

Swarming is Seeing

Cyborg Blasphemy and Relations of Perception

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Abstract

What remains after the cyborg is the call to read our cultures carefully, critically, and most of all, blasphemously. Haraway’s original Manifesto highlighted how the cyborg emerged from a blasphemous reading of Cold War military technology and culture to generate new anti-essentialist feminist political subjectivities. In the contemporary moment, the swarm and the crowd have captured how many think about human and non-human behaviors. They seek to exploit swarms’ decentralized, adaptive, and emergent behaviors to challenge top-down structures of power for transformative ends. How might swarms be read blasphemously? In this paper, I use studies of ant behavior and human perception as a point of departure to see swarms not simply as an emergent mode of social organization, but also as a form of perceptual embodiment. To swarm is to see in a specific way. I thus explore how changes in how humans perceive the world might simultaneously be technologies of and potentially against swarms.

Blasphemy, Terror, and Perception

In this paper, I want to do a few things, and one is to look back at Haraway’s Cyborg Manifesto and think about the relationship between humans and technology, as well as politics, feminism, and emancipation that Haraway discussed. It’s my sense that the importance of both in the manifesto is often overlooked in favor of either the arguments about politics and feminism or humans and technology. As I map out the notion of blasphemy, which is one of the key terms that I’m going to be using, I want to emphasize the importance of thinking about the cyborg as a figure that twists feminist politics and technoscience into each other. The second thing is, I want to map out the specific

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cultural contexts in which the manifesto was written, to highlight what blasphemy entailed in that context. Then, third, I’m going to speculate, but I want to think about what we can be blasphemous about, what can blasphemy do for us in the contemporary world.

I want to start with this image, that I think will be familiar, and this pair of lines produces an optical illusion known as the Müller-Lyer illusion (figure 1); depending on the direction of arrowheads on either side, people will perceive one line to be longer than the other, even though both are actually the same length. The ordinary folk explanation for this illusion is that our eyes deceive us, our bodies deceive us; the world is out there, and our minds are in here, and in between our body does something to the information we’re getting from the outside world in a way that twists, or disturbs, or distorts what we’re seeing. Each time we recall this explanation, I think we reproduce the Cartesian skepticism in our senses and bodies, which privileges

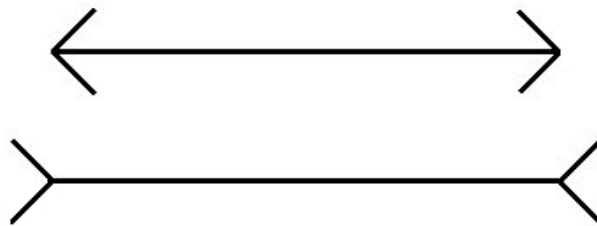


Figure 1

the ability of our individual minds to access the world and draws upon the notion that one can and should try to control one’s perceptual relationship to the world.

Now, this illusion, I think, can do more than bring us back to the modernist Cartesian settlement. Provoked by this symposium, I want to think about what Donna Haraway’s *Cyborg Manifesto* might offer us for thinking about it in productive ways. So, my main arguments will be that Haraway’s manifesto was a powerful injunction for cultural analysts to be blasphemous and that it provides a guide to blaspheming. Blasphemy is a critical, situated, and affective engagement with our societies that brings their immanent analytical political potentials into relief, so the manifesto’s cyborg materially and metaphorically embodies blasphemy by its positioning at the crossroads of feminism and post-cybernetic Cold War North America¹. I’m going to use

¹ As Haraway writes, “At the centre of my ironic faith, my blasphemy, is the image of the cyborg.” (1991, 149)

the first half of this paper to recall that social situation, in which the cyborg emerged, and how Haraway used it to draw out possibilities for new politics in its time.

The second half of this paper, I want to shift to now, when we are still among cyborgs, but we might also detect other immanent analytics and politics. Now here, I want to focus on the swarm. By swarm, I collect these different instances of partially hierarchical, partially decentralized modes of relations that draw upon the tension between individual and local organizing and global structure to generate self-organizing patterns. Now, I mean especially those relations facilitated by distributed natural-cultural networking and computation techniques and technologies. So, under the swarm, I include related figures such as the crowd, the horde, and the mob. Many things swarm: bees swarm, Twitter and Facebook users swarm, car-sharing users swarm, crypto currency miners—which are all over the news right now—swarm, attack drones swarm, and capital swarms. Everything seems to swarm, and anything that doesn’t swarm, seems potentially improved by swarming. So, my main interest will be in thinking about swarms in the emergence of hyper-polarized political discourse in the west, and especially in the North American context. Swarming is blamed for the emergence of illiberal groups, but progressives also see swarming as a model for political emancipation.

But, if everything’s a swarm, actually or potentially, I think this signals a need for new analytics, and this is why I’m going to try to be blasphemous, and where the Müller-Lyer illusion enters the story again. I want to draw upon a paper of mine—not a paper of mine, a paper that I like, which might help think about swarms blasphemously. After this, I’m going to speculate a bit more about what we might get from politics at the current moment.

Cyborg Origins and Ends

“In a sense,” writes Haraway, “the cyborg has no origin story in the Western sense,” (Haraway 1991: 150) the cyborg was not born into the world the way the biblical Adam was, there was no union with God or nature from which cyborgs were separated to become cyborg. The cyborg is, “an implosion of partial births and connections.”

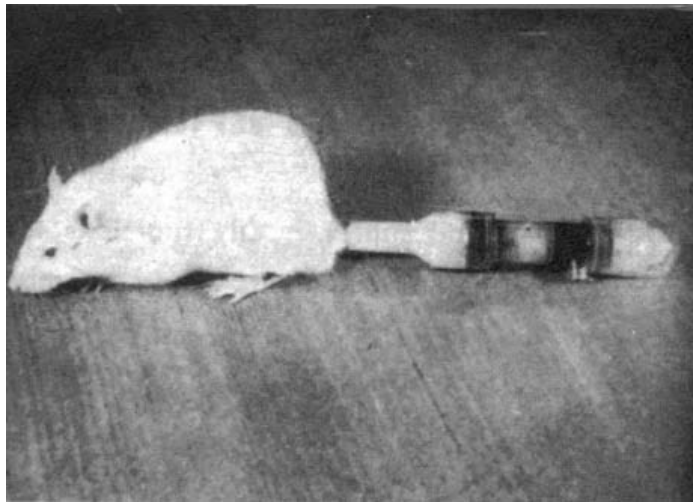


Figure 2: Cyborg Mouse with implanted osmotic pump, from Clynes and Kline (1960: 27)

(Haraway 1992: 300) Its manifestation is impossible to explain in one story, but it does have an imagined endpoint, “a telos of the West’s escalating dominations of abstract individuation, an ultimate self untied at last from all dependency, a man in space.” (Haraway 1991: 151) That’s a quote from the “Cyborg Manifesto.” Haraway’s reference

here to a man in space is to the 1960 paper “Cyborgs in Space,” said to have coined the word cyborg, written by Manfred Clynes and Nathan Kline, and this is an image from that paper. Clynes and Kline took an actually existing cyborg, it was a mouse that had been linked up to an osmotic pump and saw in it a future where human cyborgs would be free to be in outer space without life support systems—so they’re imagining a human with these kinds of pumps and machinery regulating its body, so it could go to space without a spaceship. So, the cyborg’s first appearance in print, it’s not simply an enhanced mouse, but an amalgam of fiction and fact; the fact is the mouse on the lab bench and the fiction is the space cyborg. Clynes and Kline allow themselves to speculate where a cyborg might lead, writing that it might “provide a new and larger dimension for man's spirit,” (Clynes and Kline 1960: 760) and for Haraway, this reads as the dream of the ultimate domination of a Western, technocratic, and masculinist individualism.

But, this isn’t the only telos for the cyborg; the 1980s, when she was writing and thinking about these things, were also a time of reflection among feminists in the United States; it had not been long since the struggles for women’s emancipation and these became conjoined with environmental movements’ critiques of technological progress, especially after World War II. It was a time when slogan such as these—“atoms for

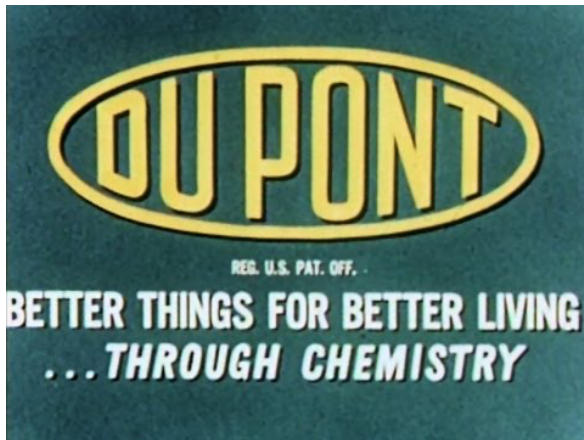


Figure 4: Advertising slogan of DuPont from 1935 to 1982



Figure 4: “Atoms for Peace” Postage Stamp, issued in 1955

Peace” (figure 3), “Better things for better living through chemistry” (figure 4)—became recognized as monstrous, and masculine.

In some influential areas of feminist thought, this coalesced into a strong association of women with nature, men with science and technology, and women’s emancipation was the rejection of modernity and a return to nature. Carolyn Merchant’s 1980 book, *The Death of Nature* (1980), exemplifies this; Merchant reads the history of modern science from the early-modern period in Europe as entangled with the history of women’s subjugation by men. This is one of the statues that she talks about, it’s called 《Nature Unveiling Herself Before Science》 (La Nature se dévoilant à la

Science) and it’s of a woman removing her clothes (figure 5*). According to Merchant, the pioneers of modern science looked at scientific discovery as the disrobing of a woman, and the technological exploitation of nature as her penetration and rape. Scientific rhetoric about nature was inseparable from masculinist rhetoric about women.

For a feminist and scientist like Haraway, Clynes and Kline’s dream of the cyborg man floating in space was horrifying, but so was Merchant’s total rejection of modern scientific technology which made women a pure and natural essence without history. One seems to imply the other, in fact, there’s no contradiction between the

* The image is from Wikimedia Commons (photo taken by Michel wal)
https://commons.wikimedia.org/wiki/File:Barrias_La_Nature_se_d%C3%A9voilant.jpg



Figure 5: Louis Ernest Barrias 《La Nature se dévoilant à la Science》 1899

technological man who leaves earth to float in space and the anti-technological woman living in harmony in nature back on earth; both can live happily in the same universe. This version of feminism naturalizes the category of “woman”, and assumes the sameness of all women, regardless of their worldly conditions. So, subaltern women, women of color, for instance, or queer women, can’t be heard, let alone be perceived as subaltern.

“Blasphemy,” writes Haraway, “has always seemed to require taking things very seriously.” (Haraway 1991: 149) The cyborg was a way to be blasphemous about modern technoscience and feminist politics. Taking the conjuncture of feminist politics and cyborg entities seriously, Haraway attempts to

have the myths and materiality interfere with one another; the cyborg is a figure of connection of technology and nature, bodies and machines, inside and outside, linked and twisted into each other across the figure of the woman. It suggests a subversiveness of translating the ostensibly pure categories of women and nature with technology. The cyborg mouse becomes the material provocation to think women differently, not as a natural essence, but as a zone of partial connections made temporarily stable and obligatory by the circumstances of the Cold War West. The myth of oneness dissolves; in its place is a figure that doesn’t oppose science and technology, but is connected with it. Its politics no longer rejects technoscience to emancipate women but can find allies in it. Correspondingly, technoscience can be channeled away from the telos of the

individual man in space and towards something else that may be neither man, nor woman, neither natural, nor cultural, at least in a pure classical sense.

Now, blasphemy is also an affective, and embodied, and sensual experience. When we encounter blasphemy, we face anxiety, and instability, and terror, but not all terrors are created equal. Blasphemy requires us to develop a sensitivity and attunement to be able to distinguish the terrors that are destructive and nihilistic from those that are creative and generative. The particular terror of the cyborg is that of rape and its counterparts emasculation or queering. As I mentioned earlier, Merchant's alliance of woman and nature against modern science and technology is rooted in a sense that technoscience is a sexualized violence against the feminine body, in the way that a man could terrorize a woman, technoscience terrorizes nature.

From this viewpoint, Clynnes and Kline's is an icon of the rape of nature by technology. This terror has its mirror image in the fear and rejection of the queering of the male body that philosopher Katherine Hayles (1999) sees in the writings of the father of cybernetics, Norbert Wiener. Hayles argues that when Wiener faced the blurring of the boundaries of the body by cybernetics, he felt an almost visceral resistance to the penetration of the inside by the outside and the associated loss of control over one's body. And Wiener uses erotic, but sanitary metaphors to justify the autonomy of the heterosexual masculine subject against, or in spite of, the radical blurring possibilities of the cyborg. The terror that Wiener faced was the fear of being penetrated and losing himself in the process; anxieties about homosexuality, emasculation, queering worked to entrench the autonomous male individual as the ultimate locus of control.

The cyborg, then, is also blasphemous because it points to how the terror of blurred boundaries might be linked to creative possibilities rather than destruction. Without dismissing the terror of rape, blasphemy pushes us to occupy the broader terror of penetration so that we can see it's not just about wielding total control or being subject to it. As Haraway writes, the cyborg is, "wary of holism, but needy for connection." (Haraway 1991: 181) Not all penetration is rape, even though the terrors evoked by it may be difficult to distinguish.

To summarize, blasphemy, then, is about being faithful to the myths and materiality of the world as they exist around us while being attentive to how they also connect with and contaminate each other without simply trying to escape the terror that they might evoke. The blasphemy of the cyborg is finding, in its masculine and militaristic image something for feminism, while finding in feminism something for the cyborg, leaving both changed in the process. Blasphemy is thus encapsulated in the manifesto’s famous final statement, “though both are bound in the spiral dance, I would rather be a cyborg than a goddess.” (Haraway 1991: 181)

Swarm

I think we’ll hear more about this later on. I think we’re coming to terms, still, with what a cyborg embodies, but in the years since Haraway’s manifesto, other figures have emerged to counter the ways that we dwell in the world, and I want to focus on one, which is the figure of the swarm (figure 6*).

Swarms, according to the philosopher Eugene Thacker (2009), are organizations characterized by three features: swarms coordinate local action to produce complex global activity, such phenomena are dependent on a high degree of



Figure 6*

connectivity or communication among individual members, and individuals within the group do not simply play a single uniform role. These, he adds, give rise to the sense of a collectivity that has a life, that is something more than and irreducible to the life of its constituent’s parts.

* Cuthbertson, Anthony. 2016. “Swarm Intelligence: AI Algorithm Predicts the Future.” *Newsweek*. <https://www.newsweek.com/swarm-intelligence-ai-algorithm-predicts-future-418707>

My attention came to focus on swarms partly because of the current political and cultural situation going on in America. This moment seems to be characterized or is often discussed as overlapping political and technological shifts that are clustered around the figure of the swarm. On the political side, there appears to be a growing polarization by partisan populist politics, represented particularly by nativist or white-nationalist alt-right movements like this one in the US and other Western democracies over the last ten years. This has been difficult to ignore since the election of Trump as the US president, and the confrontations we’ve seen between his supporters and opponents that have been in the news over the past year, and this has become apparent as a strong impasse between the so-called right and left in the US and many other places.

Much popular discourse in North America is focused on the role of swarm as being enabled by social media; social media is what catalyzes this polarization. Now, as investigations by the press into the role of social media in politics progresses, online swarms have become both the problem and the answer to the flourishing of illiberal politics. Social media serves both as the arena and the infrastructure for certain narrow-band circulations of information that make contemporary political publics. The characteristics of swarms raised by Thacker are apparent in white-nationalist and alt-right groups which organize in online forums, social media services, and rally and events in the offline world; they’re catalyzed by notable groups and individuals, but which rely as much on local distributed low-level activity of many members.

Now, what I said may equally apply to certain oppositional movements, perhaps maybe the Antifa, or antifascist protest have emerged in response to alt-right groups. Of course, there are other kinds of swarms, too. Indeed, fans of the pop singer Beyoncé identify themselves as a swarm, they call themselves the Beyhive, and take Beyoncé to be their queen bee, drawing upon biological metaphors to explain the being of their fan community, but they can also transform into political swarms as well. This occurred in late 2016, when a Donald Trump supporter, Betsy McCaughey, attacked Hillary Clinton

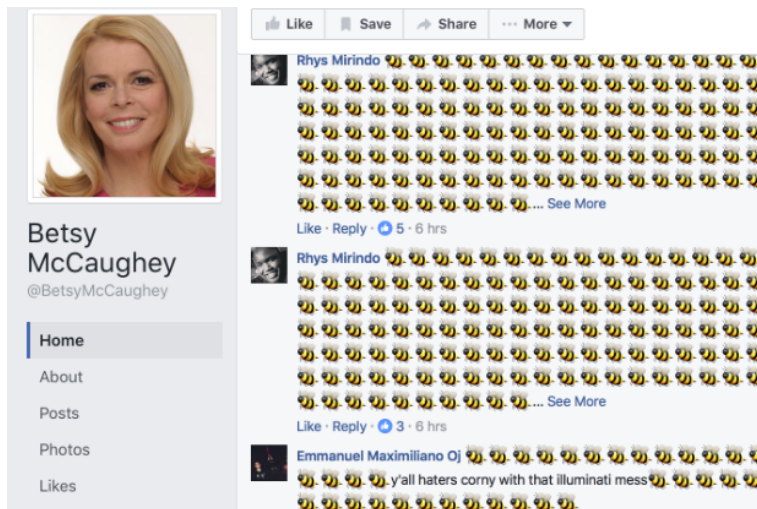


Figure 7*

curious, and one is that swarms seems to be accompanied by a hardening of group identities and values. In the context of Trumpism, individuals have sensed a betrayal of “the myth of democratic progress,” while corporate profits skyrocket, swarm in to hyper-polarized positions, and this is something that Lucas Bessire and David Bond (2017) have written about recently in *Cultural Anthropology*, and this has produced a lot of confrontations. The promise of the mass politics of compromise and consensus seems to recede as people come to deny each other’s notions of what reality itself is.

The other curiosity is, as I have mentioned, that in opposition to such swarms, progressives often advocate more swarms. Judith Butler recently wrote that, “the marginalized must assemble and assert their perhaps inarticulable demands through the present assembly of their bodies.” (Butler 2017) The disempowered must also swarm. “we need,” and this is, again, Bessire and Bond (2017) arguing that, “antiauthoritarian modes of engagement [that do not reduce] ourselves to warring essences but [activate]

on CNN for liking Beyoncé, and then the Beyhive swarmed around McCaughey’s Facebook page to criticize her comments, like this (figure 7*)—overwhelming.²

Now, whether the swarms in question are politically progressive or regressive, I find two things

* The image is from: Ali, Rasha. 2016. “Beyoncé’s BeyHive Swarms Trump Supporter Who Slammed Hillary Clinton for Listening to Her Music.” *THEWRAP*.
<https://www.thewrap.com/beyonce-fans-beyhive-beehive-troll-trump-supporter-hillary-clinton/>

² But this is not a wholly novel phenomenon either. One can look back to Anonymous as a swarm. We may also go further back to the origins of the free and open software movement, which spoke about the internet as a kind anti-censorship organism, which would perceive censorship as “damage” and “route around it” (Kelty 2008, 51).

revolutionary assemblies of difference.”³ And this also fits Thacker’s schema of swarms. But, then again, so do alt-right groups, so how then should we think about the politics of swarming?

Swarming is Seeing



Figure 9: “A representative snapshot illustrating a distribution of ants” (Gunji and Sakiyama 2013: 2)*

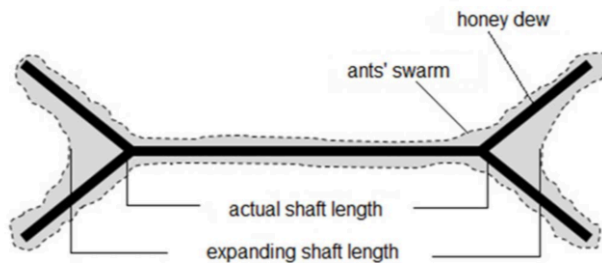


Figure 8: “Schematic figures to explain the data analysis and evaluation of lateral deviation” (Gunji and Sakiyama 2013: 7) **

And here, I want to speculate about swarms by returning to the Muller-Lyer illusion. My intention isn’t to offer robust analysis, but to play at blasphemy with swarms to see what happens. So, one more provocation from me regarding this presentation was an interesting paper I came across in 2013 and had forgotten about until I began to write this symposium; the paper was written by two scientists in Japan, Tomoko Sakiyama and Yukio-Pegio Gunji, and they don’t write imaginatively about the future, in the way of Clynès and Kline’s first paper about the cyborg, but it offered, to me, much like the cyborg did for

³ Such views echo Michael Hardt and Antonio Negri’s swarm and “multitude” (2004, 92). For them the multitude is a networking collectivity made up of diverse and heterogeneous agents. Hardt and Negri emphasize the coherence of swarms that emerge because of rather than in spite of essential differences among its constituent agents. However, they valorize the figure of “communication” as the basis for swarming. Paulo Virno argues similarly that the multitude emerges from “the linguistic-relational abilities of humankind, in the complex of communicative and cognitive faculties...which distinguish humans.” (2004, 57) This notion of communication seems to exclude “perception” (see Virno 2004, 77-78), which this paper argues must be more closely attended to.

Haraway, something with which to think about what swarms might be.

So, in short, this paper suggest that a swarm of ants can seem to see the Müller-Lyer illusion, because they swarm in the same way human neurons perceiving the illusion do. It describes two experiments, a live experiment with ants—this is a photograph of one of those experiments at the top (figure 8^{*})—and a computer simulation of an ant model (figure 9^{**}). With the lab experiment, the authors paint the Müller-Lyer pattern on the cardboard using syrup and set the ants loose on these surfaces and recorded their movement with a video camera. The videos were analyzed to show the density of ants on the surface over a period of a few minutes as the ants explored for syrup or stopped to eat the syrup. The results showed that depending on the angles of the arrows of the Müller-Lyer figures, the ants’ movement between the arrowheads would vary in ways that correspond with how humans perceive different lengths of the figures. Their computer models simulated ants, which moved based on the trade-off between exploiting local sources of food, and exploring for nearby sources of food, given a limited number of ant. The simulation reproduced the pattern, leading the authors to suggest that the fact that humans experience this pattern visually indicates that perception involves a similar trade-off. In the case of visual perception in humans, the tradeoff is between resolving fine details of visual structures and an overall pattern into which those details can fit, given limited neurological resources. The zone in which this tradeoff is negotiated is called the neighborhood of the ant or the neuron. In sum, the paper showed that swarming ants see, in a way, the Müller-Lyer illusion as they forage for food and imply that our neurons, similarly, are when humans perceive the illusion.

Now, this is where I depart from the paper itself, but I think it suggest an interesting play of standpoints and perspectives. On one hand, we can imagine ourselves as a viewer of the swarm, perceiver of the Müller-Lyer illusion, rather than the movements of the individual ants, we see the overall pattern that is produced. The swarm appears, not as a group of individuals, but as a subject of a form of life itself. On

* doi:10.1371/journal.pone.0081714.g006

** doi:10.1371/journal.pone.0081714.g001 (“image B” is excerpted)

the other hand, we can also imagine the standpoint of the event, the standpoint ends up being in the thick of foraging for food, exploiting what one smells in front of us, while keeping an eye on the movements above you, and what they might tell us about where to explore next. It's about constructing this perceptual neighborhood and a process of negotiating different double-binds presented by one's path through the world and then using them to guide future actions. Now, these two subject positions imply reflexive distance for actors in the swarm, which oscillates between the perception of one's neighborhood and the perception of the whole swarm that surrounds one's neighborhood. The way that these two perceptions are linked to one another is an arena for evaluating the validity and significance of one's own sense of the world or cosmology and for organizing one's relations to neighboring actors. The relationship is between immediate perceptions that one ant or actor or person may have about the swarm around them and how they understand the broader pattern of which they are a part.

Now, one of the interesting provocations of this paper, I think, is not just that we should view our perceptions not as true or false in relation to the real world, but, as in the case of the Cartesian subject I mentioned in the beginning, instead our perceptions are the consequences of compromises between conflicting and competing goals, or values, or perhaps interests, enacted in practical and concrete circumstances of each actor. All perceptions, then, become illusions, but illusions don't deceive us, they are a best attempt to perceive under a given set of circumstances, our best attempt to perceive within these tradeoffs and double-binds.

Now, this way of thinking about swarms and perception, I think, it might be terrifying: we can't be certain that we know what is a perception and what is an illusion. At the root of our connection to the world is compromise, which requires giving up complete control over our sense of reality and ourselves. The outside world continuously penetrates the boundaries of our thinking and our illusions penetrate into the world. We imagine and project and predict at the same time that the world comes into us. Some of us may feel terror, but it's also a humbling image. It signals, essentially, compromising and collaborative interactions will lead us to ourselves, and our interdependence with worlds that can never be entirely of our own choosing.

I think this can help us think about the hyper-polarization of politics and I'd argue it goes along with swarming. In contrast to, or rather layered over the terrors of bodily penetration that mark the cyborg, swarms seem to be structured around the terror of cognitive penetration. The terrors of losing control of one's own cognition, consciousness, and intention by the penetrating influence of an outside force. Accordingly, speaking of the American context, criticisms passed back and forth between opposing swarms often focus on trope of misperception or self-deception; people on the other side are victims of fake news, or they're compared to sheep, unaware that they are acting against their own self-interest, and these are things you hear both on the left and the right. Alternatively, they could be accused of blind ideology or playing identity politics; opponents are guilty of promoting specific narratives even when it contradicts an obvious fact of reality. One's compatriots are acting willfully, in accordance with the world as it is—there's no conflict, there's no trade off between what one sees locally and what one perceives globally. One's opponents are controlled by a false perception of the world as they want to see it, through an ideology, identity, or with fake news. So, they make the tradeoff in a different way, a complete schism between reality and perception. The easiest response to this terror is to resist penetration and harden one's identity and cosmology, reinforcing the reality of both—and this is analogous to Wiener's reaction to the fear of bodily penetration.

This leads me to wonder how we might think of swarms in terms of the assemblages of tradeoffs and compromises in which the actors are differently positioned. It suggests to me that we need to think about groups in terms of certain perceptual affinities generated by those double-binds, rather than take identities, or even the capacity for language, to be the basis of swarming (cf. Virno 2004, Hardt and Negri 2004). The Müller-Lyer illusion pushes me to think about how human perception, transformed by bodies, or interfaces, or prosthetics and so on makes up a zone of differentiation across which different swarms might come together. We should, thus, of course, keep our attention on technologies that we are using and how they translate information into different forms, especially on how these technologies transform our senses, changing their spatiality and temporality to dispose us towards perceiving and committing to

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swarm; they’re not two swarms colliding with each other, they’re more like ants on the right and left side of the Müller-Lyer figure, part of the same swarm but far from each other. In the end, blasphemy must be terrifying, swarms may be terrifying, and I don’t know yet how productive this terror is, but I think that to be after the cyborg is to try and follow the terror that can come with loosening our control, whether it is our control over our bodies, our perceptions, or something else. Thank you.

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