't believe," threatens John Rambo, who later smashes clean through the same type of police roadblock that destroyed Kowalski. As in the earlier picture, a lateral alliance between blacks and whites is affirmed in *First Blood.* Rambo's visit to Delmar Berry's house at the opening of the film is posed against the antiblack racism of the cops—"C'mon LeRoy, sling that paint, boy!" the booking officer in the police station screams to a faceless black day laborer. In both films, the terms of warfare are asymmetrical. In both films, the two sets of warring parties are equipped with the same conventional tools (e.g., vehicles and radios) and engage in conflict using matching strategies that can be measured against each other: horsepower against horsepower in *Vanishing Point;* fire power against fire power in *First Blood.* But the protagonists of both films also are fighting an essentially guerrilla war and therefore adopt asymmetrical tactics wholly absent from the state powers that are their antagonists. In *First Blood* these tactics are literalized through unconventionality in the form of the special-forces tactics used by Rambo in the film's scenes of conflict (he is a Green Beret, awarded the Congressional Medal of Honor, an "expert in guerrilla warfare," the audience is reminded), as well as the necessary association with Vietnam which remains a primary referent in the contemporary American imaginary for unconventional war ("there *are* no friendly civilians," Rambo testifies). Rambo has recently returned from Vietnam, and he learns that the tactics used by local sheriff Teasle are not dissimilar to those of the enemy in Vietnam. "Those Green Berets, they're real bad-asses," observes one sheriff's deputy. It's 'Nam all over again, only this time in the fir forests of

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Washington State.

Rambo is a machinic anomaly. "One of your machines blew a gasket," complains Teasle to the Green Beret colonel Trautman who trained the fugitive killer. And because of Rambo's unusual talents, the war is thought unwinnable: "200 men against your boy" is a no-win situation, the sheriff worries later. If *Vanishing Point* is an allegory for rebel forces losing an asymmetrical conflict, *First Blood* is an allegory for how a rebel might win one. Rambo was trained by the state, but in tactics unconventional. His reluctant revenge against the state is, likewise, via unconventional conflict. First he fights the state in the mountains of the Cascades, using unconventional tactics of assault and concealment. Then in his attack on the town, he starts by destroying their source of gasoline, setting two pumps ablaze—just as Saddam's retreating guerrillas would do ten years later in the oil fields of the first Gulf War. This act of "sabotage"—one of the many historical synonyms for an asymmetrical strike; in our own time the word is *terrorism*—is matched only by his subsequent infiltration and destruction of the town's source of ammo (a hunting-supply store called The Outpost). That he ends the film in handcuffs—a broken man, yes, but at least not dead like Kowalski (a deviation from David Morrell's novel, in which Colonel Trautman kills Rambo)—is but a footnote to his gains during the film as a guerrilla fighter against state power. He is no longer just a counterculture renegade on the run like the comparable characters in *Easy Rider* (dir. Dennis Hopper, 1969) or *Two-Lane Blacktop* (dir. Monte Hellman, 1971) or *Badlands* (dir. Terrence Malick, 1973) or *Vanishing Point.* He is a super-soldier who declares asymmetrical war on a state power and almost wins.

These filmic referents are signposts for how a specific mode of antagonism, the asymmetrical encounter, is made intelligible in culture and how exceedingly difficult it is to visualize the "non-self" that is asymmetrical, whether it be a guerrilla fighter or a swarm presence. Some films diverge from this trend: Joe Dante's *Piranha* (1978) or the various killer-bee flicks that represent the swarm as the unadulterated Real, either as a smooth texture of swarming "noise" over the film frame or as a killer cloud of frenzied dots. For the most part, however, the asymmetrical swarm has trouble being simulated as such and is often modeled or sublimated into something else. The faceless swarm often must be facialized before it can be faced as an enemy, as with Kowalski and Rambo. Other examples include instances of the "facing of enmity," such as the giant faces at the end of *Tron* (dir. Steven Lisberger, 1982) or *The Matrix Revolutions* (dir. Andy Wachowski and Larry Wachowski, 2003), and the entrainment of the hive under the sovereignty of the queen or the "Overmind."[28] On the other hand, when the swarm is informationalized and turned into

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Tron. **Dir. Steven Lisberger, 1982. Film still.**

stochastic noise, as in *Piranha,* the "essence" of the swarm is implicitly understood, if it is understood at all, as some interpolation of the overall patterning of behavior.

StarCraft represents a synthesis of the two: Kowalski and Rambo exist in the same relation to the state as the Zerg does in the larger algorithm of *StarCraft.* However, the Zerg-Terran-Protoss oppositional dynamic is an entirely informationalized and algorithmic affair. Again, the uniting queries are: Can the swarm be simulated? Is it essential that it be simulated? Is the essence of the swarm inessential? The startling reality of *StarCraft* is that swarming tactics are in fact extensively and effectively foregrounded in the gamic algorithm. Why startling? Because the very premise of the swarm is that of asymmetry, the structural incompatibility of two different modes of presence and two different modes of the expression of force. Thus the overcoming of such a structural incompatibility in the form of the game's race-based play styles (Zerg, Terran, Protoss) consummates what was thought to be an impossibility: the Zerg is a swarm, but it is in perfect ecological balance with the nonswarm.

This leads to a second claim: *the swarm is synonymous with organization and control.* This is what is meant by the various references thus far to "balance." In *StarCraft, balance* refers to the *recuperation* of the swarm as a set of variables and processes in algorithmic relation to the other members in the system. Cybernetic systems have always been defined, from Norbert Wiener forward, using the language of normativity, equilibrium, and homeostasis. (What happens when cybernetic systems skitter out of control? They go "offline.") And this is why I may make the observation at the outset, perhaps offensive at first glance, that cybernetic systems are essentially sadistic in that they derive pleasure—they are affective, they are expressive—via the subduction of objects in their domain. It is no coincidence that one of the best simulations of swarm presence, *StarCraft,* is also one of the best examples of the RTS genre, the very genre that deals most strongly with

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normative, machinic management of complex systems. (Consider where *StarCraft* falls on the *World of Warcraft*/*Counter-Strike* gradient.) Thus with *StarCraft* there exists the swarm as the very exemplar of optimal flow and efficiency management. Balance then reemerges as the "virtue" of the cybernetic network. But it is a distinctly nefarious virtue bent on the subsumption of difference, be it the racial asymmetry of the Zerg swarm or the offline import of race itself. The game is, like Wikipedia or any number of contemporary digital phenomena, a "self-correcting text" in all senses of the phrase, politically reactionary and otherwise. This is where *StarCraft* becomes useful as allegory. The notion is not that the Zerg is a stand-in for this or that political force or that the Terrans refer to a certain terrestrial political formation to which one can point. Rather one must take the systemic equilibrium of these various political modes in sum: power today may leverage a variety of different formal modes (the sovereign fiat, modern disciplinary power, or informatic distributed control), all of which are eventually integrated and, via informatic simulation, brought into some sort of ecological balance such that the singular divisions of them are held up as utterly significant only to be denuded in the final calculation as completely inessential.

But what of simulated systems like *World of Warcraft,* which have no ostensible equivalent for the swarm behavior modeled in the Zerg racial category? The different character classes are, in a sense, qualitatively equal in *World of Warcraft*, and balance is less an act of transmutation from qualitatively different modes of expression (as the Zerg is to the Terran, so the guerrilla is to the conventional army), but simply the bringing-into-accord of a small number of related classes via the use of countless variables representing advantages and deficits in force, time, and space. This is not to say that swarming is gone. Far from it: the Zerg swarm has reappeared as the base substrate of the game itself, particularly in the game's player-versus-player mode, which, while amenable to structures of centralized organization and control via technologies such as group leaders and team-based voice communication, initiates a general state of acephalous, multiagent conflict. This is essentially what networks *are,* at least in the instrumentalized, militarized form of the rhizomatic network (what Arquilla and Ronfeldt call "netwar"[29]). Thus one still speaks of the action of "Zerging" or the movement of the "Zerg" even in *World of Warcraft,* which ostensibly has done away with polycentric swarming as a racial or class trait. (This is also a question of how genre and political economy may work in unison: the evolution from *Warcraft III*—which, for the sake of argument, is gamicly similar to *StarCraft*—to *World of Warcraft* is a change in genre not in narrative; it is a change from one mode of play to another. The game algorithm must therefore do away with the concept of

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the acephalous swarm in favor of the singular, integral subscriber, who may opt to constitute one element in a very different kind of swarm. In brief, it goes from swarm from above, to swarm from below.) The difference between these two games is an example of what Marx calls formal versus real subsumption: *StarCraft* illustrates the formal subsumption of the rhizomatic or asymmetrical swarm antagonism in the instance of a singular, exemplar race (the Zerg), and *World of Warcraft* illustrates the real subsumption of the same dynamic integrated fully into the actual spatial, semiotic, and algorithmic grammar of the game.

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This discussion of the swarming tendencies in *StarCraft* and other artifacts of mass culture leads to a few paradoxes, but paradoxes that must remain as such in order to understand more fully the topic at hand. First to reiterate one of the conclusions of this essay: *StarCraft* establishes systemic balance based on (modeled) asymmetric warfare between swarms and nonswarms. Thus there exists a basic paradox between balance and asymmetry inside cybernetic systems: if the asymmetrical entity is in fact balanced, then certainly one must admit that it is no longer an asymmetrical entity proper; but if the asymmetrical entity is in fact not a tautology, one must accept the unity of opposites (swarm and nonswarm). This is exacerbated by the realization that digital systems are characterized by a universally false "unity of opposites" in which radical diversity is always maintained at the cost of a universal baseline homogeneity (which one might simply call mathematics). This is what was previously referred to as the "recuperation" of the Zerg. The point is that swarms are simultaneously synonymous with and outside of organization and control, which itself has adopted rhizomatic flows as one possibility among many. One must believe the two claims together in order to have any understanding of how a swarm comes into presence.

One must ask: What is the essence of the swarm? The swarm is a resounding-forth. It is a buzzing, an articulate, identifiable murmur that is nevertheless unendowed with an emergent spirit or soul. If a resounding-forth is the essence of the swarm, it is a resounding-forth that cannot be further reduced to a hermetic, singular ego. It is acephalous and unhuman. It is a disavowal of centering, of genetic reduction to any sovereign essence. This is what it means to say that the swarm is unhuman. Certainly the swarm has as its "essence" the creation of presences, as in the resounding-forth. But the swarm also brings about the destruction of that uniquely "human" form of presence.

It follows too that one must ask: Can a swarm be simulated? Can a copy be made of a swarm; can it find a likeness? Can a swarm

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be modeled in a computer? The answer to these questions also leads to a thicket of ambiguity, but one in which we must dwell in the process of thinking the swarm.

In the first place the swarm is one of the very few modalities of being that overtly rejects the nonsimulated or the authentic, for the swarm is not endowed with any original, authentic core. The swarm is "soulless" because it is acephalous and unhuman. It is "essenceless" because there exists no inclusive genus of "swarmness" under which banner all swarms can be "understood" or "made known" to the mind; swarms are in part defined as that which brings about the degradation of minds, of all inclusive genera. No Platonic conflict would arise between the essence of a thing and its representation in art, if that thing is "inessential" to begin with.

Thus the swarm appears entirely amenable to the phenomenon of simulation. With no original to begin with, the simulated swarm is the consummate "copy without an original." This is not a matter of rejecting authenticity: the swarm simply does not dialogue with such terminology. The swarm exists as a simulation with zero anxiety about the relative truth value of itself existing in simulated form, over and above some lost original essence, because the swarm harbors no lost original essence.

Second, the notion of a simulated swarm runs aground on the fact that simulation itself, and most particularly its computerized variant, is nothing if not the vast mimesis of values distilled as "essential" or at the very least "adequate" stand-ins for the thing in itself. One thinks of debates around pixel resolution, polygon counts, frames-per-second, sample rates, not to mention genetic sequences, and bioinformatic signatures. It would be foolish to think that flocking algorithms are not in fact simulations of actual animal (e.g., bird or fish) flocking. It would be foolish to think that the digital scanner, no matter how artificial and socially constructed it may be, is not in fact keying off of the empirical world. The Platonic idea stands apart from the object but in formal relationship to it. So, too, the digital simulation stands apart from the referent but in formal relationship to it. What is this process if not the essencing of the object?

Thus, one might answer in the affirmative that the swarm *can* be simulated, for the two reasons just given, yet this affirmative response puts the status of the essence of the swarm in question. The more the swarm presences itself in the digital simulation, the less fixed it becomes as a presence.

The essence of the swarm is, in this sense, inessential. Such an ambiguity is indicative of the way in which swarm presence must absolutely be understood as the twofold conjunction of contrasting claims. (1) The swarm is inessential, as in "not having an essence": swarms are not defined via a core leader or central origin; but

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swarms are also a resounding-forth of an articulate, identifiable murmur of life. (2) The swarm (as simulation) is also inessential, as in "unimportant" or "not required": it bucks the habit of thinking that champions the faithful association of subject with object or sign with referent; it demonstrates that, for the digital simulation, the "offline" swarm is entirely inessential for the accurate creation of an "online" swarm, modeled via its essential data points and behaviors (flocking and so on); most crucially it erases itself as "unimportant" in the political sense too, for the task of balancing the cybernetic system is one in which all antagonists, whether conventional or unconventional, symmetrical or asymmetrical, are brought together into a universal ecosystem of stratified organization.

John Singer Sargent. *Orestes Pursued by the Furies*, 1921. Museum of Fine Arts, Boston.

It is essential, however, that we continue to think this way. For as we reveal the crisis of being that is the cybernetic system (or the swarm, or the conjunction of the two), we also reveal the crisis of thinking. This is not a crisis that should, or can, be resolved. But is instead more akin to a crisis of faith, as the seeker understands his or her own seeking via the inability to consummate that seeking successfully in the here and now. "What is most thought-provoking in our thought-provoking time," writes Heidegger, "is that we are still not thinking."[30] The "essay" should always be thought of in its true sense of a "try" or an "attempt." The attempt acknowledges the perpetual gap between the as-yet-known and the as-yet-unknown and acknowledges that thinking is the process by which the known is reread as the coming into being of the unknown.

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Notes

1. *Manhunt,* Rockstar Games (2003). A stylish but exceptionally violent game, *Manhunt* was banned in a number of countries upon release.

2. Early cybernetic research dates to the World War II period and the late 1940s, culminating with Norbert Wiener's 1948 book *Cybernetics: Or Control and Communication in the Animal and the Machine* (Cambridge: MIT Press, 1965). For more on "ergodic" media, see Espen Aarseth, *Cybertext: Perspectives on Ergodic Literature* (Baltimore: Johns Hopkins University Press, 1997).

3. Gilles Deleuze, "Postscript on Control Societies," in *Negotiations* (New York: Columbia University Press, 1990), 177–182.

4. For more on the subjective-camera perspective, see my "Origins of the First-Person Shooter," in *Gaming: Essays on Algorithmic Culture* (Minneapolis: University of Minnesota Press, 2006), pp. 39–69. For remediation and media layering, see Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge: MIT Press, 2000); and Marshall McLuhan, *Understanding Media: The Extensions of Man* (Cambridge: MIT Press, 1994). For a longer analysis of the algorithmic quality of nondiegetic representation in virtual worlds, see my "Gamic Action, Four Moments," in *Gaming,* pp. 1–38.

5. *Counter-Strike* is a multiplayer, first-person shooter first released in 1999 as a user-created modification of the game *Half-Life* and then commercially released as a stand-alone PC game by Valve Software in 2000. Today it is the most widely played online first-person shooter in the world.

6. *World of Warcraft* was published in 2004 by Blizzard Entertainment; it is a massively multiplayer online role-playing game, currently with 7.5 million subscribers worldwide. The player-versus-player (PVP) mode consists of "battleground" instances with up to eighty players, raids, one-on-one duels, PVP realms, arenas, and zone-specific encounters.

7. Samuel Weber, *Targets of Opportunity: On the Militarization of Thinking* (New York: Fordham, 2005). The fifth chapter, "Networks, Netwar, and Narratives," originally appeared in *Grey Room* 15 (Spring 2004): 6–27.

8. More information on ray tracing is available in a number of textbooks on computer graphics including Andrew Glassner et al., *An Introduction to Ray Tracing* (San Francisco: Morgan Kaufmann, 1989).

9. Jane Avrich et al. "Grand Theft Education: Literacy in the Age of Video Games," *Harper's Magazine,* September 2006, 31–39.

10. There is a ghost term here too, *that of time,* which is exceedingly important both to *World of Warcraft* and to systemic relations in general, but which must be put off for another day.

11. Alexander R. Galloway and Eugene Thacker, "Protocol, Control, and Networks," *Grey Room* 17 (Fall 2004): 6–29.

12. Walter Benjamin, *Illuminations* (New York: Shocken, 1969), 242.

13. This should be understood in a manner entirely unrelated to Alain Badiou's intricate and formidable thesis regarding mathematics and ontology, that the sorts of claims made in mathematics (on the void set and the notion of a pure multiplicity) are the only viable claims one can make about ontology. See, in particular, Alain Badiou, *Being and Event* (New York: Continuum, 2006).

14. *StarCraft,* Blizzard Entertainment (1998).

15. The RTS genre is characterized by a simulated economy involving resource collection and the production of weapons, fortifications, and fighting units. RTS games do not involve turn-taking, but instead transpire in real time. They are typically "God games," meaning they adopt a third-person, bird's-eye camera perspective and require the micromanagement of a large number of relatively autonomous player tokens. In addition to *StarCraft*, emblematic RTS games

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include *Warcraft III* (Blizzard Entertainment, 2002), *Age of Empires* (Ensemble Studio, 1997), and *Homeworld* (Relic Entertainment, 1999).

16. For a good overview of these phenomena, see Steven Johnson, *Emergence* (New York: Scribner's, 2001). In the context of cellular automata and complexity theory, see Stephen Wolfram, *A New Kind of Science* (Champaign, IL: Wolfram Media, 2002). For the Deleuzian concept of assemblage and its relation to social formations, see Manuel DeLanda, *A New Philosophy of Society: Assemblage Theory and Social Complexity* (New York: Continuum, 2006).

17. For more on swarming as an asymmetrical military tactic, see John Arquilla and David Ronfeldt, *Swarming and the Future of Conflict* (Santa Monica, CA: RAND, 2000).

18. "Metaphorically patched artifacts [are] technological narrative elements that are brought to fit into the diegesis by the deployment of a metaphor." See Eddo Stern, "A Touch of Medieval: Narrative, Magic and Computer Technology in Massively Multiplayer Computer Role-Playing Games," in *Computer Games and Digital Cultures Conference Proceedings,* ed. Frans Mayra (Tampere, Finland: Tampere University Press, 2002).

19. The *StarCraft* universe contains two playable races in addition to the Zerg: Terran, a human colonizing force with Marines, tanks, and the like; and Protoss, a cybernetic race steeped in arcane psionics.

20. See, in particular, Edward Castronova, *Synthetic Worlds: The Business and Culture of Online Games* (Chicago: University of Chicago Press, 2005). A precursor to *World of Warcraft, Everquest* is a massively multiplayer online role-playing game released in 1999 by Sony Online Entertainment.

21. Galloway, *Gaming,* 1–38.

22. See Lisa Nakamura, *Cybertypes: Race, Ethnicity, Identity on the Internet* (New York: Routledge, 2002).

23. Nakamura, 101–135.

24. I thank David Parisi for raising the problem of nominalism in this context.

25. For more on the concept of the diagram, see, in particular, Gilles Deleuze, *Foucault* (Minneapolis: University of Minnesota Press, 1988); and Gilles Deleuze, *Francis Bacon: The Logic of Sensation* (Minneapolis: University of Minnesota Press, 2003), 81–90. On the rhizome, see Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987), 3–25. For the concept of the distributed network, see Paul Baran, *On Distributed Communications* (Santa Monica, CA: RAND, 1964).

26. Fredric Jameson's extended meditation on the conspiracy film is contained in his *The Geopolitical Aesthetic: Cinema and Space in the World System* (London: BFI, 1995), 1–84.

27. Hans Magnus Enzensberger, "Constituents of a Theory of the Media," in *Electronic Culture: Technology and Visual Representation,* ed. Timothy Druckrey (New York: Aperture, 1996), 62–85.

28. Facing and the ethical relation is addressed in Emmanuel Levinas, "Ethics as First Philosophy," in *The Levinas Reader,* ed. Séan Hand (New York: Routledge, 1989). For a longer discussion of the "defacement of enmity," see Alexander R. Galloway and Eugene Thacker, *The Exploit: A Theory of Networks* (Minneapolis: University of Minnesota Press, forthcoming).

29. John Arquilla and David Ronfeldt have written a number of texts on this concept, including *The Advent of Netwar* (Santa Monica, CA: RAND, 1996). See also Weber.

30. Martin Heidegger, *What Is Called Thinking?* (New York: Harper & Row, 1968), 28.

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